Volume-1 April 2025 ISBN No- 978-93-342-5395-5

Emerging Trends in the Field of Commerce, Economics, IPR, Entrepreneurship and Management

S.E.M.TRUST'S

Moinuddin Burhan Harris College of Arts,

A.E.Kalsekar College of Commerce & Management

Nallasopara(West) Tal. Vasai , Dist.- Palghar-401203

NAAC Reaccredited "B++" Grade

Subject: **Multi-Disciplinary** Editor-in-chief:**Dr. Mohammad Khalil Ahmad**

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The Economics of FOMO: Analyzing Its Influence on Consumer Spending Patterns

Author - Ms. Janvi Vijaykumar Rathod
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College- Thakur Ramnarayan College of Arts and Commerce

Abstract
Fear of Missing Out (FOMO) is now a powerful psychological stimulus that directs consumer spending. This research investigates the economic effect of FOMO from primary qualitative data obtained from respondents using in-depth interviews and focus groups. Participants provided insights into their reasons for purchase in different sectors, ranging from technology to fashion, travel, and shopping online. Thematic analysis uncovered primary behavioral trends, suchas impulsive buying, social validation as a driver of purchasing, and the role of online marketing in enhancing FOMO-driven consumption. Evidence indicates that FOMO drives discretionary spending, with consumers choosing instant gratification over long-term financial planning. Companies strategically leverage this behavior byusing limited-time promotions, social media fads, and scarcity marketing. This research adds to behavioral economics through greater understanding of how FOMO influences consumer choice and demandin the marketplace.
Keywords: FOMO, Consumer Expenditure, Behavioral Economics, Impulse Purchase, Digital Marketing

1. Introduction:

The phenomenon of Fear of Missing Out (FOMO) has emerged as a powerful psychological force that influences consumer behavior in the modern digital era. Characterized by an all-pervasive fear of missing out on experiences or opportunities, this phenomenon is fueled by the ubiquitous presence of social media and the instantaneity of digital connectivity. Consequently, FOMO has a vital impact on modern-day expenditure behavior, which in many cases culminates in hasty purchases, changes in monetary judgment, and a higher desire for time-constrained promotions and limited-edition products. Understanding the economic consequences of FOMO is necessary for multiple stakeholders, such as businesses, policymakers, and investment advisors.

The current study focuses on the internal mechanisms through which FOMO influences consumer spending, exploring how it affects market behavior and broader economic consequences of such consumer trends. Through exploring these dynamics, the study will offer insightful findings on how FOMO influences not only personal buying behavior but also larger economic trends and market structures.

2. Review of literature:

Pane, H. P., Luthfi, S., Napitupulu, I., Situmorang, S. H., & Sembiring, B. K. F. (2024). *The Psychological Pull of FoMO in Consumer Behavior: A Literature Review*. *International Journal of Economics and Management Sciences*, 1(4), 402–418. The study examines how FOMO, heightened by social media, influences impulsive purchasing behaviors, concluding that consumers make immediate purchases due to fear of missing limited opportunities.

Van Solt, M. (2019). *#FOMO: How the Fear of Missing Out Drives Consumer Purchase Decisions* (Doctoral dissertation). Florida International University. Van Solt investigates According to a study that examines the relationship between FOMO (Fear of Missing Out) and customers' decisions to make experience purchases, the presence of close friends at events amplifies this effect.

Fahmi, M. (2024). *Exploring the Role of Fear of Missing Out (FOMO) on Consumer Behaviour: A Study of Spending, Trash Talking, and Anxiety*. *Journal of Management Practices, Humanities and Social Sciences*, 8(5), 1-13. This study looks at the relationship between FOMO and poor word-of-mouth, excessive expenditure, and consumer anxiety. Based on an analysis of 421 customer data, the study concludes that these negative consumer behaviors are substantially predicted by obsessive brand enthusiasm, which is fueled by FOMO.

Alfina, S., Hartini, S., & Mardhiyah, D. (2023). *FOMO Related Consumer Behaviour in Marketing Context: A Systematic Literature Review*. *Cogent Business & Management*, 10(3), 2250033. In order to comprehend the function of FOMO in consumer behavior, this thorough study examines 42 empirical investigations. The authors point out that although FOMO is frequently associated with unpleasant psychological states, it may also result in greater spending, which offers marketers both chances and problems.

Moore, J. (2024). *She Blew Her Life Savings. How Tech Is Turning Casual Spenders Into Binge Shoppers*. *Barron's*. In order to comprehend the function of FOMO in consumer behavior, this thorough study examines 42 empirical investigations. The authors point out that although FOMO is frequently associated with unpleasant psychological states, it may also result in greater spending, which offers marketers both chances and problems.

3. Research Gap:

3.1 Long-term Financial Impact: Not much study has been done on the long-term effects of FOMO-driven spending on debt accumulation, savings, and financial stability.
3.2 Social Media Amplification: Although research shows that FOMO contributes to impulsive buying, little is known about how it is amplified by social media marketing.
3.3 Economic Repercussions: More research is required to determine the wider effects of FOMO-driven expenditure on consumer debt and market trends.
3.4 Behavioral Patterns: Insights on long-term spending patterns impacted by FOMO are lacking in the literature currently in publication, which concentrates on snap judgments.
3.5 Influence of Digital Marketing: More research is needed to determine how influencers and targeted internet ads contribute to FOMO-based purchasing patterns.

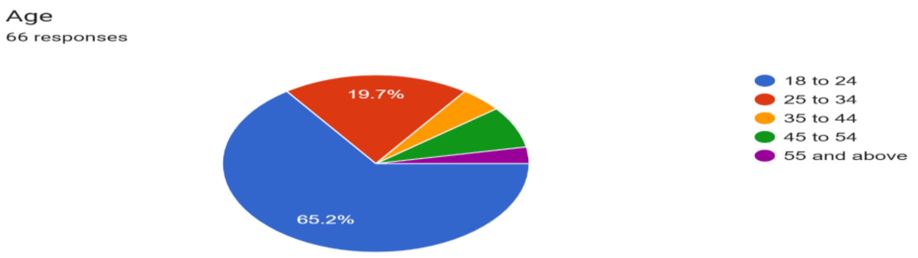
4. Objectives:

- To analyze how FOMO influences impulsive and luxury spending.
- To examine the role of social media in amplifying FOMO-driven purchases.
- To assess FOMO's impact on savings, debt, and market trends.

5. Hypothesis:

Null Hypothesis (H_0): FOMO has no significant impact on impulsive and luxury spending.
Alternative Hypothesis (H_1): FOMO significantly increases impulsive and luxury spending.

6. Data Analysis



The statistics reveal a high age spread, with the 18-24 age bracket leading at 65.2%, followed by the 25-34 age bracket at 19.7%. The older age brackets are smaller, with 35-44 standing at 4.5% and 45-54 at 7.6%. The graph is heavily biased towards younger generations.

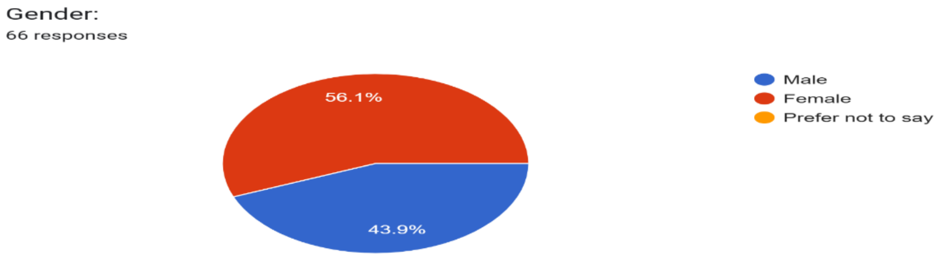
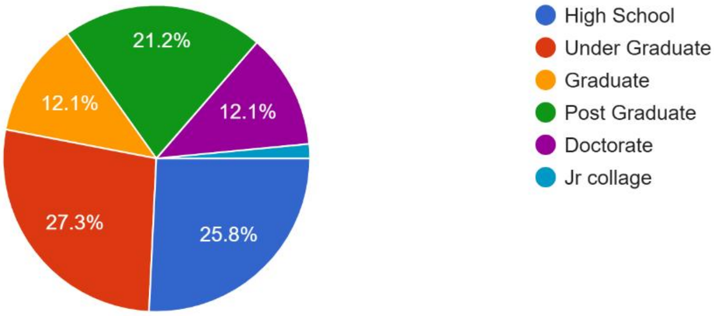


Chart illustrating gender breakdown would indicate that females constitute the majority at 6.1%, with males at 43.9%. The chart illustrates a marginal female majority, with a close to even gender balance overall.

 ISBN No- 978-93-342-5395-5

Education

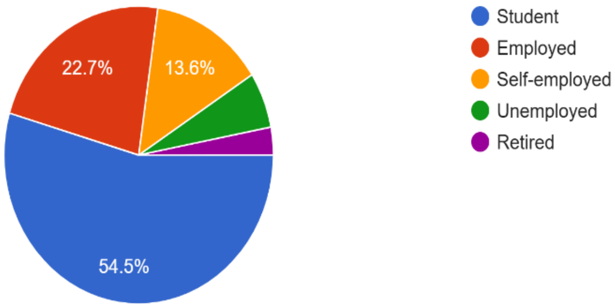
66 responses



Postgraduates (21.2%) undertake further studies beyond a bachelor's degree, whereas Graduates (12.1%) and Doctorates (12.1%) form a lower percentage.

Employment status :

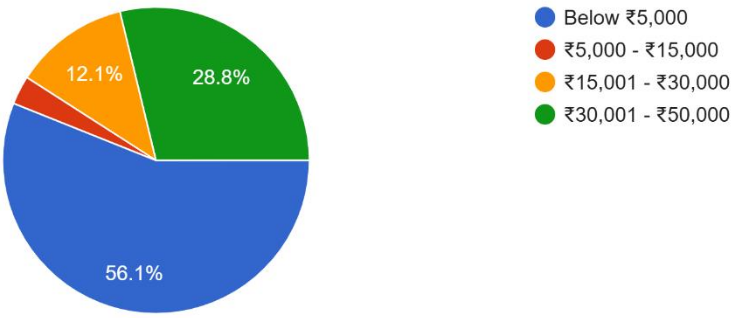
66 responses



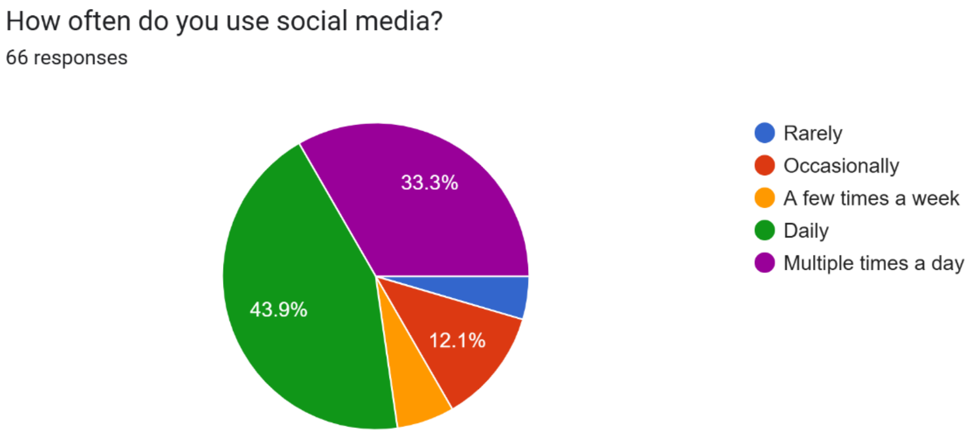
The pie chart indicates that 54.5% of 66 respondents are students, followed by 22.7% who work. 13.6% are self-employed, and 6.1% are unemployed. Another smaller group, 6.1%, is unemployed, and 3% are retired. The data indicates a high percentage of a student population followed by a combination of working, self-employed, unemployed, and retired people.

Monthly Income (or Allowance if Student)

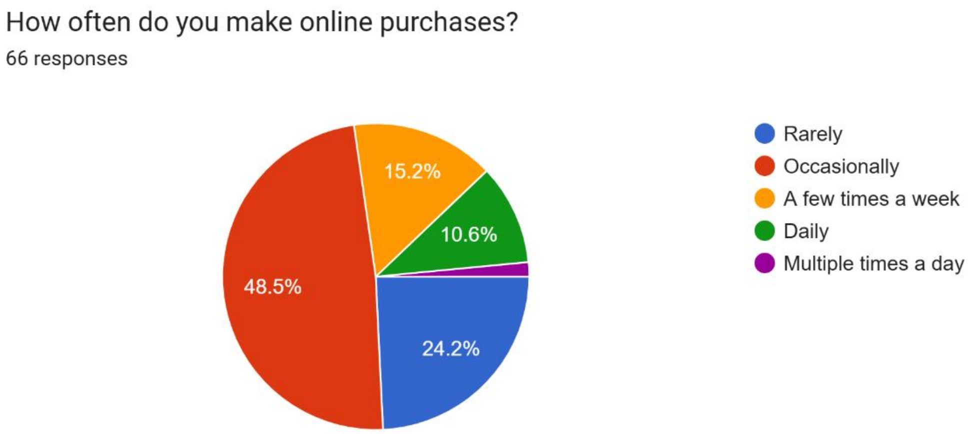
66 responses



The pie chart indicates that 54.5% of 66 respondents are students, followed by 22.7% who work. 13.6% are self-employed, and 6.1% are unemployed. Another smaller group, 6.1%, is unemployed, and 3% are retired. The data indicates a high percentage of a student population followed by a combination of working, self-employed, unemployed, and retired people.



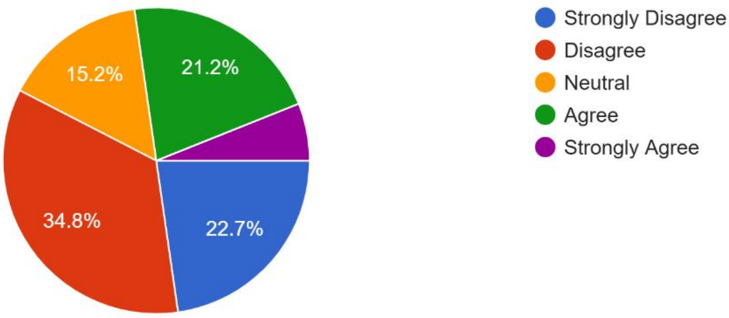
The pie chart indicates that 43.9% of the respondents use social media every day, 33.3% use it several times a day. There is a smaller portion, 6.1%, which uses it a few times a week, and 12.1% uses it from time to time. The least active portion is 4.5%.



The pie chart indicates that 48.5% of the respondents occasionally shop online, 24.2% shop online seldom, 15.2% shop online occasionally, 10.6% shop online every day, and 1.5% shop online multiple times a day, reflecting diverse shopping habits. The data implies that fewer people shop online frequently.

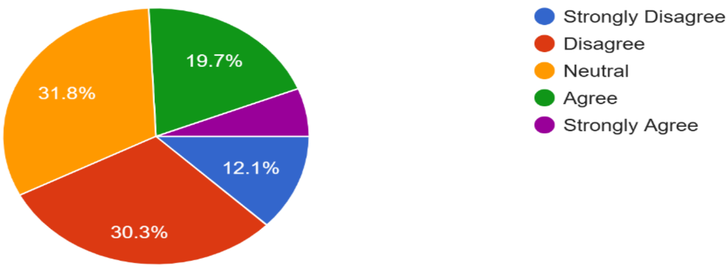
The pie chart indicates opinions of respondents about unplanned buys because of FOMO for limited-time promotions. 30.3% are neutral, 30.3% disagree, and 12.1% strongly disagree. But 24.2% agree to be influenced by such promotions, and 3% strongly agree, indicating that a minority would be highly prone to unplanned buys because of time-sensitive offers.

I feel pressured to buy luxury items when I see others owning them.
66 responses



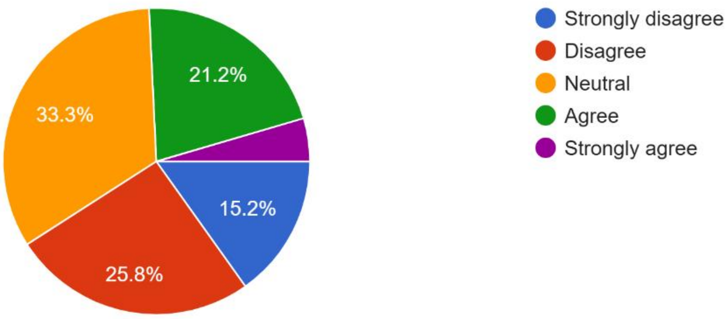
The pie chart indicates the respondents' sense of pressure to purchase luxury goods when they notice others possessing them. The majority of respondents disagree, with 34.8% disagreeing and 22.7% strongly disagreeing. Yet, 21.2% agree and 6.1% strongly agree, showing a minority experiencing high pressure to purchase luxury goods. The statistics indicate the majority of respondents do not fall prey to social pressure.

FOMO influences me to spend money on products or experiences I had not planned to buy.
66 responses



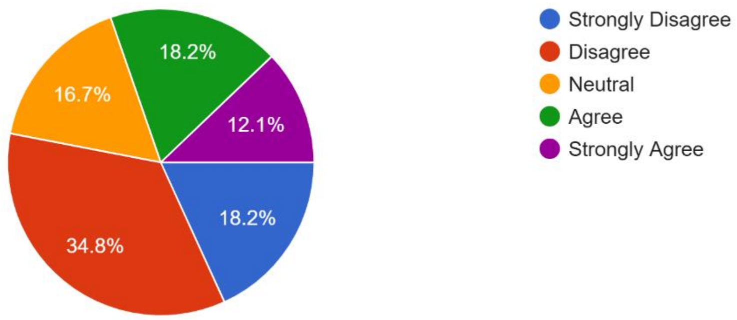
The pie chart indicates that 31.8% of the respondents are affected by FOMO in unplanned buying. But 30.3% disagree, 12.1% strongly disagree, and 19.7% agree that FOMO leads them to spend on unplanned products or services. A minority of 6.1% strongly agrees that they are susceptible to FOMO spending.

I regret purchases I made because I feared missing out on a trend or promotion.
66 responses



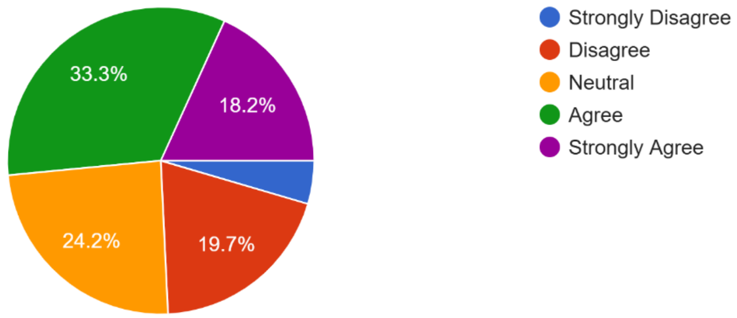
The pie chart shows that 33.3% of respondents felt neutral about their purchases influenced by trends or promotions, while 21.2% agreed, and 4.5% strongly agreed, with 25.7% experiencing regret due to FOMO-based spending. The remaining 41% disagreed, indicating a significant portion of individuals remain uncertain or have experienced regret.

I prioritize spending on exclusive or trendy products even if they are expensive.
66 responses



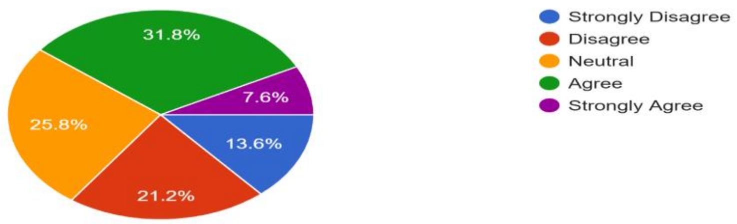
The pie chart shows that 34.8% of respondents disagree with spending on expensive, trendy items, while 18.2% strongly disagree, 16.7% remain neutral, and nearly 30% agree, indicating varying consumer spending behaviors. Despite this, a significant minority still values these items, highlighting varying consumer spending behaviors

Social media influences my purchasing decisions by making me feel I need certain products or experiences.
66 responses

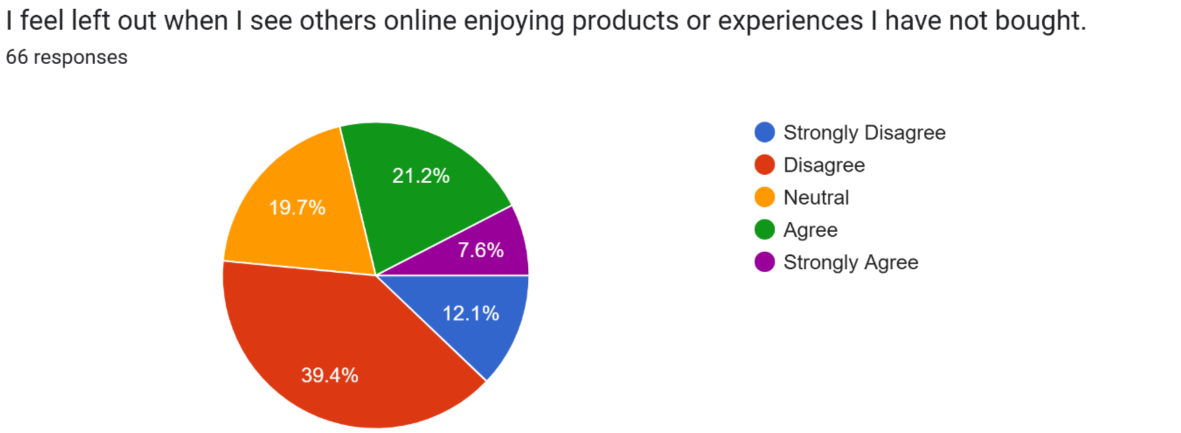


The data shows that over 50% of respondents acknowledge the impact of social media on their purchasing decisions, with 33.2% agreeing and 18.2% strongly agreeing. However, 24.3% remain neutral, and 19.7% disagree, suggesting that some individuals remain unaffected or indifferent to the influence of social media.

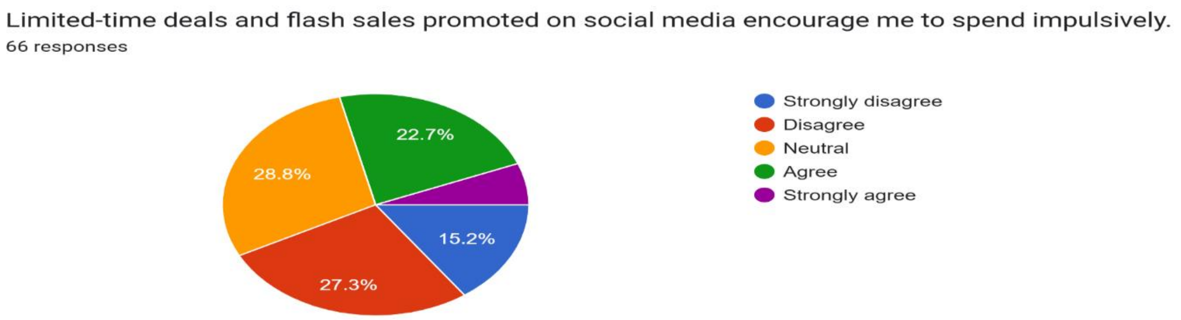
Seeing influencers or friends showcase new purchases makes me more likely to buy similar items.
66 responses



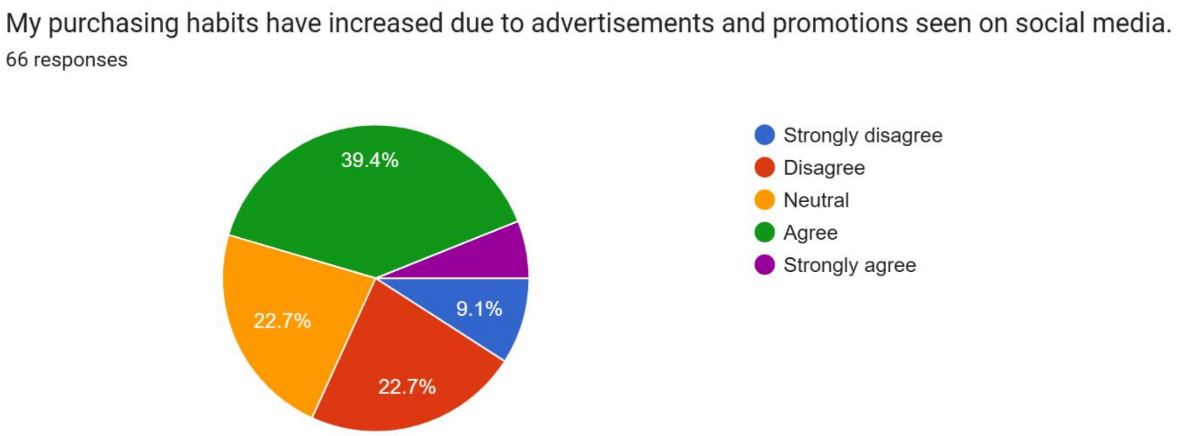
The data shows that 31.8% of respondents agree that peer and influencer influence influences purchasing behavior. However, 25.8% remain neutral, suggesting occasional influence. 21.2% disagree, and 13.6% strongly disagree, suggesting 35% of participants do not feel pressured to buy items based on peer influence. Overall, some individuals resist or remain indifferent to external influences.



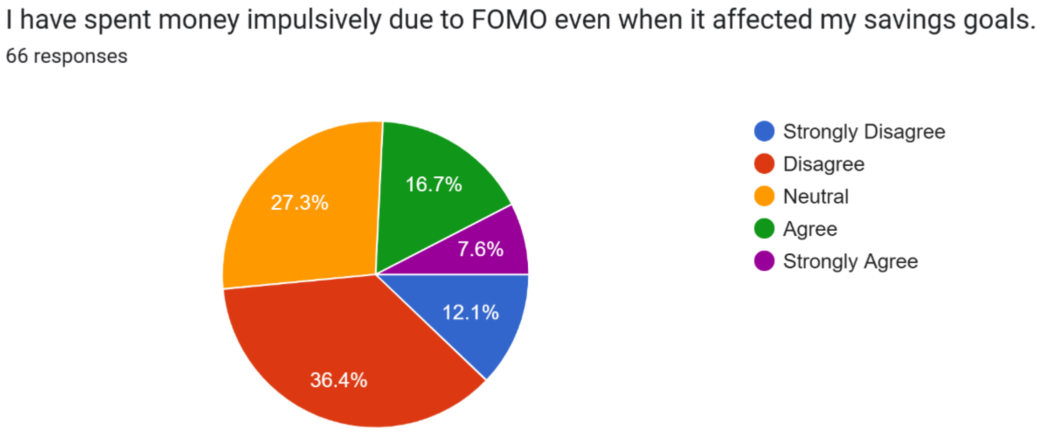
The pie chart shows that 51.5% of people disagree or strongly disagree with others online enjoying products or experiences they haven't purchased, while 28.8% feel FOMO (fear of missing out), with 21.2% agreeing and 7.6% strongly agreeing. 19.7% remain neutral, possibly feeling indifferent or ambivalent about the issue.



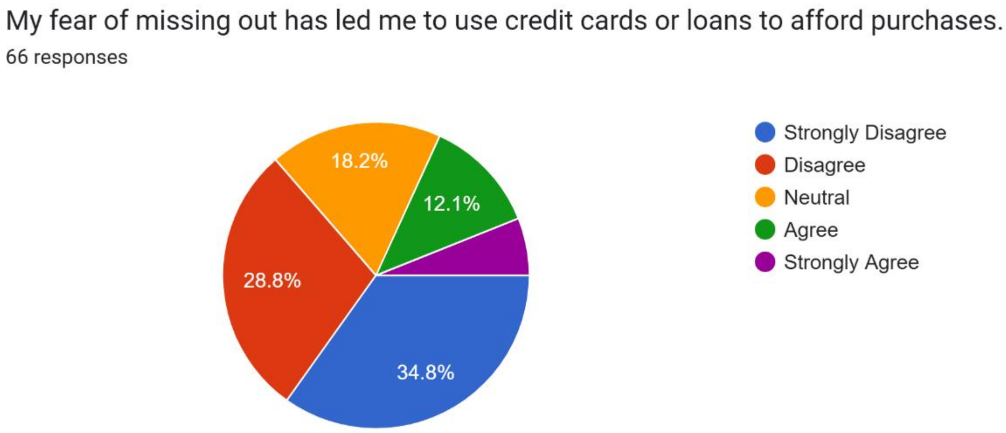
The pie chart shows that 42.5% of people disagree or strongly disagree with limited-time deals and flash sales promoted on social media, suggesting they are not easily influenced. However, 28.85% acknowledge being influenced to some degree, with 22.7% agreeing and 6.15% strongly agreeing that such sales can lead to impulsive purchases.



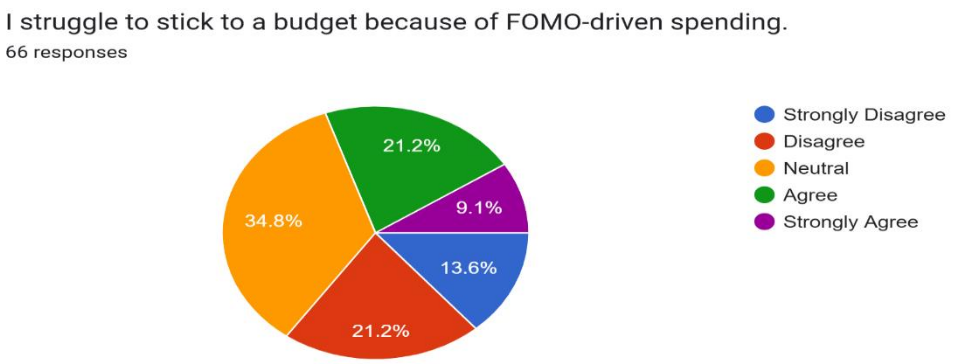
The pie chart shows that 45.5% of respondents believe their purchasing habits have increased due to social media ads, while 22.7% remain neutral. However, 31.8% disagree, indicating that social media advertising effectively drives consumer spending for a significant portion of people.



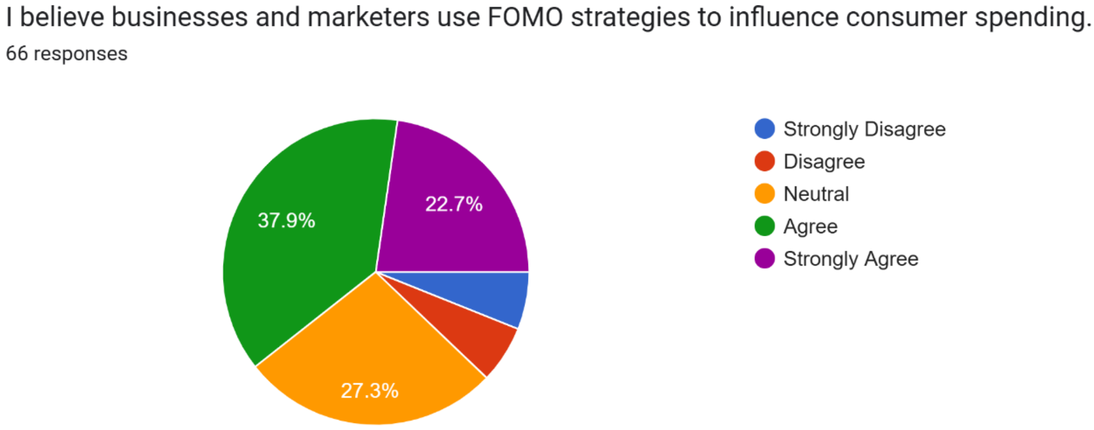
The pie chart shows that 48.5% of respondents disagree with FOMO-driven spending, while 27.3% remain neutral. However, 24.3% admit to being influenced by FOMO, with 16.7% agreeing and 7.6% strongly agreeing, despite the impact on savings goals. This suggests that financial discipline is not always maintained.



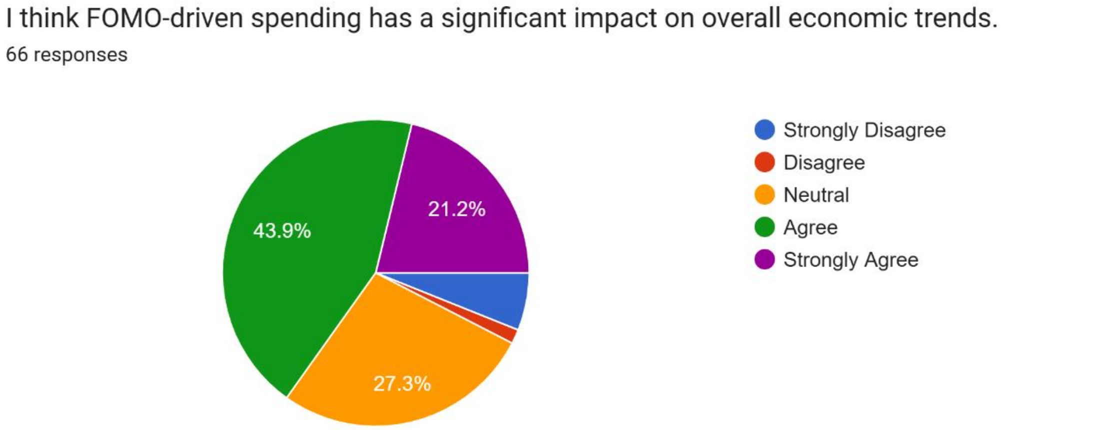
The pie chart shows that FOMO (fear of missing out) influences people's financial decisions, particularly in using credit cards or loans. Most people avoid debt due to social pressures, but nearly one in five use them to keep up with trends or experiences they fear missing out on.



The pie chart shows that fear of missing out (FOMO) influences people's financial decisions, particularly in using credit cards or loans for purchases. A majority of 63.6% disagree or strongly disagree, suggesting most avoid debt due to social pressures. However, 18.2% acknowledge FOMO has led them to use credit or loans, with 12.1% agreeing and 6.1% strongly agreeing. This suggests nearly one in five individuals borrow money to keep up with trends or experiences they fear missing out on.



The pie chart indicates that 66 respondents think that businesses and marketers apply FOMO tactics to control consumer expenditure. The majority, 60.6%, agree and strongly agree, with 22.7% strongly agreeing. Fewer disagree, with 7.6% and 4.5% strongly disagreeing. The rest, 27.3%, are neutral, showing uncertainty or no strong opinion.



The pie chart shows 43.9% of 66 participants agree that FOMO-driven spending significantly impacts economic trends, with 21.2% strongly agreeing. A small percentage of respondents disagree, likely around 7.6%, ensuring 100% representation.

Findings:

To determine whether the null hypothesis (H_0) or the alternative hypothesis (H_1) is accepted, we need to assess the data in relation to FOMO's impact on impulsive and luxury spending.

Restating the Hypotheses:

1. Impulsive Spending & FOMO:
   - 31.8% of respondents agreed that FOMO influenced their unplanned purchases.
   - 24.3% admitted that FOMO led them to spend despite its impact on savings goals.
   - 28.85% acknowledged that social media flash sales encouraged impulsive buying.
2. Luxury Spending & Social Influence:
   - 27.3% felt pressured to purchase luxury goods when seeing others possess them.
   - Nearly 30% admitted to spending on expensive, trendy items despite disagreement from 53%.

3. Social Media's Role:
   - 51.5% of respondents believed social media influences their purchasing decisions.
   - 31.8% agreed that peer and influencer influence impact their purchases.
4. FOMO & Financial Habits:
   - 18.2% acknowledged using credit cards or loans due to FOMO.
   - 60.6% agreed that businesses use FOMO tactics to influence spending.
   - 43.9% believed FOMO-driven spending significantly impacts economic trends.

The data demonstrates that while not everyone is affected, a significant portion of respondents (ranging between 24-51%) report increased spending due to FOMO, particularly on impulsive and luxury purchases. Moreover, social media and marketing strategies leveraging FOMO appear to drive consumer behavior. Given these findings, we reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1): FOMO significantly increases impulsive and luxury spending.

Conclusion:

The research identifies that Fear of Missing Out (FOMO) plays a crucial role in consumer spending habits, most notably in impulse and high-end spending. This fear, fueled by marketing strategies and social media, pervades buying habits across age groups but is especially prominent in younger consumers. A high proportion of respondents confess to making impulse purchases because of FOMO, giving in to pressure when surrounded by luxury items possessed by friends, and being swayed by time-limited offers and social media promotions. Some use credit or loans to pay for these expenses, highlighting possible financial risks. The ubiquity of FOMO-spending has repercussions for consumer borrowing, savings patterns, and marketplace trends. Marketers and companies apply this psychological trigger to stimulate sales, but doing so is risky for long-term financial viability and ethical consumerism. The research fails to accept the null hypothesis and accepts the alternative hypothesis, affirming FOMO's wide-ranging impact on indiscriminate and high-end spending. Research in the long term should be conducted to examine the long-term financial impacts of FOMO-based expenditures and how digital marketing influences the experience of consumers.

Suggestions:

1. Enhancing Financial Literacy Programs – Governments, schools, and institutions need to incorporate FOMO-awareness training into Financial Education Programs.
Teaching consumers, particularly youths, about budgeting, controlling impulses, and the dangers of debt accrual can decrease spending fueled by FOMO.
2. Encouraging Mindful Consumption – Consumers must be prompted to implement mindful spending behavior through mechanisms like delayed buying, setting of money objectives, and detoxing digital intervals to reduce impulse purchasing behavior caused by exposure to social media.
3. Ethical Marketing Regulations – Regulatory agencies must create standards to help businesses employ ethical marketing techniques. Advertising transparency, prominent disclosure of influencer collaborations, and constraints on coercive scarcity strategies (e.g., misleading time-limited offers) can save consumers from exploitative FOMO-based marketing.
4. Leveraging Technology for Consumer Awareness – Fintech firms and financial institutions can create AI-based budgeting applications and mobile apps that warn consumers about impulse purchases. Such applications can offer real-time expenditure data and alerts when users make frequent FOMO-induced transactions.
5. Future Research on Long-Term Economic Impact – Additional research would examine the macroeconomic implications of FOMO consumption, especially its influence on savings rates, consumer debt, and market volatility. Policymakers would be able to use these findings to develop strategies that balance economic stimulation with long-term financial behavior.

Reference

- Pane, H. P., Luthfi, S., Napitupulu, I., Situmorang, S. H., & Sembiring, B. K. F. (2024). The psychological pull of FoMO in consumer behavior: A literature review. International Journal of Economics and Management Sciences, 1(4), 402–418.

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- Moore, J. (2024). She blew her life savings. How tech is turning casual spenders into binge shoppers. Barron's.

Blockchain Technology: An Overview

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ABSTRACT

Blockchain technology is a revolutionary digital ledger system that has gained widespread attention in recent years due to its potential to transform various industries, including finance, supply chain management, healthcare, and more. At its core, blockchain is a decentralized and distributed ledger that records transactions across multiple computers in a way that ensures the security, transparency, and immutability of the data. Each transaction is stored in a "block," and blocks are linked together to form a chain, which is maintained by a network of nodes or participants. Furthermore, blockchain technology utilizes cryptographic algorithms to ensure data integrity, prevent fraud, and enhance privacy. Smart contracts, self-executing contracts with the terms directly written into code, are another important feature of blockchain, enabling automation and reducing the risk of human error. This overview explores the fundamental principles behind blockchain technology, its applications, benefits, and challenges. By understanding these key aspects, organizations and individuals can better assess the potential impact of blockchain and its role in shaping the future of digital transactions and decentralized systems.

Key-words: Blockchain, digital ledger, cryptographic algorithms, data integrity

INTRODUCTION

Blockchain technology is a groundbreaking innovation that has the potential to transform various industries by providing a decentralized, transparent, and secure way of recording and sharing data. Originally developed as the underlying technology for cryptocurrencies like Bitcoin, gaining attraction in diverse sectors such as finance, supply chain management, healthcare, and even voting systems.

At its core, blockchain is a distributed ledger system where data is stored in blocks that are linked together in a chronological chain. Each block contains a list of transactions, and once data is added to the blockchain, it is virtually immutable. This means that the information cannot be altered or deleted without altering every subsequent block, which requires the consensus of the network participants. This property ensures the integrity, security, and transparency of the data.

One of the most appealing features of blockchain technology is its decentralization. Unlike traditional centralized systems, where a single authority controls the database, blockchain relies on a network of nodes (computers) to maintain and validate the ledger. This reduces the reliance on intermediaries and enhances trust among participants. Furthermore, blockchain leverages cryptographic techniques to protect the privacy of users while ensuring the authenticity of transactions.

As blockchain continues to evolve, its potential applications are becoming more diverse and transformative. However, challenges such as scalability, energy consumption, and regulatory concerns still remain. Despite these obstacles, blockchain technology is poised to revolutionize industries by enabling secure, transparent, and efficient digital transactions in an increasingly interconnected world.

REVIEW OF LITERATURE

Blockchain technology has garnered significant attention in both academic and industry circles since its inception in 2008 by an anonymous entity known as Satoshi Nakamoto. This literature review explores the key developments, applications, challenges, and future trends of blockchain technology as seen in existing research.

1. The foundational principles of blockchain technology are well-documented in the literature. Nakamoto's original whitepaper, "Bitcoin: A Peer-to-Peer Electronic Cash System," introduced the concept of a decentralized, immutable ledger. This decentralized nature, underpinned by cryptographic techniques, allows for secure and transparent transactions without the need for intermediaries (Nakamoto, 2008).
2. Subsequent research has expanded on these principles, emphasizing key features such as immutability, consensus mechanisms (e.g., Proof of Work and Proof of Stake), and transparency (Tapscott & Tapscott, 2016).
3. The application of blockchain technology has expanded far beyond its original use case in cryptocurrencies. Early research primarily focused on Bitcoin and other cryptocurrencies, exploring their potential as an alternative form of currency and their impact on the financial sector (Narayanan et al., 2016).
4. In healthcare, blockchain is being explored to ensure secure patient data management and interoperability between healthcare systems (Azaria et al., 2016).

5. Blockchain has been proposed as a solution for secure digital voting systems, as it can ensure transparency, security, and voter anonymity (Zohar & Laufer, 2017).
6. Interoperability between different blockchain networks is another critical area of research, as the ability to seamlessly communicate across multiple blockchains would significantly enhance the utility of the technology (Xu et al., 2019).
7. In the supply chain sector, blockchain has been widely studied for its ability to provide transparent tracking of goods, reducing fraud and improving efficiency (Kouhizadeh et al., 2020).

RESEARCH METHODOLOGY

Blockchain technology is a rapidly evolving field that encompasses a variety of theoretical and practical challenges. The research methodology employed to study blockchain technology depends on the specific objectives and focus areas of the research. Given the interdisciplinary nature of blockchain, methodologies typically span across computer science, economics, law, social sciences, and engineering. This section provides an overview of common research methodologies used in blockchain technology studies, with a focus on their application to understand its design, adoption, security, and impact across industries.

OBJECTIVES OF THE STUDY

The following objectives outline the key areas of focus for blockchain research and study:
1. Understanding the Fundamental Concepts and Mechanisms
2. Exploring Blockchain's Applications Across Various Industries
3. Evaluating the Security and Privacy Features of Blockchain
4. Investigating Scalability Solutions

FINDINGS OF THE STUDY

1. Decentralization and Trust: Blockchain's core strength lies in its decentralized nature, which eliminates the need for intermediaries in transactions. This decentralization provides transparency, security, and trust in various applications:

- **Transparency**: Every transaction on the blockchain is recorded on a distributed ledger that is visible to all participants. This makes it difficult to manipulate data or perform fraudulent activities.
- **Trust**: Blockchain facilitates trust among participants who do not know each other, as trust is placed in the consensus algorithm and cryptographic principles rather than a central authority.

2. Security and Immutability: Blockchain technology provides robust security features, which is one of the primary reasons for its popularity in cryptocurrency and other sensitive sectors:

- **Immutability**: Once a transaction is added to the blockchain, it is nearly impossible to alter. This ensures data integrity, making blockchain an attractive solution for secure record-keeping in industries like healthcare, finance, and supply chain.
- **Cryptographic Security**: Blockchain uses cryptographic techniques (e.g., hashing, digital signatures) to ensure the security of data. This prevents unauthorized access and enhances the security of transactions.

However, some studies indicate that while blockchain is secure by design, vulnerabilities still exist, especially related to smart contract coding errors and 51% attacks in Proof of Work-based systems.

3. Scalability Challenges: One of the major challenges facing blockchain technology is scalability. Current blockchain networks, particularly those using Proof of Work (PoW) like Bitcoin and Ethereum, struggle with handling a high number of transactions per second (TPS). Some key findings related to scalability are:

- **Network Congestion**: During periods of high transaction volumes, blockchain networks can become congested, leading to delayed transactions and higher fees.
- **Scalability Solutions**: Research has led to the development of potential solutions, such as: **Layer 2 Solutions**: Technologies like the Lightning Network for Bitcoin and Plasma for Ethereum aim to process transactions off-chain to reduce congestion on the main blockchain. **Sharding**: Dividing the blockchain into smaller parts (shards) allows for parallel processing of transactions, improving overall throughput.

4. Energy Consumption and Sustainability: Blockchain networks, particularly those utilizing Proof of Work, consume a significant amount of energy, raising concerns about their environmental impact:

- **High Energy Consumption**: Bitcoin and other PoW-based networks have been criticized for their high energy consumption due to the mining process. This issue is particularly critical as blockchain adoption grows and more computational power is required to secure networks.
- **Shift Toward Energy-Efficient Models**: Some blockchain platforms, such as Ethereum, are transitioning from Proof of Work to Proof of Stake (PoS), which is far more energy-efficient. PoS algorithms do not require energy-intensive mining processes, reducing the overall environmental footprint of blockchain systems.

5. Blockchain's Applicability Across Industries: Blockchain technology is being explored across various industries beyond cryptocurrency. Key findings include:

- **Finance**: Blockchain is widely used in digital currencies (e.g., Bitcoin, Ethereum) and decentralized finance (DeFi). It has the potential to disrupt traditional financial institutions by enabling peer-to-peer transactions without intermediaries.
- **Supply Chain**: Blockchain is being used to enhance supply chain transparency, allowing for better traceability and reducing fraud. This is particularly useful in industries such as food safety, pharmaceuticals, and luxury goods.
- **Healthcare**: Blockchain offers potential in secure health data management, where patients can have control over their medical records, and healthcare providers can access accurate, tamper-proof data.
- **Governments**: Blockchain is also being researched for secure voting systems, identity management, and public service delivery.

6. Smart Contracts and Legal Automation: Smart contracts—self-executing contracts with predefined rules encoded into blockchain—are one of the most transformative features of blockchain technology. Key findings include:

- **Automation**: Smart contracts automate business processes, reducing the need for intermediaries, lowering transaction costs, and increasing efficiency.
- **Legal Implications**: Despite their potential, smart contracts face legal challenges, such as issues related to enforceability and the lack of standardization. Legal frameworks and regulations surrounding smart contracts are still evolving.

7. Regulatory and Legal Challenges: The regulatory environment for blockchain technology is complex and varies across jurisdictions.

- **Lack of Clear Regulation**: Many blockchain applications, particularly cryptocurrencies, operate in a gray area of regulation. Governments are still figuring out how to regulate blockchain-based systems to prevent illegal activities like money laundering and fraud while promoting innovation.
- **Global Regulatory Differences**: Different countries have adopted varying approaches to blockchain regulation. While countries like Switzerland and Singapore have favorable regulatory environments for blockchain, others, such as China, have imposed strict restrictions on cryptocurrency transactions.

SUGGESTIONS

1. Focus on Scalability Solutions- Scalability remains a significant challenge for blockchain, particularly in high-demand applications. Future studies should:

- **Explore Layer 2 Solutions**: Research should continue into Layer 2 solutions (e.g., Lightning Network for Bitcoin, Plasma for Ethereum) that help scale blockchain networks without compromising decentralization and security.
- **Investigate Sharding**: Further studies should focus on sharding mechanisms, which divide blockchain networks into smaller parts (shards) that can process transactions in parallel, improving throughput and reducing bottlenecks.
- **Optimizing Consensus Algorithms**: New consensus algorithms should be tested to provide scalability, energy efficiency, and security, such as Proof of Stake (PoS), Delegated Proof of Stake (DPoS), or Hybrid Consensus Models.

2. Enhance Energy Efficiency: Given the concerns surrounding the environmental impact of blockchain, particularly in Proof of Work (PoW) networks:

- **Promote Energy-Efficient Consensus Mechanisms**: Future research should explore alternatives to PoW, such as Proof of Stake (PoS) and other low-energy consensus mechanisms, to reduce the carbon footprint of blockchain systems.
- **Develop Carbon Offset Solutions**: Studies should focus on developing carbon offset mechanisms for PoW systems or integrating blockchain technology with renewable energy solutions to mitigate the environmental impact.

3. Smart Contract Security and Standardization: Smart contracts are a key feature of blockchain technology, but security and legal concerns continue to pose challenges:

- **Focus on Security Audits for Smart Contracts**: Future research should explore advanced techniques for auditing and verifying smart contracts to prevent vulnerabilities, bugs, and malicious exploits.
- **Create Legal Frameworks for Smart Contracts**: Researchers and policymakers should collaborate to develop clear legal frameworks for smart contracts, ensuring they are enforceable and recognized under existing legal systems.
- **Develop Standardized Smart Contract Templates**: Standardized, reusable, and audited smart contract templates can help avoid common coding errors and improve the security of blockchain applications.

4. Regulatory Frameworks and Compliance: The lack of clear regulation around blockchain technologies, especially cryptocurrencies, remains a major barrier to widespread adoption:

- **Advocate for Global Regulatory Collaboration**: Future studies should encourage governments and international bodies to collaborate on creating clear, globally recognized regulatory frameworks for blockchain technologies. This would provide businesses with the legal certainty needed to invest in blockchain.
- **Focus on Compliance Tools**: Research should be conducted into tools that help blockchain platforms comply with regulatory requirements, such as anti-money laundering (AML) and know-your-customer (KYC) protocols.

5. Blockchain for Social and Economic Inclusion
Blockchain's potential for financial inclusion and democratizing access to services remains an underexplored area:

- **Promote Financial Inclusion**: Research should explore how blockchain can be used to bring financial services to underserved populations, particularly in developing countries where access to banking and financial services is limited.
- **Investigate Decentralized Identity Solutions**: Future studies could explore how blockchain-based decentralized identity solutions can provide more secure, accessible, and privacy-respecting means of managing personal data, particularly for individuals without official identification.

6. Enhanced Blockchain Education and Awareness: One of the key barriers to blockchain adoption is a lack of understanding. To bridge this gap, the following initiatives are suggested:

- **Create Educational Platforms**: Educational programs, workshops, and certifications focusing on blockchain technology should be developed to train a wider range of professionals, from developers to business leaders and policymakers.
- **Promote Public Awareness**: Studies should also focus on increasing public awareness about blockchain's potential benefits, security features, and real-world applications through media, conferences, and community events.

7. Focus on Privacy and Confidentiality: Privacy concerns are a significant barrier to the adoption of blockchain in industries dealing with sensitive information, such as healthcare and finance:

- **Develop Privacy-Enhancing Technologies**: Future research should focus on improving privacy features in blockchain networks. Techniques like zero-knowledge proofs (ZKPs) or homomorphic encryption could allow transactions to remain private while still being verifiable.
- **Adopt Private Blockchain Solutions**: While public blockchains offer transparency, private or permissioned blockchains might be more suitable for certain industries, such as healthcare or finance, where data privacy is a top priority.

8. Blockchain in Emerging Technologies: As blockchain is integrated with emerging technologies like Artificial Intelligence (AI), Internet of Things (IoT), and Big Data, future research should:

- **Explore Blockchain-AI Integration**: Research should investigate how blockchain can be combined with AI for enhanced security, automation, and decision-making processes. AI can help optimize blockchain networks by improving scalability and transaction validation.
- **IoT and Blockchain Integration**: Blockchain's use in securing IoT devices and their data should be explored further. This could lead to new use cases in areas such as smart cities, autonomous vehicles, and connected healthcare devices.

9. Develop More User-Friendly Blockchain Solutions: Blockchain technology can be complex for mainstream adoption. Studies should focus on improving user experience and simplifying blockchain-based solutions:

- **Simplify Blockchain Interfaces**: Blockchain interfaces and tools should be designed to be more user-friendly and accessible to non-technical users, allowing businesses and individuals to adopt the technology with minimal complexity.
- **Improve Wallet Solutions**: Blockchain wallet solutions should become more intuitive and secure, offering multi-currency support and features like easy recovery of lost keys, which would facilitate the broader use of blockchain-based assets.

CONCLUSION

Blockchain technology has emerged as a transformative force, offering decentralized, secure, transparent, and immutable solutions across a variety of industries. Its potential to revolutionize sectors such as finance, healthcare, supply chain management, and governance has been widely recognized. Through this study, it has become clear that blockchain technology holds significant promise, but also faces substantial challenges that must be addressed for broader adoption and integration.

The decentralized nature of blockchain fosters trust and transparency by eliminating the need for intermediaries. This has led to innovative applications, especially in cryptocurrencies, decentralized finance (DeFi), and secure record-keeping systems. Furthermore, blockchain's security features, including its cryptographic integrity and immutability, make it an ideal solution for safeguarding sensitive data.

Despite the challenges, the findings of the study indicate that blockchain's potential for long-term transformation remains significant. Several ongoing research efforts are focused on scalability improvements, energy-efficient consensus mechanisms, privacy-enhancing technologies, and the development of cross-chain interoperability solutions. Moreover, blockchain's potential for financial inclusion, decentralized identity management, and its ability to foster more transparent and accountable governance systems are driving global interest in its adoption.
Finally, while blockchain technology is still evolving, its applications are poised to redefine industries by providing secure, decentralized alternatives to traditional systems. Continued research and collaboration across technical, legal, and regulatory domains are essential to overcoming the current barriers and unlocking blockchain's full potential. As blockchain matures, it is expected to play an increasingly pivotal role in shaping the future of digital systems, promoting transparency, reducing inefficiencies, and ensuring greater trust in the digital economy.

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Consumer Buying Behaviour of Edible Oil Products– A Study of Virar City

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Abstract:
In India, edible oil is used to cook most culinary items. Consumer behavior frequently shifts as a result of new inventions, variations in taste, and preferences for particular foods. For this reason, edible oil is a crucial component of food products. Consumers' brand references for edible oil have been the main focus of this study. An attempt has been made by the researcher to comprehend the several elements that are considered when purchasing edible oil. The author has concentrated on the types of edible oil that customers desire. Additionally, the author has concentrated on consumer knowledge regarding edible oil's weight, contents, and expiration date.
Keywords: Edible Oil, Buying behaviour of consumers, Food items.

1. Introduction:

The Indian edible oil market is currently highly fragmented, with multiple edible oil manufacturers operating in both an organized and an unorganized sector. Increased income levels, changing lifestyles, food consumption patterns, health and wellness concerns, and the growing trend of referring to non-traditional oils like soya bean and rice bran are all contributing factors to the market's evolution. It is crucial to understand how consumers behave in various market contexts and to predict how they will actually behave in the future.

2. Objectives of the study:

The purpose of this study is as follows:

1. To Determine the brand preferences for edible oil.
2. To know consumer preferences for different types of edible oil.
3. To find out if consumers are aware of the ingredients, Net weight, expiration date, etc.
4. To ascertain the local preference for buying edible oil.

3. Statement of the problem:

In order to determine which brands are more popular and bought by consumers, research is being done on the topic of edible oil consumer buying behavior. This is because various brands of the same commodities, with a few extra features, are introduced into the market by the manufacturers of these products.

4. Need of the study:

In the present environment, a number of variables, including education, urbanization, and the growth of pharmaceutical facilities, are contributing to consumers' increased awareness and comprehension of edible oil. Thus, gathering consumer opinions about edible oil is crucial for gaining insightful knowledge about the planning, marketing, and implementation of sales campaigns. Gaining insight into consumers' brand choices and perceptions of edible oil brands on the market is also crucial.

5. Review of Literature:

1. Ambujakshi, (2016), has said that growing household incomes and consumer demand have caused a boom in the edible oil business at large. In this study, the consumer awareness of edible oil consumers in Bangalore is investigated, along with trends in edible oil preferences and the factors that influence those choices. The author draws the conclusion that the industry is moving toward a more structured and proactive integration process from the key players and that more edible oils must be produced domestically in order to keep up with the growing imports.

2. J. H. Vyas, I. N. Siddiqui and J. K. Dewagan, (2017), carried out a survey investigation, The writers emphasize the consumption patterns of families in order to comprehend the elements that affect customers' choices to buy edible oils. The writers also examine the inclinations of various demographic groups. The study's authors have determined that consumers' choice of edible oil brands is significantly influenced by health considerations. Additionally, they have pointed out that the majority of consumers switch edible oils for health-related reasons. The lack of significant customer loyalty has also been emphasized by the authors.

3. M. K. Narayan, M. Sarabhai And V. K. Khan, (2018), have investigated the Customers are increasingly selecting illicit oil brands, and the study identifies the elements that influence their choice to purchase subpar oil. The most significant factors influencing consumers' decisions to purchase edible oil are quality, brand perception, and health consciousness. According to the survey, consumers are drawn to sales promotions and offers, therefore instructors should design successful campaigns and promotions to draw in new clients and retain current ones.

6. Research Methodology:
The following survey methods form the basis of this empirical study: Using a carefully designed questionnaire, 100 households were given access to primary data. The chosen households were intended to come from a range of socioeconomic backgrounds. The convenience sampling technique and sample selection were applied. In the city of Tiruchirappalli, the survey was carried out. Books and research articles were used to get the necessary secondary data. The necessary articles were printed in reputable periodicals and journals. After being gathered, the basic data is analyzed, tabulated, and scrutinized. The basic percentage approach is employed in statistical analysis.

7. Significance of the study:
This study offers insightful information about edible oil consumer behavior in India that can be utilized to modify marketing tactics to satisfy consumer demands and expectations. To remain competitive in a market that is ever evolving, the results can be utilized to inform practical suggestions for enhancing marketing initiatives, product quality, and packaging. Manufacturers must ensure that their products are of the greatest quality and provide health benefits in order to draw in and retain customers as consumers' concerns about their health grow. Additionally, the report highlights areas that warrant more investigation, like examining regional variations in customer preferences, evaluating the efficacy of marketing tactics, and tracking market trends over time to offer a roadmap foranalysis and adjustments.

8. Limitations of the study:
1. Today, In Virarcity is regarded as a metropolitan city with a vast geographic region. The study's investigation is restricted to looking at edible oil users' usage patterns.
2. It is not possible to apply the study's findings to other Indian cities because they are restricted to the Virar region.

9. Analysis and Discussion:

Details	No. of Respondents (Frequency)	Percentage (%)
1. Gender		
Male	51	42.5
Female	69	57.5
Other	0	0
Total	**120**	**100**
2. Age		
< 25 years	28	23.33
25 to 30years	32	26.67
31 to 35 years	29	24.17
36 to 40 years	11	9.17
41 to 45years	10	8.33
> 45 years	05	4.17
Total	**120**	**100**
3. Month income range distribution of the selected households (Rs.)		
< Rs. 5000	10	8.33
Rs 5001- 10000	30	25
Rs 15001 -20000	45	37.5
Rs 20001- 25000	30	25
>25000	05	4.17
Total	**120**	**100**
4. Brand preference of consumers for edible oils available in the market.		
Fortune	22	18.33
Saffola	18	15
Sunrich	32	26.67
Gemini	28	23.33
Kirti Gold	12	10
Other Brands	08	6,67
Total	**120**	**100**
5. Household consumers' preferences for edible oil variants.		
Mustard oil	05	4.17
Coconut oil	22	18.33
Palm oil	11	9.17
Olive oil	18	15
Sunflower oil	22	18.33

Other variants of Edible oil	42	35
Total	**120**	**100**
6. Frequency of consuming edible oil.		
Almost everyday	89	74.17
3 - 4 times in a week	21	17.5
1 - 2 times a week	10	8.33
Total	**120**	**100**
7. Consumer's awareness about ingredients, net weight, expiry date, nutritional benefits etc.		
Yes		
No	113	94.17
	7	5.83
Total	**120**	**100**
8. Spot preference by households for buying edible oil.		
Supermarket	68	56.67
Retailers	22	18.33
Wholesalers	20	16.67
Directly buying from Oil Mill	10	8.33
Total	**120**	**100**

Interpretations:

1. In the gender category, females make up 57.5% of the total, which is more than males, who make up 42.5%, according to table no. 1 above.
2. According to table no. 2 above, age is classified as follows: under 25 years old is 23.33, 25 to 30 years old is 26.67, 31 to 35 years old is 24.17, 36 to 40 years old is 9.17, 41 to 45 years old is 8.33, and over 45 years old is 4.17.
3. s per the above table no.3, 4.17% of the households have a monthly income Rs.25,000, 25% have a monthly income above Rs.20,001 to 25000, 37.5% have a month more income between Rs.15,001 to 20,000, and 25% have a month income between Rs.5,001 to 10,000, only 8.33% of households have a month income less below Rs. 5000.
4. The preceding table no. 4, indicates the distribution of the households based on the oil brands they prefer. According to the preceding table, 15% of households prefer Saffola and 18.33% of homes prefer Fortune. Subsequently, 26.67% of households favorSunrich more than Gemini, 23.33% favor Kirti Gold, and 6.67% favor Other Brands less.
5. Rice bran edible, soy, mustard oil, sunflower, groundnut, coconut, palm, and other edible oil types are preferred by 35% of home consumers, according to table no. 5 above. Among household consumers, mustard oil is preferred by 4.17%, coconut oil by 18.33%, palm oil by 9.17%, olive oil by 15%, sunflower oil by 18.33%, and so on.

Edible oil is used everyday in almost 95% of households. Approximately 1% of home customers use edible oil once or twice a week, whereas 4% use it three to four times per week. 69% of the household respondents are aware of ingredients, wait times, expiration dates, nutritional advantages, etc., according to the above table. 31%, however, are not aware of these elements. Most household respondents (50%) said they would rather purchase edible oil from local merchants. Just 18% of the household respondents prefer to purchase edible oil directly from wholesalers close to their home, while 32% prefer to get edible oil from a mall or supermarket.

10. Finding of the study:

1. In the city of Virar, it is found that most of the families have a monthly income between Rs.20,000 and Rs.30,000, and 34% of the families have an income above Rs.30000. Hence, all these families prefer branded edible oils. The family whose monthly income is less than Rs.10,000 prefers cheap/unbranded/loose edible oil.
2. According to the data collected, there is no specific brand of edible oil that is preferred by the household consumers. In fact, the preferences of the household consumers are very similar to the brands Sundrop, Saffola, Gemini, Fortune, Kirtigold, etc.
3. Most of the household respondents know about sunflower oil and different types of the edible oil such as rice bran oil soy oil massad oil etc. Most of the household respondents do not consume coconut oil. Many households prefer groundnut oil although its price is high.
4. According to the household respondents, most of them consume edible oil on a daily basis; this is because evil oil plays an important role in food preparation in India.
5. The study highlights that the sample of older consumers are less interested in package edible oil. The sample of household consumers have a tendency to be less interested in understanding the factors such as ingredients, Net weight, nutritional benefits, expiration date etc.

6. According to the survey, most of the household consumers prefer to buy edible oil from retail stores near their homes. Some of them buy oil from malls or supermarkets.

11. Suggestions

a) The manufacturer needs to develop better marketing campaigns that will motivate the consumer to choose between the various brands of edible oil.
b) Manufacturers should also pay attention to the right packaging to attract the customers to their products.
c) Nowadays, every day more and more people are becoming more and more health conscious. As a result, the manufacturer has to put more emphasis on quality in order to attract more customers.

12. Scope for further research

This study provides important information about edible oil use in the Indian city of Virar. To assess regional variance in consumer preferences and purchasing behavior, it would be beneficial to take into account additional geographic areas for future research. A greater knowledge of the factors influencing edible oil preferences could be obtained, for instance, by contrasting large cities with small towns or rural areas. A more thorough investigation would also be possible by looking at regional and cultural preferences in relation to the usage of edible oil. The effectiveness of marketing tactics employed by producers of edible oils and their influence on consumer choice should also be investigated in more detail. A long-term study that monitors customer preferences over time may offer a dynamic perspective on the evolving trends of the edible oil market.

13. Conclusions:

Virar City, India's study on edible oil consumer attitudes yields a number of important conclusions. It emphasizes how income levels have a significant impact on brand preferences. Branded oils are typically preferred by wealthier households. Popular brands including Sundrop, Saffola, Geminian, Fortune, and Kirtigold are preferred even though no single brand controls the market. The survey also sheds light on consumer preferences for retail stores and their knowledge of oil types and daily use patterns. Suggestions: To satisfy the growing demands of health-conscious consumers, enhance marketing tactics, pay attention to packaging, and give top priority to product quality. Possible directions for additional study include: Greater geographic exploration Cultural factors made use of longitudinal analysis enhanced comprehension and monitoring of changing market conditions.

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The Decline of Teacher Respect in India: A Comparative Analysis Across Countries

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Abstract:
This research paper explores the declining respect for teachers in India as compare to other nations. In other nations where educators enjoy higher societal esteem. By analysing cultural, economic, political, and educational factors, this paper identifies key causes and suggests strategies to restore and help good respect for the teaching profession in India.

Keywords: - Teacher Respect, Global Comparison, Education Perception

Introduction: -
Education shapes the foundation of a society still teachers are increasingly undervalued in many regions of our county. With variations in teacher status, highlighting nations like Finland and Singapore where teachers are highly respected compared to India with declining recognition. This paper examines the reasons behind the diminishing respect for teachers in India and offers strategies to improve their societal perception. **High-Respect Nations like Finland gives r**igorous teacher training programs and competitive salaries. In S**ingapore, nation give more** emphasis on education and professional development. In India, it happened in Private schools which are made for very high-class parent's wards. We have challenges faced by teachers in countries with declining respect, due to overcrowded classrooms, Political interference in education, Poor working conditions and pay. In India, government need to analysis cultural values which influence teacher respect, such as collectivist virses individualist mindsets. There are much more reasons which gives demonitivation to the teachers: Low salaries compared to other professions, Lack of funding for educational infrastructure, diminishing parental support, increased focus on grades over holistic education, etc.

Review of Literature: -

1. The Varkey Foundation's "Key Data: Mapping Respect for Teachers Worldwide" (2020) explores societal attitudes toward educators across nations, revealing disparities in teacher status and respect.
2. "The Oxford Encyclopedia of Global Perspectives on Teacher Education" provides an extensive analysis of teacher education frameworks, emphasizing cultural and systemic factors shaping pedagogical practices.
3. UNESCO's "Global Report on Teachers: Addressing Teacher Shortages" (2023) highlights critical global challenges like teacher shortages, uneven distribution, and systemic barriers, proposing strategies for equitable solutions.

Research Methodology:-I have used secondary data and mixed-methods approach ensures a comprehensive understanding of the issue and practical, evidence-based recommendations.

Study policies, articles with higher teacher respect, identifying transferable strategies to enhance the profession's status in India. Also need to evaluate existing Indian policies affecting teacher status, identifying gaps and recommending reforms based on successful international practices.

Research Objectives: -

- To Analyze Contributing Factors like Investigate the cultural, economic, and political factors leading to the decline of teacher respect in India.
- To Compare the societal perception of teachers in India with nations where teachers are highly respected, such as Finland and Singapore.
- To Evaluate Impacts how diminishing respect for teachers affects educational quality, teacher morale, and student outcomes in India.
- To Propose Solutions to suggest actionable strategies for improving societal respect for the teaching profession in India.

Importance of Study: -

•**Extensive Understanding of Declining Respect**:

This is important to analyz cultural, economic, and political factors provides a holistic view of the systemic and societal challenges causing the decline in teacher respect. This depth is crucial for identifying root causes and ensuring the research is well-informed and impactful.

•**Measure the Best Practices**:

By measuring the best practices in Indian situation with other countries like Finland and Singapore, the research gains a global perspective. This benchmarking highlights successful strategies and policies that can be adapted to the Indian context.

•**Actionable Solutions for Societal Change**:

The focus on proposing solutions ensures that the research moves beyond problem identification to contribute meaningfully to policy discourse and societal reform. This increases the paper's utility for stakeholders such as educators, policymakers, and researchers.

Limitation of Study:-

•**Data Availability and Reliability**:

Accessing comprehensive and up-to-date data on societal attitudes towards teachers in India and globally may be challenging.

•**Subjectivity of Perceptions**:

Respect for teachers is inherently subjective and influenced by personal experiences, making it difficult to quantify accurately. Survey responses may reflect biases or limited perspectives.

•**Comparative Challenges**:

Differences in political, economic, and educational contexts between India and nations like Finland and Singapore may make direct comparisons difficult. Strategies successful in other countries might not fully align with India's unique socio-political landscape.

•**Focus on Specific Factors**:

While the study emphasizes cultural, economic, and political factors, it might overlook other influential aspects, such as technological advancements or global shifts in education paradigms, which also impact teacher respect.

•**Time Constraints**:

Respect for teachers evolves over time, and the study may not fully capture long-term trends or rapidly changing societal attitudes, especially post-pandemic.

Conclusion: -

The decline in respect for teachers in India poses a significant challenge to the nation's educational and social fabric. By examining the cultural, economic, and structural factors influencing this trend, this research highlights critical areas for reform. Learning from nations like Finland and Singapore, India must prioritize teacher training, improve working conditions, and foster a societal mindset that values education and educators. Restoring respect for teachers is not just about improving their status but also about enhancing the overall quality of education, thereby shaping a stronger, more equitable society.

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"Key Data: Mapping Respect for Teachers Worldwide" by the Varkey Foundation 22 June 2020

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The Role of Sugar Factories in Rural Development of Ahilynagar District

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ABSTRACT:
Rural Development is an improvement in the economic as well as social well-being of a specific group of people i.e. the rural poor and agriculture. The Indian sugar factories are key driver of rural development. The sugar Industries being agro-based processing units, which are located near the supply of raw material namely sugarcane. These industrial units get located mainly in the rural areas. With the location of these processing units in the rural areas it is visualized that these factories can be the most appropriate agents for bringing about rural industrialization and change. The agro-based sugar factories with active Government aid and encouragement led to industrial dispersal in the state like Maharashtra. Along with dispersal of industrialization these factories due to their linkage effects became the growth centers for rural development and change in Maharashtra.
The growth of numerous urban areas has helped to mitigate the problem of unemployment by creating job possibilities in expanding sectors and businesses. Ahilynagar is a district located in an area prone to drought but is benefited from the Pravara River's presence in the major part of the district. The existence of sugar industries has become essential to the region's growth and job opportunities. In order to demonstrate the true function of cooperative sugar industries in Ahilyanagr district, this study uses both primary and secondary data, providing insightful information for researchers, agricultural scientists, and planners. Terms like "agricultural family," "economic activities," "health camps," "beautification," and "social responsibility" highlight the various ways in which these factories affect the surrounding communities.

Any rational scheme of economic development aiming at improving the living standards of people, agriculture development should be the starting point. The concept of Rural Development has become a very popular term among planners and policy makers.

INTRODUCTION:
Development of the co-operative sugar factory would throw up ‘local leaders’ in whom the local farmers would have faith and confidence, hence these ‘local leaders’ would be able to mobilize the needed rural support and share capital contribution from the farmers. Once the factory developed under local leadership it was more possible that ‘Area development schemes’ would be implemented as the local sugar factory leaders would have a natural commitment for area development. Establishment of the sugar factories in the co-operative sector would also help the farmers themselves to manage the affairs of the factory and take important decisions regarding diversification, area development and schemes etc. Hence the farmer members’ participation in the working of the sugar factory would be of a high standard. Through the creation of an area development fund schemes benefit the farmers could be undertakes. Hence the Government both at the centre and state encouraged co-operative sugar factories. In addition, in the process of growth of a sugar co-operative there would be diversification of productive activities. Ahmednagar district holds the honor of having the highest number of sugar factories in Maharashtra. The cooperative movement related to the sugar industry initiated in the 1960s in Maharashtra with the declaration of twelve places in the state where sugar factories could be started. The then Bombay state government declared a share capital of Rs. One Million for establishing sugar factories at these potential twelve places. Under the chairmanship of economist Dhananjayrao Gadgil a central committee was formed by the Bombay State Cooperative Bank. VithalraoVikhe Patil, & Gadgil established Asia's first cooperative sugar factory at Pravaranagar in the Ahmednagar District of the then Bombay state in 1950. The sugar mill, established under the name of Pravara SahakariSakharKarkhana Ltd, had the majority ownership by the local farmers.

KEYWORDS:
Rural Development, Sugar Factories, Ahilynagar District, Government Policy.

OBJECTIVE:
- ✓ A study of industrial development in rural area.
- ✓ To analyses the growth of sugar industry at global market.
- ✓ A study of modern technology used by sugar factory.
- ✓ A study of sugarcane development & research
- ✓ Analysis of By-Products from sugar factories.

SOURCE OF DATA:

The study is mainly based on primary as well as secondary data through observations, survey, various journals, magazines, Books and Newspaper etc.

The Officesofvarioussugar industries and the yearly reports of sugar industries are good sources of secondary data. A range of statistical and cartographic methodologies are utilized to examine the gathered information

SCOPE OF THE STUDY:

The present study mainly focuses on the growth and productivity of sugar industries. In India the growth of the sugar industry plays an important role in achieving its productivity among the world the study is based on production information.

NEED OF THE STUDY:

CONTRIBUTION OF SUGAR INDUSTRY AT RURAL DEVELOPMENT:

- Sugar co-operative for their expansion gave importance to better sugarcane production, supply of appropriate agricultural inputs to farmers and increased irrigation facilities in their area of operation.
- In additions growth of educational facilities, medical facilities, etc. were also undertaken as a part of area development by these co-operatives to growth of ancillary units, like paper plants, distillery units etc. which in turn increased employment and led to further industrial development in the rural areas.
- The success of sugar co-operatives in their commitment to area development led to growth of other agro-based processing units like dairy co-operatives, spinning mills, fruit processing units and such agro based industrialization helped in the development of agriculture and brought about the necessary transformation of the rural areas and in the process the benefits of these activities reached the farmers and they too benefited and progressed.
- The sugar factories help to get loans through credit society to the farmers for the lift irrigation.
- A majority of the shareholders of the sugar factory hold 1-3 hectares of land and many of them grow sugarcane on lift irrigation. The factories have also been providing the facility of boring units. It has resulted in increase in area under sugarcane cultivation. Some Co-operative Sugar Factories have sponsored the lift irrigation schemes with a view to increase the land under sugarcane and to fulfill the needs of basic raw material, i.e. sugarcane within the command area.
- The provision of credit facility, improved varieties of seeds, fertilizers, etc. given by the sugar factories to the farmers.
- Supply of Good Quality Sugarcane Seeds.
- After the establishment of the sugar factories in the district the proportion of the users of pesticides and insecticides has increased. Factories give the subsidy on large scale for the pesticides and insecticides.
- The factories give the subsidy to the shareholders on the price of new variety of the sugarcane. Pilot scheme was undertaken for the introduction of improved seeds of sugarcane and the factories have appointed special experts.

FINDING AND DISCUSSION:

The establishment of a sugar industry in a rural region opens up possibilities for a range of ancillarybusinesses that help the localfarmersand other ruralresidents. A variety of different commercial endeavors, including banks, bio-digester gas plants, irrigation projects, poultry farms, and enhanced cow breeding programs, are arranged on the basis of the sugar industry. The economic circumstances of landless laborers, other locals, and farmers are all greatly improved by these measures. In addition, the sugar industry starts the construction of educational institutions, medical facilities (including hospitals and dispensaries), and venues for sporting and cultural events. A large percentage of the resources of many sugar industries are directed towardimproving the quality of lifefor the local populace, thus giving their presence greater significance. Thus, the growth of rural industrialization is aided by the diversification of production activities and thus creates job opportunities.

LIFT SYSTEMS FOR IRRIGATION:

In order to increase sugarcane cultivation and meet the demand for its main raw material, sugarcane, within the command area, most of the sugar industries in Ahilyanagar district have started lift system for irrigation. The sugar industry, which also offers bank guarantees to secure loans for irrigation projects in the region, has enthusiastically supported the establishment of these lift irrigation schemes.

DEVELOPMENT OF SUGARCANE AS ECONOMICAL SUPPORT SYSTEM: The Ahilyanagar division in Maharashtra has started crushing operations earlier this season than any other division, with 24 sugar mills—the most of any region. According to information provided by the Sugar Commissioner ate, the Ahilyanagar division processed 57.87 lakh tons of sugarcane up until December 11, 2024, producing 44.04 lakh quintals of sugar and attaining a 7.61 percent sugar recovery rate. http://www.mahaagri.gov.in/rainfall/index.asp is the source.

To increase sugarcane production, the sugar industries offer farmers a number of programs.

CONCLUSION:

Various schemes have adopted by sugar factory for the surrounding rural area development. In which Agriculture exhibition, Computer Training to employee, Cattle Camp, Felicitation of Meritorious students, Response to emergencies, Supply of Molasses, supply of good quality sugarcane seed, Labor Welfare programs etc. are included. Recently cogeneration of power and distillery project is started in this factory which can give large profit and create more employment opportunity.

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Enhancing Consumer Awareness and Interest Towards Electric Bikes Through Digital Marketing

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Abstract
Digital marketing tactics are constantly changing to satisfy the informative and persuasive needs of potential customers in an effort to sell eco-friendly items like electric bicycles. The purpose of this study is to look into how using digital content affects consumers' growing interest in and awareness of electric bicycles. A literature review, which looks for similar literature, is the research approach used. The results show that generating consumer interest and increasing brand awareness are significantly aided by imaginative, instructive, and interactive visual content. A multi-platform approach that makes use of blogs, email marketing, and social media has shown promise in expanding the target audience. Furthermore, influencer marketing, customised content, and interactive brand-consumer communication can increase engagement and conversion rates. This study offers strategic advice for actors in the electric bicycle business, perspectives on current standards in digital marketing for environmentally friendly goods, and ideas for further research on the dynamics of digital marketing.

Keywords - Consumer Awareness, Interest, Digital marketing, Electric bicycles, Environmental, Sustainability, Industry.

1. Introduction
Digital marketing is becoming one of the main ways that businesses reach their customers thanks to recent technology developments. As information technology has advanced, digital material has become increasingly important in influencing the decisions that consumers make about what to buy. The use of digital technologies as a marketing strategy has become a crucial component in the promotion of goods and services. Many big and small businesses use social media, websites, and mobile applications to promote their products and services. This allows brands to communicate and individually reach a wider audience (Setiawan, &Fadhilah, 2023). Additionally, digital technology offers marketers fresh and creative venues to more effectively and efficiently link their products with customers. The electric bicycle industry is one of the industries that is starting to feel the effects of the digital revolution (Kiki &Hanifi, 2022).

According to Purwanto et al. (2023), the electric bicycle industry is an example of a transportation technology advancement that combines the advancement of electric technology with human needs for environmentally friendly and sustainable modes of transportation, such as pollution, the need for a healthy lifestyle, and the rising costs of fossil fuels. A little electric motor, often driven by rechargeable batteries, gives the wheels a kick when riding an electric bicycle. The electric bicycle market encompasses a variety of bicycles, such as city bikes, mountain bikes, and foldable bikes, because this motor facilitates travel, particularly on uphill roads (Haryanto et al., 2021).

The use of electric bicycles and a move towards digital marketing highlight a larger trend in consumer goods for sustainability and technological integration. In addition to meeting the growing need for environmentally friendly transportation options, businesses using digital platforms to advertise electric bicycles also satisfy customer demands for ease and digital interaction. The changing nature of consumer engagement and the significance of digital proficiency in reaching and influencing target audiences are reflected in the emphasis on digital content, personalised marketing strategies, and the use of cutting-edge technologies in marketing practices (Stilo et al., 2021).

Promoting this environmentally friendly vehicle is becoming more and more popular as a way to combat climate change, thus it needs strong marketing to draw in customers. In order to bridge the gap between these technological advancements and new business prospects, digital content is crucial (Llopis-Albert et al., 2021). Utilising these advancements, the electric bike industry has employed a range of digital marketing strategies, including social media

campaigns, SEO, and content marketing, to draw in customers and cultivate relationships with potential buyers (Saputra&Riyanto, 2020).
Although they are regarded as one of the environmentally benign modes of transportation, electric bikes face the difficulty of increasing customer interest and awareness. Electric bikes are still not widely used, despite their many benefits, including energy efficiency and a reduction in air pollution (Siregar et al., 2023). This is a result of consumers not being aware of or comprehending the advantages of electric bikes. Electric bikes have become a popular greener mode of transportation, providing ways to cut down on air pollution and carbon emissions. Electric bicycles are one of the potential eco-friendly solutions that have the ability to significantly lower urban air pollution and carbon footprints. Their presence is also an attempt to strike a balance between environmental preservation and development. Global warming, air pollution, and declining quality of life are examples of environmental problems that call for creative and long-term solutions (Salmeron-Manzano & Manzano-Agugliaro, 2018).
On the contrary side, electric bikes provide transportation options that are not merely energy-efficient but also successful in lowering greenhouse gas emissions by fusing human physical prowess with electric energy efficiency. In keeping with the UN's sustainable development goals, the usage of electric bikes as a substitute for urban transportation aids international efforts to shift to a low-carbon economy (Hung & Lim, 2020).
Given all of the advantages of electric bikes, it is imperative that they be used as ecologically responsible alternatives. First off, using electric bikes can greatly lower air pollution because they don't emit exhaust gases like traditional motor vehicles do. Second, commuting in traffic can be facilitated with electric bikes. Compared to electric cars, electric bikes occupy a significantly smaller amount of space, enabling quicker and more effective travel on congested city streets. Third, compared to fossil fuel cars, electric bicycles are a more environmentally friendly option. One strategy to foresee a growing energy deficit is to exploit it (Kwiatkowski et al., 2021). Lastly, even if using electric bikes has certain drawbacks, such safety concerns, upfront expenses, and the need for charging infrastructure, the potential long-term advantages for the environment as well as urban populations cannot be overlooked.
In this situation, digital marketing is used as a platform to inform and illuminate the public about the benefits of electric bikes over traditional cars in addition to being a tool for promotion. But even with all of its promise, there are still a lot of barriers to the widespread use of electric bikes, including as low customer interest and knowledge (Murti et al., 2023). As a result, studies on how digital marketing may increase consumer awareness and interest in e-bikes are now quite pertinent. In order to teach the public about the advantages of electric bikes and promote their broader adoption, digital marketing may be extremely helpful due to its exceptional capacity to reach a large audience and offer pertinent and engaging content (Yang et al., 2021).Therefore, this study investigates consumer interest and knowledge of electric bikes, a product that ought to be properly positioned while comprehending by consumers while taking into account issues and barriers like cost, security, and the accessibility of infrastructure for recharging.

2. Research Methods
One of the research methodologies that uses textual sources or library resources as primary data is the literary research technique. Findings from earlier research that are pertinent to the subject of the study are gathered, reviewed, and analysed using this methodology. Using literary research techniques in the study of "Enhancing Consumer Awareness and Interest in Electric Bikes Through Digital Marketing," the following may be said: 1) Choosing literary sources in accordance with the study contexts, 2) doing an online literary search utilising keyword, and 3) assessing the literature gathered (Earley, 2014). By critically analysing earlier study, literary research approaches help scholars get a deeper grasp of their subjects. This approach can provide light on consumer behaviour, successful tactics, and variables influencing interest and awareness in electric bikes in the framework of digital marketing for these vehicles.

3. Result and Discussion
a) Digital marketing theory
Digital marketing is a marketing approach that leverages the Internet and technology to advertise a product or service while accounting for regional customer preferences and current market trends. The term "digital marketing" refers to a wide range of ideas, tactics, and procedures used to advertise goods and services online. According to Wahyudi et al. (2022) and Afianti et al. (2023), it is a development of conventional marketing that adjusts to the demands and habits of customers in the digital era. A theoretical comprehension of and plan for marketing objectives using a variety of digital platforms is known as digital marketing. In the current digital era, marketing is no longer restricted to traditional media such as print, radio, and television; instead, it employs digital media to generate leads, build brand recognition, and turn leads into sales. utilising social media and well-known Indonesian websites like

Facebook, YouTube, and Instagram to raise awareness of supplied goods and services (Chaffey & Ellis-Chadwick, 2019). Businesses may effectively sell their goods and services in the Indonesian market by using digital marketing techniques that cater to regional tastes.

Digital marketing is nearly synonymous with traditional marketing, which is the process of accomplishing company objectives by anticipating, understanding, and meeting client wants. The channel that connects a product or service to a customer is what makes it unique (Kannan, 2017).

In addition to using digital technology to achieve marketing objectives, digital marketing also entails creating or modifying marketing concepts. Global communication, two-way consumer-business contact, and message personalisation are all made possible by digital marketing. Understanding customer behaviour in the digital sphere, choosing the right medium, and distributing content quickly are all examples of effective digital marketing tactics. The first of the strategy's four primary facets is comprehending and being aware of the target audience. Knowing and identifying the target audience is crucial. It comprises information on the tastes, purchasing patterns, and behaviour of consumers. To better understand their audiences, businesses can employ a variety of market research techniques, including focus groups, interviews, and internet surveys. Second, producing high-quality material. The mainstay of digital marketing is producing excellent content that appeals to the target audience. Blog entries, infographics, videos, social media postings, email newsletters, and more can all be considered content. In addition to promoting the business's goods and services, the goal is to draw in and keep the audience interested. Search Engine Optimisation (SEO) comes in third. Search engine optimisation (SEO) is the next digital marketing tactic. The goal of SEO is to make websites more visible in search results so that natural searchers may find them. This covers link development, using pertinent keywords, and making sure search engines index webpages. Social media marketing comes in fourth. Social media is an effective way to connect with and interact with your audience. Strategies for social media marketing might range from naturally occurring posts to targeted advertising initiatives. Fifth, reporting and analytics. Digital marketing methods heavily rely on marketing analysis. Tools for marketing analysis can offer insightful information on how consumers engage with a company's content, goods, or services. Businesses may increase their productivity and make data-driven decisions with its assistance (Kingsnorth, 2022). Businesses may develop successful digital marketing strategies that increase their reach and accelerate their growth by integrating all of these factors.

b) Digital marketing scope

Digital marketing encompasses a broad variety of operational and strategic elements that are utilised to advertise goods and services via digital platforms (Kim et al., 2021). information is only one aspect of digital marketing, but it is a crucial one, involving the production and dissemination of worthwhile and pertinent information to draw in and hold on to an audience. 2) Ads on Google. Google advertisements' pay-per-view campaigns enable businesses to more effectively reach their target audiences through display advertisements and sponsored searches on the Google network. 3) Social media. Brands can engage with their audience, increase brand recognition, and boost conversions by putting marketing tactics into practice on social media platforms. 4) Search Engine Optimisation and Search Engine Marketing, or SEO and SEM. SEM comprises sponsored elements like PPC (Pay-per-Click) to draw visitors, whereas SEO helps improve a website's organic search engine presence. 5) Email advertising. Email correspondence is a powerful tool for engaging with clients, informing them about goods and services, and inviting them to exclusive events or deals. 6) Offline Digital Marketing. This includes advertising on digital platforms that don't require an Internet connection, such digital TV, digital billboards, and digital radio adverts (Bala& Verma, 2018).The breadth of digital marketing demonstrates a comprehensive strategy that considers offline and online tactics when developing and implementing marketing initiatives. The breadth of digital marketing keeps growing as a result of consumer behaviour changes and technical advancements, allowing firms to engage with their consumers in more inventive and creative ways.

c) **Consumer behavior in digital marketing**

Consumer behaviour in digital marketing refers to the choices, activities, and attitudes of consumers as they use digital platforms like social media, websites, and apps. Preferences, habits, and environmental influences are only a few of the variables that affect consumer behaviour. A thorough grasp of customer behaviour can assist marketers in creating more successful digital marketing strategies (Az-Zahra, 2021).

In the context of digital marketing, consumer behaviour describes how people look for, assess, choose, and utilise goods and services via digital platforms. Numerous things, from individual tastes to the newest societal and technical developments, have an impact on it. Psychological elements, including perceptions of product value, requirements, and customer motivation, can also have an impact on consumer behaviour. Marketers may improve outcomes by optimising promotions, content tactics, and customer experience personalisation by being aware of these elements. Understanding local customer behaviour, language preferences in digital interactions, and new consumer trends are crucial when it comes to digital marketing in Indonesia. As a result, marketers may modify their approach to make it more appealing and relevant to the Indonesian market.

The first important factor influencing consumer behaviour in digital marketing is information accessibility. Through the internet, consumers may access a limitless amount of information. They frequently look up product details, pricing, and reviews online before making a purchase. Second, trust in the brand. Customers frequently like brands that are well-known for their great quality and reputation. Authentic content and engaging digital marketing may increase brand trust. A better user experience comes in third. Websites and applications that offer a dynamic user experience and an easy-to-use interface are more likely to draw in customers. Fourth, customisation. Based on their prior behavioural information and preferences, consumers often react well to tailored advice and targeted advertising. Fifth, amenities and advantages. Online purchase selections can be influenced by elements like free delivery, a simple return policy, and excellent customer support. Impact of Social Media, sixth. Influencer recommendations, user reviews, and forum conversations may all affect the choices that consumers make. Fear of Missing Out (FOMO) comes in at number seven. Flash sales and limited-time bidding are examples of marketing techniques that can generate a sense of urgency that prompts prompt purchases. 8. Platforms and Devices. Customers' interactions with digital information are also influenced by the platforms and devices they use, such as social media, email, and search engines, as well as devices like smartphones, tablets, and PCs. Consumer psychology comes in at number nine. Emotion, perception, and motivation are psychological factors that significantly influence how customers engage with companies and make decisions about what to buy. Consumer Life Cycle is number ten. The stages of a consumer's life, such as being a student, newlywed, or retired, might influence the kind of digital media and product they use. Developments in Technology, Eleventh. Brands may engage with customers in new ways and influence their behaviour with the help of emerging technologies like AI, VR, and AR (Guan, 2023; Hidayat et al., 2022). To develop ads that connect with their target audience and increase conversions, marketers need to be aware of these elements. To be relevant and successful, they must also continuously assess trends and adjust to shifting customer behaviour.

d) **Consumer decision-making process**

The actions a person takes before to, during, and following the purchase of a good or service are known as the consumer decision-making process. Knowing how consumers make decisions is essential in the business sector. Businesses may use this knowledge to comprehend customer behaviour and pinpoint the elements that affect decisions to buy. Problem identification, information search, alternative appraisal, purchase decisions, and post-purchase behaviour are some of the steps that may be included in the consumer decision-making process (Kamkankaew et al, 2022)

Businesses may create more successful marketing strategies by having a better grasp of how consumers make decisions. Businesses may better target their marketing efforts by knowing what factors customers take into account when purchasing a good or service. Additionally, a thorough grasp of how consumers make decisions may assist the business in creating new goods or services that better meet market demands. The business may deliver more pertinent innovations and market demand if it is aware of customer preferences.

There are five primary steps in the decision-making process (Kotler et al., 2013); 1) Determining needs. When the customer recognises a need or wants that has to be satisfied, this process starts. Numerous things, like as advertisements, the launch of new goods, or adjustments in one's circumstances, might cause it. 2) Information gathering. Customers will look for information to choose the best product or service once they recognise a need or desire. This procedure may involve reading reviews, requesting recommendations from friends or relatives, conducting internet research, etc. 3) Alternative assessment. Customers will next assess the different goods and services on the market using the information they have discovered. This entails contrasting elements including cost, features, quality, brand reputation, and other evaluations. 4) The choice to buy. Consumers make their ultimate decision and buy something after weighing all of their possibilities. 5) After the transaction. Customers will assess their degree of satisfaction after buying and utilising a good or service. Future brand loyalty and repeat business may result if the goods or services live up to or beyond customer expectations. Keep in mind that during this procedure, customers may always go back to the earlier stage. For instance, after attempting to make a purchasing choice, individuals might return to the information-gathering or alternative evaluation stage.

e) **The influence of social media and online content**

Social media and online material have grown into essential components of most people's everyday lives in the increasingly sophisticated and changing digital age. Online content and social media provide innovative means of communication, interaction, knowledge sharing, and enjoyment. Social media and online content-from YouTube and blogs to Facebook, Instagram, Twitter, and LinkedIn-have altered how people engage with their surroundings. But the effects aren't always favourable. Social media and online material have negative impacts that can impact users on an individual and societal level, much like the two sides of a coin (Ahmad &Rosli, 2023).

When used constructively, social media and online content give consumers access to a wide range of knowledge and offer forums for debate, opinion exchange, and global interaction. Additionally, they improve interpersonal connections, promote communication and teamwork, and provide chances for education and personal growth. On the other hand, when used negatively, social media and internet material may lead to false information, hoaxes, cyberbullying, and privacy concerns. Additionally, some research indicates that using social media increases the likelihood of mental health issues like stress, anxiety, and depression.

Social media and online material are dual in nature, which emphasises how crucial it is to use them sensibly. Users should be aware of their digital well-being, exercise caution when using the internet, and critically evaluate the material they come across. In the meanwhile, in order to create a healthy online environment for all users, platforms and legislators are urged to maximise the beneficial features of these digital spaces while reducing the bad effects. All things considered, a thorough grasp of the impact of social media and online material, as well as the safest and most efficient ways to use these technologies, is essential. Digital education and awareness are used to accomplish this goal for both individual users and institutions and organisations who employ social media and online material as part of their operations.

Social media and internet content have a number of important effects, both good and bad. Among the advantages are: 1) Global connectivity. People may connect with friends, family, and communities through social media without being restricted by geography. This makes it possible for more cultures and ideas to be shared. 2) Information Access. Online content improves people's knowledge and abilities by giving them unrestricted access to information on a variety of subjects, from the most recent news to instructional courses. 3) Commercial Prospects. Businesses now use social media as a vital marketing tool to expand their customer base, increase brand recognition, and drive sales. 4) Social Support. Social media has given rise to a large number of online groups that provide people with similar interests or conditions with emotional support, inspiration, and guidance. Nevertheless, drawbacks include: 1) Privacy Concerns. When people use social media carelessly, they run the danger of inadvertently disclosing personal information to the public or other parties. 2) False information. Via social media, fake or misleading information may spread quickly, leading to misunderstandings and societal problems. 3) Substance abuse. Overuse of social media may cause addiction, interfere with work, and have a detrimental effect on mental health, including anxiety and sadness. 4) Comparing socially. Online information frequently only highlights the positive parts of a person's life, which causes other users to feel inadequate and compare themselves to others (Akram& Kumar, 2017).

As a result, how people use and react to social media and online material greatly influences its impact. Despite their many advantages, users must be mindful of the hazards and take precautions to use them sensibly and healthily. This entails setting time limits, making prudent use of privacy settings, and confirming the veracity of material before disseminating it.

4. **Conclusion**

Digital content has been successfully used in electric bike marketing tactics to increase consumer interest and awareness. A range of digital channels, such as social media, blogs, videos, and interactive material, may be used in marketing efforts to engage potential customers directly and personally. In addition to raising consumer knowledge and interest, the strategic use of digital material in electric bike marketing fosters open communication, transparency, and enduring connections between companies and customers. Combining high-quality content, multi-platform tactics, personalisation, and instructional methods is essential to successfully using digital marketing's potential to propel the electric bicycle market's expansion.

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Enhancing Student Attendance in Mumbai University: Implementing a Centralized Biometric System for Improved Educational Quality

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Abstract

Mumbai University has been facing a significant decline in student attendance, which has raised concerns about the quality of education being delivered. Attendance plays a crucial role in ensuring that students actively participate in learning, engage with faculty, and gain the necessary knowledge and skills required for their academic and professional growth. However, the existing system, where individual colleges manage attendance records, has led to inconsistencies, errors, and, in some cases, manipulation of data. These challenges have made it difficult for Mumbai University to enforce attendance policies effectively.

This paper proposes the implementation of a centralized biometric attendance system that will be directly controlled by Mumbai University. Under this system, biometric devices such as fingerprint scanners or facial recognition technology will be installed across all affiliated colleges. Students will be required to mark their attendance through these devices, ensuring accuracy and eliminating the possibility of proxy attendance. The attendance data will be transmitted in real-time to a central database managed by the university, which will help in standardizing attendance records and preventing discrepancies.

Additionally, students will be categorized based on their attendance percentage, which will be reflected in their academic transcripts. This categorization will help employers and educational institutions understand a student's level of academic engagement. The proposed system will not only improve the reliability of attendance tracking but also enhance the overall educational experience by ensuring that students attend classes regularly and actively participate in the learning process.

The paper further discusses the implementation strategy, necessary infrastructure, and policy measures required to make this system successful. By adopting a centralized biometric attendance system, Mumbai University can improve compliance with attendance policies, strengthen academic discipline, and maintain the credibility of its degrees. The initiative will create a transparent and accountable attendance system that benefits students, faculty, and the university administration alike.

1. Introduction

Student attendance plays a pivotal role in shaping academic performance and overall educational quality. Regular attendance not only helps students keep up with coursework but also fosters active participation, promotes better understanding, and enhances academic success. However, in recent years, Mumbai University has faced significant challenges in maintaining consistent student attendance. Reports from various colleges within the university indicate a growing trend of student absenteeism, with many failing to meet the mandatory 75% attendance requirement. This poses serious concerns, as it directly affects students' eligibility for examinations, hindering their academic progression. Moreover, the issue has been compounded by legal actions, such as Public Interest Litigations (PILs), which have exposed widespread violations of attendance norms. These challenges have led to an erosion of the educational credibility of the institution, affecting its reputation and the quality of education it delivers.

Currently, the management of student attendance is largely decentralized, with individual colleges overseeing attendance records independently. While this approach may offer flexibility, it has led to inconsistencies in attendance tracking, discrepancies in reporting, and potential manipulation of attendance records. These issues make it difficult to ensure transparency and accountability in the system, further exacerbating the problem of absenteeism. This decentralization also limits the ability of the university to have a unified, comprehensive view of attendance trends, making it challenging to identify and address systemic issues.

To address these challenges, this research paper proposes the implementation of a centralized biometric attendance system under the direct control of Mumbai University. This system would allow for real-time, accurate, and tamper-proof tracking of student attendance across all colleges under the university's jurisdiction. By centralizing attendance management, the university would not only ensure better compliance with attendance norms but also create a more transparent and accountable system. This, in turn, would contribute to improved academic outcomes and restore the credibility of the university's educational framework.

In addition to improving attendance tracking, the adoption of a centralized biometric system aligns with broader educational reforms outlined in the National Education Policy (NEP) 2020. The NEP emphasizes the need for technology integration in education to foster personalized learning, improve administrative efficiency, and ensure quality education. A biometric attendance system, as proposed in this research, would directly support the NEP's vision by leveraging technology to enhance operational transparency, reduce administrative burdens, and ensure that students remain engaged and committed to their studies.

Furthermore, the NEP advocates for the development of a robust and accessible educational system, where data-driven decision-making becomes the norm. By implementing a centralized biometric system, Mumbai University can create a centralized data repository that not only tracks attendance but also provides insights into student engagement and performance patterns. This would enable timely interventions, personalized support, and a more proactive approach to addressing issues such as student absenteeism.

In line with NEP's emphasis on accountability and quality assurance, the biometric system would create

2. The Problem: Declining Attendance and Its Implications

The decline in student attendance at Mumbai University has far-reaching implications that affect not only individual students but also the quality and credibility of the institution as a whole. Below are the key negative effects of this declining attendance:

1. **AcademicPerformance:**
   Regular attendance is directly linked to academic success. When students miss classes, they miss out on crucial lectures, discussions, and the opportunity to engage in interactive learning. This leads to knowledge gaps that accumulate over time, making it difficult for students to catch up with their coursework. Missing assignments, group work, or even important exams due to insufficient attendance can also directly impact their grades. Furthermore, absenteeism often leads to a lack of discipline and study habits, which are critical for long-term academic performance. In essence, students who are not present in class frequently struggle to understand the subject matter, falling behind their peers and possibly leading to lower overall performance in exams.
2. **Quality of Education:**
   When students do not regularly attend classes, it negatively impacts the teaching environment. Low attendance can demotivate faculty, as instructors often feel that their efforts to deliver engaging, informative lessons are not being met with a receptive audience. This, in turn, can lead to a decrease in teaching quality, as faculty might reduce their efforts, knowing that a large portion of the class will not benefit from their lessons. Moreover, when there are fewer students in attendance, the continuity of learning is disrupted, and the collaborative learning experience, which is an essential component of education, is lost. As a result, the entire classroom dynamic suffers, and the overall quality of education deteriorates.
3. **DegreeCredibility:**
   Employers and academic institutions often differentiate between regular and correspondence degrees based on student attendance and participation. Degrees earned through regular attendance in classes are often perceived as more credible and rigorous compared to those earned through distance learning or minimal attendance. In industries where practical knowledge and hands-on learning are crucial, employers may question the authenticity and comprehensiveness of the education of students who had irregular attendance. The lack of engagement and personal development that comes from consistent attendance can lead to graduates who are less prepared for the workforce, diminishing the overall value of their degree. Therefore, absenteeism not only affects the student's learning experience but also their long-term career prospects, as the perceived credibility of their degree may be questioned.
4. **PolicyEnforcement:**
   Despite the university's regulations mandating 75% attendance, the enforcement of this policy remains weak and inconsistent. Various factors, such as a lack of a centralized system for monitoring attendance, limited oversight, and a decentralized approach to attendance management, contribute to this issue. As a result, students are often able to bypass these rules, either by manipulating attendance records or through lenient enforcement by faculty and administration. The lack of a strong enforcement mechanism means that the attendance requirement is not always taken seriously, contributing to higher absenteeism rates. This not only undermines the university's authority in maintaining academic discipline but also diminishes the overall academic rigor of the institution. Without a robust attendance tracking system, the policy itself becomes ineffective, and students remain unaccountable for their absenteeism.

3. Proposed Solution: Centralized Biometric Attendance System

In response to the challenges caused by declining student attendance and its negative implications, this paper proposes the implementation of a Centralized Biometric Attendance System to streamline attendance tracking, improve compliance, and enhance the overall educational quality at Mumbai University. The key components of this solution are outlined below:

1. **BiometricIntegration:**
   The first step in implementing a centralized biometric attendance system involves installing biometric devices (such as fingerprint scanners or facial recognition technology) in all affiliated colleges under

Mumbai University. These devices would be used by students to mark their attendance at the beginning of each class session. Unlike traditional methods of attendance tracking (e.g., paper-based roll calls or manual entry), biometric systems offer a higher level of security and accuracy. By using unique biometric identifiers (fingerprints or facial features), the system ensures that attendance is recorded by the actual student, preventing proxy attendance (where a student marks the attendance of an absent peer). This would eliminate a common issue where students manipulate attendance records, either by proxy or through human error. Additionally, the biometric system would operate efficiently, taking only a few seconds per student to register attendance, ensuring minimal disruption to the learning process. The biometric data would also be encrypted and stored securely to maintain privacy and prevent misuse.

2. **Centralized Data Management:**
Once attendance is recorded using the biometric system, the data would be transmitted in real-time to a central database managed and overseen by Mumbai University. This centralized approach would eliminate inconsistencies that arise from the current decentralized method, where individual colleges independently track attendance. By storing attendance data centrally, the university can monitor and review attendance trends across all affiliated colleges, ensuring that attendance policies are enforced consistently. The central database would also allow for real-time access to attendance records, enabling both students and administrators to check attendance records and address issues proactively. Additionally, by having a centralized system, the risk of manipulation or falsification of records is minimized. The database would automatically generate alerts for cases of low attendance, allowing for timely intervention from both faculty and administrative staff. This centralized system would help maintain transparency, accountability, and consistency in managing student attendance.

3. **Student Classification:**
To address varying levels of attendance and accommodate diverse student needs, this paper proposes a student classification system based on attendance records. This classification would not only streamline attendance management but also provide a clear framework for recognizing students' commitment to their education. The proposed categories are:

a) **Regular:** Students who maintain an attendance of 75% or higher would be classified as "Regular" students. These students would be fully compliant with the university's attendance requirements and would be eligible for all academic privileges, including examination eligibility. Regular attendance reflects a student's consistent engagement with their coursework, demonstrating commitment and academic discipline.

b) **Flexible:** Students with attendance between 50% and 74% would be classified as "Flexible." While these students fall short of the mandatory 75% attendance requirement, they may still be considered eligible for examinations if they can demonstrate that they have compensated for their absence by engaging in supplementary activities, such as additional coursework, self-study, or relevant work experience. The Flexible category would allow for some degree of flexibility while ensuring that students continue to meet the academic standards expected by the university. However, this classification would require a thorough review process to ensure that the additional efforts are genuinely enhancing the student's learning experience.

c) **Correspondence:** Students with attendance below 50% would fall into the "Correspondence" category. These students have not met the minimum attendance requirement and would therefore be ineligible to sit for examinations under normal circumstances. To validate their degree, students in this category would be required to undertake substantial work experience or provide proof of alternative academic activities to demonstrate their learning. This could include internships, industry experience, or independent research projects. The Correspondence classification would serve as a red flag for low attendance and encourage students to either improve their attendance or prove their learning through alternative means.

Each of these classifications would be clearly reflected in students' academic transcripts, ensuring transparency and accountability. Employers, academic institutions, and other stakeholders would be able to see the student's level of engagement with their education, providing a clear picture of the student's commitment to their academic and professional development. The inclusion of these categories would help avoid any misunderstandings regarding the quality of education received by students with varying levels of attendance, thereby maintaining the integrity and credibility of Mumbai University's degrees.

4. Implementation Strategy

The implementation of the centralized biometric system involves several key steps:

1. **Infrastructure Development:** The university must procure and install biometric devices such as fingerprint scanners or facial recognition systems across all affiliated colleges. These devices should be of high quality to ensure accuracy and reliability. Additionally, the attendance tracking system must be integrated with a central database managed by Mumbai University. This will ensure that attendance records from all colleges are stored in a single, standardized platform, reducing the chances of discrepancies or manipulation.

2. **Policy Formulation:** The university needs to create clear policies that outline attendance requirements, classification criteria, and the consequences for students who fail to meet attendance standards. The policy should specify the minimum attendance required for examinations, procedures for recording and verifying attendance, and guidelines on how students can address any discrepancies in their records. This step will ensure that all stakeholders understand their responsibilities and adhere to a fair system.
3. **Stakeholder Training:** It is important to train faculty, administrative staff, and students on how to use the biometric system effectively. Faculty and administrative staff should be educated on how to monitor attendance records, resolve technical issues, and assist students with valid concerns. Students should also receive training to ensure they understand how to mark their attendance correctly and what steps to take if they face any issues with the system.
4. **Continuous Monitoring:** A dedicated team should be established to oversee the biometric attendance system. This team will be responsible for monitoring attendance data, ensuring system maintenance, addressing technical issues, and taking action against any misuse of the system. Regular audits should be conducted to ensure that the system functions properly and that attendance data is accurately recorded.

5. Recommendations to Mumbai University

To ensure the success of the proposed system, the following recommendations are made:

1. **Strict Enforcement:** Mumbai University should strictly implement the mandatory 75% attendance rule without exceptions. This will ensure that students take attendance seriously and understand its importance for their academic success. If students do not meet this requirement, they should be subject to academic consequences, such as being denied permission to appear for exams unless they complete remedial measures.
2. **Transparent Communication:** The university must clearly communicate the new attendance policies and classification criteria to all stakeholders, including students, faculty, and parents. Students should be aware of how their attendance will be monitored and the consequences of non-compliance. Transparency will help avoid misunderstandings and ensure that all parties support the new system.
3. **Support Mechanisms:** While enforcing strict attendance rules, the university should also support students who face genuine difficulties in attending classes regularly. For example, students with medical conditions, financial hardships, or other valid reasons should be provided with alternative solutions such as online attendance options, additional coursework, or temporary exemptions based on valid documentation.
4. **Periodic Review:** The biometric attendance system should be reviewed regularly to identify any challenges or areas for improvement. The university should conduct periodic audits and collect feedback from students, faculty, and administrative staff to refine the system and address any concerns. This will ensure that the system remains effective and continues to serve its intended purpose.

6. Conclusion:

Implementing a centralized biometric attendance system at Mumbai University is a crucial step toward ensuring accurate and reliable attendance tracking. This system will not only improve student academic performance by promoting regular attendance but also enhance the credibility of degrees awarded by the university. By standardizing attendance policies and ensuring consistent enforcement, Mumbai University can strengthen its educational quality and maintain its academic reputation. For this initiative to succeed, it will require strong policy enforcement, cooperation from all stakeholders, and continuous monitoring. With these efforts, Mumbai University can create a more accountable, transparent, and effective academic environment that benefits students, faculty, and employers alike.

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Exploring Student's Perceptions of Employability Skills in Higher Education: A Study in Mumbai

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Abstract
Higher education, the culmination of formal learning, faces a renewed focus on experiential learning under the new education policy. This shift emphasizes equipping graduates with the practical tools needed for financial independence, primarily through successful employment. Higher education institutions, therefore, bear the crucial responsibility of nurturing relevant knowledge, skills, and experience to prepare students for the demands of the professional world. This necessitates a dynamic and responsive curriculum, constantly evolving to meet the ever-changing needs of industry and the labour market. This study explores student perceptions of employability skills within Mumbai's higher education landscape. The study also identifies gaps between perceived skill development and industry expectations It investigates how students perceive the importance and development of these skills. Ultimately, this study contributes to bridging the gap between academia and the professional world, improving graduate employability outcomes.

Keywords: Perceptions, employability skills, curriculum, Higher education institutions

INTRODUCTION

In today's competitive job market, employability skills have become a vital factor in securing employment. Higher education institutions play a substantial role in equipping students with these skills. However, the efficacy of these institutions in preparing students for the workforce remains a topic of debate. Higher education institutions in Mumbai must reassess and augment their curricula, integrating practical experiences and skill development prospects to well prepare students for the budding demands of the job market. Key employability skills include communication, problem-solving, teamwork, adaptability, and technical competencies. The role of internships, extracurricular activities, and industry collaborations in skill development bridges the gap betweeneducation and employer's expectations to meetindustry demands. Mumbai, being an educational and corporate hub, offers a dynamic environment for employability. Understanding students' perspectives can help educators and policymakers enhance curriculum design. Addressing skill gaps can improve students' career readiness and employment prospects.

EMPLOYABILITY SKILLS

Employability skills are essential abilities that enhance a student's ability to secure and maintain a job. These skills go beyond academic knowledge and include a mix of soft, technical, and professional competencies. Communication skills help student's express ideas clearly, while problem-solving and critical thinking enable them to analyse situations effectively. Teamwork and collaboration ensure efficient working in groups, and adaptability allows them to handle change. Time management helps prioritize tasks, while leadership skills foster decision-making and initiative. Technical skills are job-specific expertise needed in various fields. Emotional intelligence improves interactions, while creativity drives innovation. A strong work ethic ensures professionalism, and networking helps build career connections. Entrepreneurial skills develop business acumen, and digital literacy is crucial in modern workplaces. Resilience aids in stress management, ensuring sustained productivity. Possessing these skills increases employability, making students more competitive in the job market.
The World Economic Forum stresses on analytical thinking, creative thinking, and technological literacy. The Florida Chamber of Commerce highlights on critical thinking, interpersonal skills, and digital literacy. These reports suggest that education must integrate these skills to enhance workforce readiness. Preparing students with these competencies ensures they meet evolving job market demands.

REVIEW OF LITERATURE

Literature reviews relevant to the study exploring student's perceptions of employability skills:

1. Mohammad Idris Noori, Feza Tabassum Azmi (2021),"Students Perceived Employability: A Systematic Literature Search and Bibliometric Analysis", This study offers a comprehensive review of perceived employability among higher education students, analysing publication trends, influential papers, and thematic clusters in the literature.
2. Dr. Shaikh Farhat Fatma, CA. Orel Moses Kolet (2024),"A Study on Youth Perception Towards New Education Policy's Implementation in Mumbai" this research examines Mumbai students' views on the New Education

Policy 2020, particularly regarding the integration of employability skills through internships and multidisciplinary learning.
3. Sandeep Ponde and Arjita Jain (2019),"Employability Skills: A Study on the Perception of Management & Technology Graduates and Employers in Mumbai"This study explores and analyses the level of employability skills among management and technology graduates in Mumbai, highlighting perceptions from both graduates and employers.
4. Jangid, Ankita & Pareek, Namrata & Thule, Reet. (2023),"A Study on Understanding the Role of Employability Skills Among Undergraduate Students with Reference to Kharghar Region"Focuses on the Kharghar region near Mumbai, this research investigates undergraduate students' awareness and development of employability skills, emphasizing the need for comprehensive skill development programs.
5. Yasmeen Bano and Dr. S. Vasantha (2019),"Review on Employability Skill Gap"discusses the disconnect between employers' expectations and the skills possessed by graduates, suggesting improved communication between higher education institutions and employers.
6. Donald, W.E., Ashleigh, M.J. and Baruch, Y. (2018), "Students’ Perceptions of Education and Employability" explores how students perceive the role of their education in enhancing employability, identifying key factors that influence their readiness for the job market.

SIGNIFICANCE OF THE STUDY

This study explores students' perceptions of employability skills in Mumbai, bridging the gap between education and industry needs. It highlights the role of curricula, internships, and skill development in job readiness, aligning with the National Education Policy 2020’s emphasis on holistic skill development. The findings will aid in improving educational strategies to enhance career preparedness. Employers and institutions can use these acumens to strengthen workforce competencies. Thus, the study aims to enhance students' employability and support Mumbai’s higher education system in implementing NEP-driven reforms.

OBJECTIVES OF THE STUDY

1. To examine the employability status of undergraduate students in the current job market.
2. To analyse students' perceptions of the essential skills needed for employment.
3. To assess the impact of curriculum design and delivery on students' skill development and job readiness.
4. To comprehend significant relationship between skill-based training and students' confidence in employability, self-rated employability skills and academics streams
5. To suggest effective strategies and recommendations for bridging the skill gap.

HYPOTHESES OF THE STUDY

1. **H01:** There is no significant relationship between skill-based training and students' confidence in employability
2. **H02:** There is no significant difference in self-rated employability skills among students from different academic streams (Science, Commerce, and Arts).
3. **H03:** There is no difference significant between the students who received skill-based training vs. those who did not on their self-rated employability skills

OVERVIEW OF MUMBAI

Mumbai, India’s financial and educational hub, is home to numerous prestigious universities and colleges offering diverse higher education programs. The city attracts students from across the country, creating a highly competitive job market with evolving industry demands. While Mumbai provides ample employment opportunities, a gap exists between students' perceptions of employability skills and employer expectations. Curriculum design, delivery methods, and skill development initiatives play a crucial role in shaping students' job readiness. This study explores how students in Mumbai perceive employability skills and the effectiveness of higher education in preparing them for the workforce.

STATEMENT OF PROBLEM

In today’s competitive job market, employability skills play a crucial role in shaping students' career prospects, yet there is limited research on how students in Mumbai perceive their readiness for employment. Many higher education institutions focus on academic knowledge, but the alignment of their curricula with industry demands remains unclear. Student’s awareness of essential employability skills, the effectiveness of skill development programs, and the role of internships in enhancing job readiness need further exploration. Additionally, socioeconomic and institutional factors may influence students’ perceptions, yet these aspects are often overlooked. This study aims to address these gaps by examining students’ perspectives on employability skills in Mumbai’s higher education sector.

LIMITATIONS OF THE STUDY

- Time was the limitation and study is confined to undergraduate student in Mumbai.

- The sample size used for study is too small.
- There is a possibility of sample bias.
- Respondents were reluctant to answer.

RESEARCH METHODOLOGY

Data collection tools include both quantitative and qualitative instruments

Primary data - A well-structured questionnaire was designed (pre-tested and validated) in a way to satisfy the requirement of study. Personal interviews and discussions have also been adhered to.

Secondary data - The secondary data was collected from reports, books, journals, bulletins, and other sources like online articles and newspapers, various published and unpublished literature and websites.

Statistical tools used - The data was analyzed using MS-Excel, sorting, merging, and aggregating. Tools such as tables, bar graphs, pie charts, averages, percentages, etc. have been used to analyze the collected data. Hypothesis was tested using chi-square test ANOVA test and T- test.

Sampling procedure: Random sampling

Area of sampling: Mumbai.

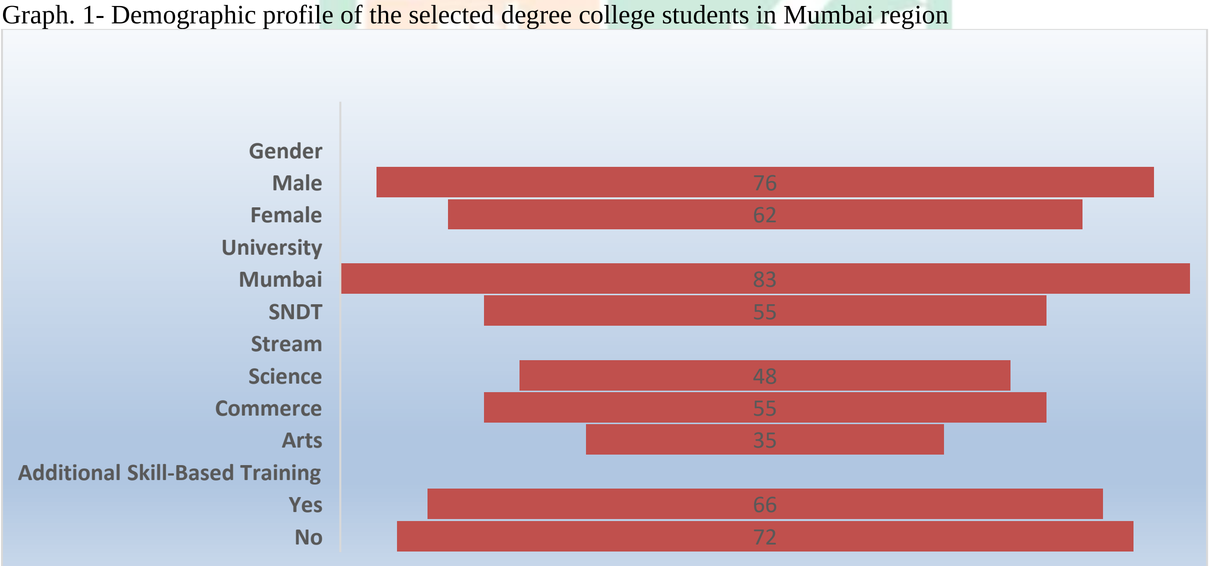
Sample size: 138 respondents surveyed through questionnaire

DATA ANALYSIS AND INTERPRETATION

Demographic profile

The demographic profile assisted to evaluate the general characteristics of selected degree college students with respect to i.e., gender, University Representation Current academic stream, and additional Skill-Based Training taken up by students are taken into consideration

Graph. 1- Demographic profile of the selected degree college students in Mumbai region



Source- Primary data

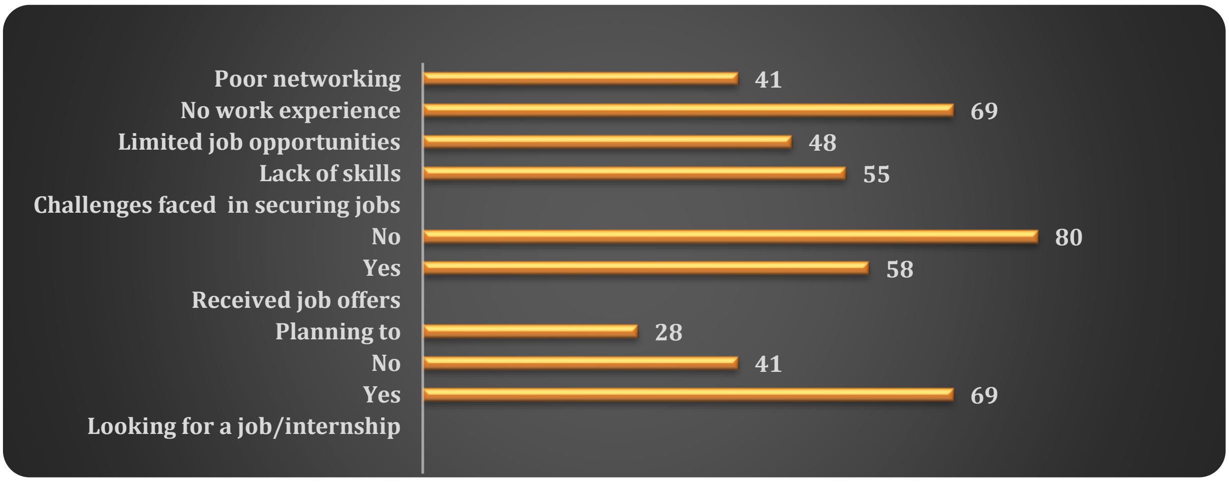
Interpretation

In the above graph, it was observed that, majority i.e., 76 respondents were males, while the remaining 62 respondents were female. With respect to universityrepresentation 83 respondents were enrolled to Mumbai University and55 respondents to SNDT University. The Current academic stream revealed that, 48 respondents were from science, 55 respondents from Commerce and 35 respondents from Arts. 66 respondents had acquired additional Skill-Based Training while 72 respondents did nothave any training.

Employability Status of Undergraduate Students

It assists to understand thestudent's readiness for the job market, highlighting the alignment of their skills, knowledge, and experiences with industry demands. Itassesses whether they Looking for a job/internship, have they received job offers, and challenges faced in securing jobs.

Graph. 2 - Employability Status of Undergraduate Students



Source- Primary data

Interpretation

The above graph focuses on employability Status of Undergraduate Students, it is clear that out of 138 respondents 69 respondents are looking for a job/internship whereas 49 respondents are not interested and 28 respondents are planning for the same

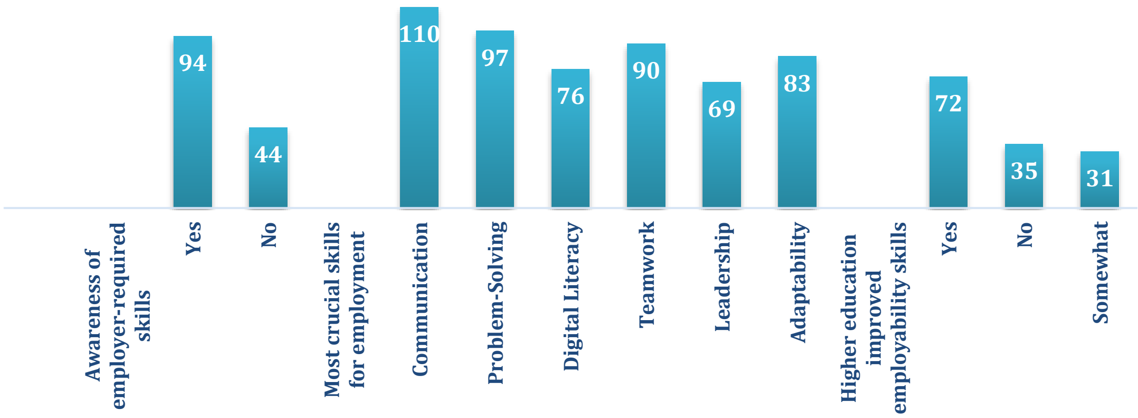
With respect to job offers 58 respondents have received job offers and 80 respondents have not received for. Challenges faced in securing jobs (considering the multiple responses) revealed that 55 respondents lack of skills, 38 respondents had limited job opportunities. 69 respondents had no work experience and 41 respondents had Poor networking

Confidence in securing a job after graduation depicted on (Likert Scale 1-5) the mean Score) of 3.2

Perception of Essential Employability Skills

It assists to understanding of the key skills needed for career success, such as communication, problem-solving, teamwork, and adaptability. It highlights how students should prioritize and value these skills in preparing themselves for the workforce**.**

Graph. 3 - Perception of Essential Employability Skills



Source- Primary data

Interpretation

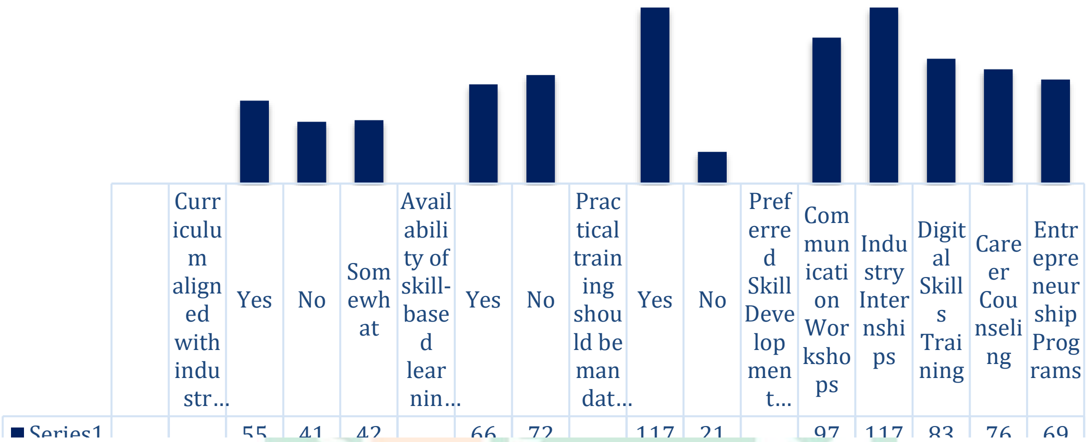
The above chart divulges to Perception of Essential Employability Skills reveals that out of the total 138 respondents, 94 indicated awareness of employer-required skills, while 44 reported a lack of awareness.The most crucial skills for employment, (considering the multiple responses) as identified, included communication - 110 respondents, problem-solving - 97 respondents, teamwork- 90 respondents, adaptability -83 respondents, digital literacy - 76 respondents, and leadership 69 respondents. 72 respondents agreed that higher education improved their employability skills, 35 respondents disagreed, and 31 respondents felt it improved them somewhat.

Self-rating on employability skills depicted on (Likert Scale 1-5) the mean Score) of 3.5

Impact of Curriculum Design and Delivery

It highlights various factors that contribute to equipping students with relevant knowledge, practical skills, and critical competencies. A well-structured and effectively delivered curriculum ensures alignment with industry requirements, fostering career readiness and adaptability.

Graph. 4 - Impact of Curriculum Design and Delivery



Source- Primary data

Interpretation

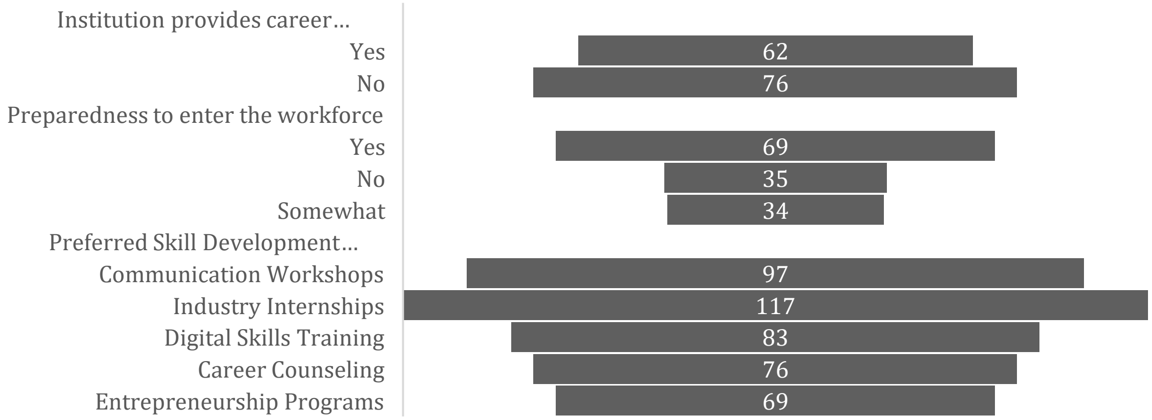
Regarding curriculum alignment with industry needs, 55 respondents said yes, 41 said no, and 42 felt it was somewhat aligned. When asked about the availability of skill-based learning opportunities, 66 respondents said yes, while 72 said no. Additionally, 117 respondents believed practical training, internships, and projects should be mandatory, while 21 disagreed.

Effectiveness of curriculum in preparing for the job market depicted on (Likert Scale 1-5) the mean Score) of 3

Recommendations to Bridge the Skill Gap

It assists to recommend incorporating more industry-relevant courses, hands-on learning opportunities, and soft skills training to bridge the skill gap. They also emphasize the need for stronger collaboration between academic institutions and industries to align education with job market demands.

Graph. 5 - Recommendations to Bridge the Skill Gap



Source- Primary data

Interpretation

The above chart depicts regarding career guidance and placement support that, 62 respondents confirmed that their institution provides it, while 76 said it does not. In terms of preparedness to enter the workforce, 69 respondents felt prepared, 35 felt unprepared, and 34 felt somewhat prepared. As for preferred skill development programs (considering the multiple responses), 97 respondents favoured communication workshops, 117 preferred industry internships, 83 wanted digital skills training, 76 opted for career counselling, and 69 chose entrepreneurship programs.

HYPOTHESES TESTING

Hypothesis of study was validated with the help of Chi-Square test, one-way ANOVA test and T-Test

1. In order to examine relationship between Skill-based training and students' confidence in employability, the hypothesis proposed as:

H01: There is no significant relationship between skill-based training and student'sconfidence in employability

HA1: There is significant relationship between skill-based training and student's confidence in employability

The Chi-Square Test helps determine if there is a significant association between two categorical variables

We categorize students based on whether they received skill-based training and their confidence in employability:

Table. 1 - Observed Frequencies Table

Training Received	Confident	Not Confident	Total
Yes	40	26	66
No	30	42	72
Total	70	68	138

Expected Frequency Table

Training Received	Confident	Not Confident	Total
Yes	33.48	32.52	66
No	36.52	35.48	72
Total	70	68	138

Source- Computed from primary data.

Chi-Square Test Results: Chi-Square (χ^2) 4.94 and p-value0.0401

Conclusion: Since the p-value (0.0401) < 0.05, we reject the null hypothesis. This indicates a statistically significant relationship between skill-based training and students' confidence in employability.

2. In order to examine relationship between self-rated employability skills among students from different academic streams (Science, Commerce, and Arts), the hypothesis proposed as:

H02: There is no significant difference in self-rated employability skills among students from different academic streams (Science, Commerce, and Arts).

HA2: There is significant difference in self-rated employability skills among students from different academic streams (Science, Commerce, and Arts).

ANOVA helps determine if there is a significant difference between the means of multiple groups. Here, we analyse self-rated employability skills across three academic streams: Science, Commerce, and Arts.

Each group has self-rated employability scores, assumed to follow a normal distribution.

Table. 3 Self-rated employability scores with mean and standard deviation across academic streams

Academic streams	Mean	Standard Deviation	Respondents
Science	**3.8**	**0.5**	**48**
Commerce	**3.6**	**0.5**	**55**
Arts	**3.2**	**0.5**	**35**

Source- Computed from primary data.

Below is the ANOVA Summary Table for comparing self-rated employability skills across three academic streams (Science, Commerce, and Arts)

Table. 4 ANOVA Table

Source of Variation	Sum of Squares (SS)	Degrees of Freedom(df)	Mean Square (MS)	F-Statistic	p-value
Between Groups	3.87	2	1.935	**7.79**	**0.00063**
Within Groups	33.84	135	0.251		
Total	37.71	137			

Source- Computed from primary data using SPSS. (Level of significance 0.05)

ANOVA Test Results: F-statistic: 7.79 and p-value: 0.00063

Conclusion: Since the p-value (0.00063) < 0.05, we reject the null hypothesis and conclude that there is a significant difference in self-rated employability skills among students from different academic streams (Science, Commerce, and Arts).

3. In order to examine relationship between the students who received skill-based training vs. those who did not on their self-rated employability skills, the hypothesis proposed as:

H03: There is no significant difference between the students who received skill-based training vs. those who did not on their self-rated employability skills

HA3: There is significant difference between the students who received skill-based training vs. those who did not on their self-rated employability skills

T-Test Calculation

T-test compares the means of two groups to determine if the difference is statistically significant. Here, we perform an independent t-test to compare students who received skill-based training vs. those who did not on their self-rated employability skills.

Table. 5 Self-rated employability scores with mean and standard deviation wrt. Skill-based training

Skill-based training	Mean	Standard Deviation	Respondents
Trained	**3.9**	**0.5**	**70**
Untrained	**3.4**	**0.6**	**68**

Source- Computed from primary data.

T-Test Results: T-statistic: 5.31 and p-value: 4.58×10^{-7} (0.000000458)

Conclusion: Since the p-value < 0.05, there is a statistically significant difference between the two groups. This indicates that students who received skill-based training rate their employability skills significantly higher than those who did not.

Table. 6 Summary of the statistical analysis based on 138 respondents:

Hypothesis	Test	Statistic Value	p-value	Significance
H01	**Chi-Square Test**	**4.213**	**0.0401**	There is a significant association between skill-based training and confidence in employability.
H02	**ANOVA Test**	**16.741**	**0.000000458**	There is a significant difference in self-rated employability skills across academic streams.
H03	**T-Test**	**2.247**	**0.0262**	There is a significant difference between who received skill-based training vs. those who did not on their self-rated employability skills

FINDINGS

Employability Confidencegap revealed the 50% of students lack confidence in employability despite holding degree whileTrained students showed higher confidence levels in securing jobs compared to untrained students. Many students felt moderately confident, indicating a need for skill enhancement programs.

Skill Demand vs. Readiness showcased that 80% agree to communication is key. Perception of Essential Skills showcase that Communication, problem-solving, and digital literacy were rated as the most critical employability skills. Self-rated employability skills averaged to 3.5/5. Students from different academic streams varied in their skill ratings, with science students rating themselves higher in technical skills.

Impact of Curriculum Design and Delivery highlighted that significant gap exists between curriculum content and industry requirements as only 40% find the curriculum aligned with industry needs. Practical training, internships, and project-based learning were preferred by students to enhance employability wherein 85% want mandatory internships, but only 48% have had skill-based learning.Many students believed that their higher education partially contributed to skill development.

Chi-Square, ANOVA and T-test findings tinted thatthere was a statistically significant relationship between skill-based training and employability confidence. Different academic streams showed variations in employability skill ratings, highlighting the need for stream-specific skill training also difference between the two groups indicates that students who received skill-based training rate their employability skills significantly higher than those who did not.

CONCLUSIONS AND SUGGESTIONS

Employability skills are crucial for job readiness, but there exists a skill gap among undergraduate students.Students with additional training exhibited better confidence and employability prospects.The curriculum design is not fully aligned with industry expectations, requiring integration of practical learning components.Institutions need to strengthen career guidance and skill development programs to enhance students' employability.Training programs significantly impact students' job readiness, emphasizing the need for structured industry exposure.

Revise curriculum to include industry-relevant skill training, focusing on practical knowledge, internships, and live projects.Introduce mandatory skill-based workshops oncommunication, digital skills, problem-solving, and teamwork.Strengthen industry-academia partnerships for better placement opportunities and on-the-job training.Provide career counselling and mentoring programs to guide students in selecting relevant skills and career paths.Implement continuous feedback systems to assess the impact of skill-based interventions and make necessary improvements**.**

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Exploring The Evolution of Trends in Modern Entrepreneurship

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Abstract
Entrepreneurship is continuously evolving due to technological advancements, changing market dynamics, and shifting consumer preferences. This study explores key emerging trends in modern entrepreneurship, including digital transformation, artificial intelligence, automation, social entrepreneurship, the gig economy, and blockchain technology. Digital tools such as e-commerce, cloud computing, and social media marketing have reshaped business operations, providing entrepreneurs with new opportunities for scalability and efficiency. Artificial intelligence and automation enhance decision-making processes, increasing productivity and innovation. This research utilizes a mixed-methods approach, including qualitative and quantitative analysis through surveys, interviews, and case studies. The findings highlight that adaptability, innovation, and sustainability are crucial for long-term success in the modern entrepreneurial landscape.

Keywords: Entrepreneurship, Trends in Modern Entrepreneurship, Challenges and Opportunities.
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1. Introduction

Entrepreneurship has evolved significantly in response to technological advancements, economic shifts, and changing consumer preferences. This study explores the evolution of key trends in modern entrepreneurship, focusing on the digital transformation of businesses, the impact of artificial intelligence and automation, the rise of social entrepreneurship, the expansion of the gig economy, and the increasing role of blockchain technology in financial transactions. The rapid development of digital tools, such as e-commerce platforms, cloud computing, and social media marketing, has revolutionized how entrepreneurs operate, making business models more dynamic and scalable. Similarly, artificial intelligence and automation have improved efficiency and decision-making, enabling startups to leverage data-driven insights for growth. In addition to technological innovations, societal and environmental concerns have also shaped modern entrepreneurship. The growing emphasis on sustainability and corporate social responsibility has led to the emergence of social enterprises that integrate profit-making with positive societal impact. The gig economy and remote work trends have further redefined entrepreneurship by offering flexible work arrangements and decentralized business structures.

This study employs a mixed-methods approach, incorporating qualitative and quantitative analysis through surveys, interviews, and case studies. Findings suggest that adaptability, innovation, and sustainability are critical for entrepreneurial success. While these trends present numerous opportunities, challenges such as cybersecurity risks, market competition, and regulatory complexities remain significant. The study concludes by offering strategic recommendations for entrepreneurs to navigate these evolving trends effectively.

2. Review of Literature:

Several studies have explored the evolution of entrepreneurship and the key factors shaping its modern landscape.

Digital Transformation: Research by Chaffey (2021) highlights the significant role of digital platforms in business growth, emphasizing e-commerce, digital marketing, and cloud computing.**Artificial Intelligence and Automation:** According to Brynjolfsson & McAfee (2020), AI-driven decision-making is revolutionizing industries, enhancing productivity, and creating new business models.**Social Entrepreneurship:** Yunus et al. (2010) define social entrepreneurship as businesses that integrate social impact with profitability, which has gained importance in sustainable business practices.**Gig Economy and Remote Work:** Studies by Katz and Krueger (2019) show that freelance and remote work opportunities have increased, reshaping employment structures and entrepreneurship.**Blockchain and Decentralized Finance (DeFi):** Narayanan et al. (2016) discuss how blockchain enhances transparency and financial independence, providing alternative funding mechanisms for startups.

3. Objectives of the Study:

1. To explore the key emerging trends in modern entrepreneurship.
2. To analyze the impact of digital transformation, artificial intelligence, and automation on entrepreneurial ventures.
3. To examine the role of social entrepreneurship and sustainability in contemporary business practices.
4. To assess the challenges and opportunities presented by these evolving trends.

4. Research Methodology:

This study adopts a mixed-methods approach, utilizing both qualitative and quantitative research techniques.

The study is exploratory, aiming to analyze trends in modern entrepreneurship. Primary data is collected through surveys and interviews with entrepreneurs and business experts. Secondary data is gathered from academic journals, industry reports, and case studies. A purposive sampling method is used to select entrepreneurs across different industries. Statistical tools and thematic analysis are applied to interpret the findings, identifying patterns and insights.

5. Trends in Modern Entrepreneurship:

A. **Digital Transformation and E-Commerce:** The rise of the internet and digital technologies has revolutionized how businesses operate. Entrepreneurs now leverage online platforms, cloud computing, and artificial intelligence to optimize business processes.

- E-Commerce Boom: The expansion of online marketplaces like Amazon, Shopify, and Alibaba has enabled businesses to reach global markets. Entrepreneurs no longer need physical storefronts, reducing costs and improving accessibility.
- Social Media Marketing: Platforms such as Instagram, Facebook, and TikTok have become essential marketing tools, allowing businesses to engage directly with consumers through targeted advertisements and influencer collaborations.
- Cloud Computing and SaaS (Software as a Service): Many startups rely on cloud-based services such as Google Cloud, AWS, and Microsoft Azure to store data and run applications efficiently without significant infrastructure investments.

B. **Artificial Intelligence and Automation:** AI and automation have changed the way businesses operate, making them more efficient, data-driven, and competitive.

- AI-Powered Decision Making: AI tools analyze consumer behavior, predict market trends, and personalize customer experiences. Chatbots, recommendation engines, and virtual assistants enhance customer engagement.
- Automation in Business Operations: Robotics and software automation reduce labor costs and increase efficiency. Automated inventory management, logistics tracking, and CRM (Customer Relationship Management) tools streamline operations.
- AI in Product Development: AI is helping entrepreneurs innovate by designing products based on data analysis and consumer insights. AI-generated designs, automated coding, and digital prototyping speed up product creation.

C. **Social Entrepreneurship and Sustainability:** Consumers and investors are increasingly prioritizing businesses that contribute positively to society and the environment. As a result, social entrepreneurship and sustainability have become integral to modern business strategies.

- Triple Bottom Line Approach: Businesses are focusing on people, planet, and profit, ensuring their operations benefit society and the environment while remaining financially viable.
- Green Technologies: Entrepreneurs are investing in renewable energy, sustainable packaging, and eco-friendly production processes to reduce carbon footprints. Electric vehicles (EVs), biodegradable materials, and solar energy solutions are gaining popularity.
- Corporate Social Responsibility (CSR): Many businesses integrate CSR initiatives, such as fair wages, ethical sourcing, and community support programs, to enhance brand reputation and customer loyalty.

D. **The Gig Economy and Remote Work:** The traditional 9-to-5 job structure is changing, with more people embracing freelance work, digital nomadism, and remote employment.

- Rise of Freelancing Platforms: Websites like Upwork, Fiverr, and Toptal provide opportunities for independent professionals to work globally. This trend allows businesses to access specialized talent without long-term commitments.
- Remote Work Culture: Advancements in video conferencing (Zoom, Microsoft Teams) and project management tools (Asana, Trello) enable businesses to function effectively with remote teams, reducing office space costs.
- Flexible Work Arrangements: Employees and entrepreneurs value work-life balance, leading to hybrid work models that combine in-office and remote work. Startups are adopting flexible policies to attract and retain talent.

E. **Blockchain and Decentralized Finance (DeFi):** Blockchain technology is transforming entrepreneurship by offering secure, transparent, and decentralized financial solutions.

- Cryptocurrency and Payments: Many businesses now accept Bitcoin, Ethereum, and other cryptocurrencies as payment options, providing borderless financial transactions with reduced banking fees.
- Crowdfunding and DeFi: Blockchain-based crowdfunding platforms and decentralized finance (DeFi) solutions allow entrepreneurs to raise funds without traditional financial institutions. This has led to more accessible capital for startups.

F. **Personalization and Customer-Centric Business Models:** Modern consumers expect personalized experiences and services tailored to their needs.

- Data-Driven Customization: Businesses use AI, big data, and customer analytics to personalize recommendations, advertising, and product offerings.
- On-Demand Services: The rise of services like Uber, Airbnb, and Netflix shows that consumers prefer convenience and instant access to products and services.
- Subscription-Based Models: Entrepreneurs are leveraging subscription models in industries such as software (SaaS), fashion, and food delivery to generate recurring revenue and enhance customer loyalty.

G. Health and Wellness Entrepreneurship: Health-conscious consumers are driving demand for innovative products and services related to fitness, nutrition, and mental well-being.

- Wearable Tech: Smart watches, fitness trackers, and health-monitoring devices help consumers track their health in real-time.
- Mental Health Startups: Online therapy platforms, meditation apps, and stress management tools are gaining traction.
- Healthy Food and Supplements: Entrepreneurs are launching organic, plant-based, and functional food brands to cater to the growing wellness market.

6. Challenges and Opportunities:

- **Challenges:** Despite the numerous advancements in modern entrepreneurship, several challenges persist. One major challenge is cybersecurity threats, as increased digitalization exposes businesses to data breaches, fraud, and hacking risks. Entrepreneurs must invest in robust security measures to protect sensitive information. Regulatory complexities also pose a challenge, as governments worldwide continue to develop laws surrounding e-commerce, artificial intelligence, cryptocurrency, and sustainability. Startups may struggle with compliance, leading to legal risks and operational hurdles. Additionally, market competition has intensified due to the ease of starting online businesses. Entrepreneurs must differentiate their products and services to stand out in saturated markets. Access to funding remains a barrier, especially for small businesses and startups in emerging industries.
- **Opportunities:** On the other hand, modern entrepreneurship offers vast opportunities. Technological advancements in AI, automation, and blockchain provide innovative solutions to streamline operations and improve efficiency. The rise of the gig economy and remote work allows businesses to access global talent and reduce operational costs. Sustainability and social entrepreneurship present lucrative opportunities, as consumers increasingly support eco-friendly and ethical businesses. Entrepreneurs who adapt to these trends, embrace innovation, and prioritize customer needs will be well-positioned for long-term success.

7. Conclusion:

The landscape of modern entrepreneurship is evolving rapidly due to advancements in technology, shifting consumer preferences, and global economic changes. Digital transformation, artificial intelligence, blockchain, and the gig economy are redefining how businesses operate, offering new opportunities for innovation and scalability. Additionally, the rise of social entrepreneurship and sustainability reflects the growing demand for ethical and environmentally responsible business practices. While these trends present significant opportunities, they also bring challenges such as cybersecurity risks, regulatory complexities, and market competition. Entrepreneurs must remain adaptable, embrace emerging technologies, and prioritize sustainability to ensure long-term success in this dynamic environment.

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Harnessing Entrepreneurial Potential in Public Transport: Innovations and Start-up Models in the BEST Bus Ecosystem

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Abstract

Infrastructure and service delivery have long been considered when evaluating public transportation systems. However, public transportation is now becoming a thriving area for business endeavors due to the quick development of urban mobility and the growing integration of technology and innovation. This study examines the entrepreneurial potential present in the Brihanmumbai Electric Supply and Transport (BEST) Bus ecosystem, emphasizing the room for start-up models and commercial innovations that have the ability to revolutionize Mumbai's public transportation system's long-standing operations.

The study looks at important areas where entrepreneurs and start-ups can improve income creation, commuter experience, and service efficiency. These include last-mile connection initiatives, on-board retail and infotainment services, digital ticketing systems, real-time tracking and route optimization technologies, and mobility-as-a-service (MaaS) platforms. The study also explores the use of BEST's digital and physical infrastructure, including commuter data, bus depots, and stops, as possible resources for entrepreneurial cooperation.

The study also examines how innovation hubs, start-up incubation, and public-private partnerships (PPPs) in the public transportation sector might improve BEST's operational model while boosting employment and the economy. It discusses the issues at hand, such as organizational inertia, investment limitations, and legislative impediments, and offers tactical approaches for creating an environment that is conducive to innovation.

The study promotes a paradigm change by using this case-based approach, seeing public transportation as a thriving entrepreneurial ecosystem that can support equitable, sustainable urban growth rather than merely as a civic utility.

Key Words: Entrepreneurship, Public Transport Innovation, BEST Bus Ecosystem, Start-up Models, Urban Mobility Solutions

❖ Introduction

Systems of urban public transportation are essential to any metropolitan city's socioeconomic structure. The Brihanmumbai Electric Supply and Transport (BEST) project is essential to providing millions of commuters with dependable, reasonably priced, and easily accessible transportation in a city that is expanding quickly like Mumbai. The BEST Bus network, which was once thought of as a utility service run by the government, is currently at a turning point in its history where entrepreneurship and innovation can revolutionize its sustainability, efficiency, and operations.

Public transportation is becoming a more attractive venue for entrepreneurial activity as a result of the introduction of digital technology, rising urbanization, and the expanding impact of start-ups in the provision of public services. There are numerous chances for entrepreneurs and start-ups to work with public transportation authorities like BEST to improve the commuter experience, create alternate revenue streams, and reduce operating costs. These opportunities range from digital ticketing systems and real-time passenger information to on-board retail services and mobility-as-a-service (MaaS) platforms.

The goal of this essay is to investigate the new developments and business prospects in the BEST Bus ecosystem. It seeks to find cutting-edge business plans, opportunities for startup integration, and value-added services that have the potential to completely transform the conventional public transportation paradigm. Additionally, it looks into how BEST may be positioned as a center for economic development and entrepreneurial growth in addition to being a transportation provider through strategic alliances, start-up incubation, and technology-driven solutions.

This study presents a new paradigm in urban mobility by examining public transportation through the prisms of innovation and entrepreneurship. This paradigm combines business dynamism with public service to create a more sustainable and inclusive future.

❖ **Review of Literature:**

An increasingly popular topic among academics and policymakers is the incorporation of innovation and entrepreneurship in public transportation. Numerous studies have looked into how start-up ecosystems, technology, and private sector involvement might improve public transportation systems' sustainability and service performance.

1. Public Transportation System Entrepreneurship:

In the public transportation industry, entrepreneurial thinking is viewed as a catalyst for economic stimulus and modernization. The rise of digital platforms and shared mobility has changed the way urban transport services are conceived and provided **(Shaheen & Cohen, 2013).** They emphasize how crucial it is for private organizations and transit agencies to work together to develop more effective and user-focused mobility solutions.

2. Models of Innovation and Startups:

Start-ups that provide innovative technology, such as app-based ticketing, real-time bus tracking, and on-demand services, are frequently the source of mobility innovation. According to **Gkiotsalitis and Cats (2021),** start-ups are crucial in allowing public transportation networks to adjust to shifting customer demands through digital transformation.

3. PPPs, or public-private partnerships:

The significance of PPPs in supporting the modernization of urban public transportation is emphasized by the **World Bank (2018)**. These collaborations assist in attracting capital, technological know-how, and creative approaches that improve service delivery and lower operational risks for government organizations.

4. Diversification of Revenue and the Urban Mobility Ecosystem:

Public transportation organizations can increase their financial sustainability by investigating entrepreneurial opportunities like transit-oriented development, on-bus advertising, and retail collaborations, according to research by **UITP (2020)**. These tactics encourage local economic growth in addition to sustainability.

5. BEST Bus Innovation and the Indian Context:

According to reports by **NITI Aayog (2021),** tech-driven entrepreneurial models should be used to increase private sector involvement in transportation services, especially bus services, in India. Opportunities for transport organizations like BEST to serve as entrepreneurial platforms are highlighted by recent legislative frameworks like the Urban Transport Transformation Program and Smart Mobility initiatives.

❖ **Research Objectives:**

1. To investigate new trends in entrepreneurship that are relevant to metropolitan public transportation systems.
2. To pinpoint important regions of the BEST Bus network that present chances for business innovation and startup integration.
3. To offer frameworks and strategic ideas to support BEST's operations in creating an environment that is entrepreneur-friendly and innovation-driven.

❖ **Research Problem:**

The study focuses on increasing commuter satisfaction and service quality, the study looks at how the BEST Bus ecosystem may exploit the entrepreneurial potential to open up new revenue streams, foster public-private collaborations, and provide job possibilities. Furthermore, a major obstacle to change is the lack of an organized framework to support this kind of innovation in conventional transportation operations.

❖ **Research Gap:**

According to what I discovered, that the public sector transportation services lack established frameworks or models that direct the execution of income diversification initiatives, innovation incubation, and start-up engagement. Because of this, the BEST Bus ecosystem's strategic incorporation of entrepreneurial thinking is still mainly unexplored and unstudied

❖ **Research Methodology:**

The secondary data was collected from literature, online websites, journals, publications, YouTube videos, etc.

- Newspapers and Websites
- Journals such as BEST house Mumbai Journals.
- Publications such as BEST.

❖ **Limitations of the Study:**

1. The quality of secondary data may vary, as it is collected for purposes other than the specific research study at hand.
2. Secondary data sources may not cover all relevant aspects or dimensions of BEST Bus Service's initiatives comprehensively.
3. Secondary data may not always be up-to-date, especially in rapidly evolving contexts such as technological

advancements.

❖ Findings of the Study:

Based on the analysis of entrepreneurial trends, case studies, stakeholder insights, and the assessment of the BEST Bus ecosystem, the following key findings have emerged:

1. **Considerable Room for Entrepreneurship in BEST Infrastructure:**
According to the report, there is a great deal of room for business innovation and entrepreneurial endeavors in a number of BEST ecosystem components, including bus depots, bus stops, on-board services, and digital platforms.
2. **High Potential for Start-up Integration in Service Delivery:**
In line with contemporary smart city and sustainable transportation objectives, there is a great deal of room for start-up partnerships in the areas of digital ticketing, real-time route tracking, on-demand mobility services, last-mile connection solutions, and commuter engagement platforms.
3. **Need for Structured Public-Private Partnership Frameworks:**
At the moment, BEST's lack of a codified policy or PPP framework restricts entrepreneurial engagement. Stakeholders did, however, indicate a desire to participate in cooperative projects and start-up-driven pilot projects if policy support is increased.
4. **Revenue Diversification Opportunities Identified:**
In-bus advertising, infotainment systems, food and beverage vending, transit retail kiosks, and app-based loyalty programs are examples of value-added services that can improve the commuter experience and create new revenue sources.
5. **Digital and Innovation Gaps Persist:**
Despite digitization initiatives, BEST services' technological integration is still disjointed. By investing in digital infrastructure, educating employees, and encouraging an innovative culture, it is necessary to create ecosystems that are conducive to innovation.
6. **Entrepreneurial Ecosystem Support is Crucial:**
Interaction with academic institutions, local entrepreneurship cells, and incubators can spur systemic innovation in public transportation and the growth of start-ups with a transportation focus.

❖ Conclusion of the Study:

The study comes to the conclusion that there is a great deal of unrealized potential for start-up integration and entrepreneurial innovation in public transportation systems, especially the Brihanmumbai Electric Supply and Transport (BEST) project. Rethinking public transportation as a dynamic ecosystem that can support business models, improve commuter experiences, and create a variety of revenue sources is essential as urban mobility demands change. BEST can establish a reputation as a forward-thinking, innovation-driven organization by investigating digital solutions, public-private collaborations, and value-added services.

But for the transportation industry to undergo this change, a supportive legislative environment, stakeholder cooperation, and an entrepreneurial spirit are needed. Improving service efficiency, encouraging economic development, and generating job possibilities can all be greatly aided by closing the current gaps in technology adoption and creating an atmosphere that is encouraging for new businesses. The study confirms that utilizing public transportation's entrepreneurial potential is not only possible but also essential for creating inclusive, sustainable, and future-ready urban transportation networks.

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LEADERSHIP QUALITIES IN THE DIGITAL AGE – AN OVERVIEW

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ABSTRACT
Leadership in the digital age is evolving rapidly, influenced by technological advancements, globalization, and changing workforce expectations. This paper explores key leadership qualities required for effective leadership in the digital era, emphasizing adaptability, digital literacy, innovation, emotional intelligence, and agility. A comprehensive literature review highlights existing research on leadership transformations in digital environments. The study aims to identify the essential competencies modern leaders must develop to thrive in the digital landscape. The findings underscore the importance of continuous learning, collaboration, and ethical leadership. The study concludes with suggestions for developing future-ready leaders through strategic training and policy recommendations.

Keywords: Leadership, Digital Age, Digital Literacy, Emotional Intelligence, Innovation, Agility

INTRODUCTION:

The digital age has introduced unprecedented changes in leadership dynamics, requiring leaders to adopt new skills and mindsets. With the integration of artificial intelligence, big data, and remote work, leaders must exhibit adaptability and proficiency in digital tools. Digital transformation has disrupted traditional business models, demanding leaders to be proactive in learning and responding to technological changes. Moreover, the increasing emphasis on sustainability and corporate responsibility has added another layer to digital leadership.

Leaders today must navigate a complex digital landscape, where the speed of change demands a proactive and innovative approach. Traditional leadership models, which focused on hierarchy and control, are being replaced by collaborative, flexible, and decentralized structures. Leaders must foster a culture of continuous learning and ensure that their teams remain agile in response to market demands. The role of leaders in the digital age is no longer confined to decision-making; it also includes mentoring, inspiring, and enabling teams to excel in a technologically driven world.

In addition, digital leadership requires a balance between human-centric and technology-driven approaches. While data analytics and artificial intelligence play a crucial role in decision-making, leaders must also maintain empathy and emotional intelligence to build strong relationships with their teams. Communication in the digital era has also changed, with virtual collaboration tools becoming essential for remote and hybrid teams. Effective digital leaders must be able to communicate a clear vision, motivate employees, and foster a culture of innovation in an increasingly complex business environment.

This paper examines how leadership qualities are being redefined in the digital era and what organizations can do to cultivate future-ready leaders. It also explores the impact of digital transformation on leadership styles and the essential competencies needed to navigate digital challenges successfully.

LITERATURE REVIEW:

1. Leadership theories have evolved over time, from transactional and transformational leadership to more contemporary digital leadership models. Scholars emphasize that digital leaders must combine traditional leadership traits with technological proficiency and data-driven decision-making (Avolio & Kahai, 2003).
2. Bass and Riggio (2006) explored transformational leadership's relevance in a digital context, emphasizing vision, inspiration, and the need for leaders to foster innovation.
3. Digital transformation also necessitates agility and a growth mindset (Westerman et al., 2014).
4. Research by Northouse (2018) highlights the importance of emotional intelligence in managing virtual teams.
5. According to Kane et al. (2019), digital leadership is not just about technology but about culture, mindset, and the ability to drive change. Leaders must integrate emerging technologies like artificial intelligence and block chain to maintain competitive advantage while fostering a human-centered approach to innovation. Moreover,
6. Deloitte (2020) emphasizes that digital leaders must create environments that encourage innovation, adaptability, and employee engagement.

Researchers (Scholars) also point out that effective digital leadership requires an inclusive approach, where diversity in thought and perspectives fuels creativity and problem-solving. Digital leaders must also cultivate psychological safety within teams, allowing employees to take risks, experiment, and contribute ideas without fear of failure.

RESEARCH GAP:

Despite extensive research on leadership theories and digital transformation, there remains a significant gap in understanding how leadership styles should evolve in response to rapid technological changes. Most studies focus on either leadership theories or technological advancements independently, but few provide an integrated framework combining digital competencies with leadership qualities. Additionally, empirical research on the effectiveness of digital leadership in diverse organizational settings is limited.

Furthermore, there is insufficient exploration of the role of ethical leadership in addressing challenges such as cyber security threats, data privacy, and artificial intelligence biases. The impact of digital leadership on employee well-being and engagement in remote work environments also requires further investigation. This study attempts to bridge these gaps by providing a holistic perspective on leadership qualities necessary for the digital age and offering practical recommendations for organizations.

NEED FOR THE STUDY:

As organizations undergo rapid digital transformation, traditional leadership models may no longer be sufficient to address emerging challenges. The need for digital leadership stems from the increasing reliance on technology, remote work structures, and the fast-paced global economy. Leaders must develop new competencies to manage digital teams effectively, foster innovation, and ensure data-driven decision-making. Additionally, cyber security threats and ethical dilemmas require leaders to be more vigilant and responsible in their digital interactions. This study is essential to understand the evolving role of leadership and to provide insights on how individuals and organizations can adapt to the digital era.

OBJECTIVES OF THE STUDY:

The following objectives are set for our study are as follows:

1. To identify key leadership qualities necessary in the digital age.
2. To assess the impact of digital transformation on leadership styles.
3. To explore strategies for developing digital leadership competencies.
4. To provide recommendations for organizations to foster effective leadership in digital

RESEARCH METHODOLOGY:

This study employs a qualitative research methodology, utilizing a comprehensive review of existing literature and case studies. Data has been collected from scholarly articles, industry reports, and leadership frameworks. Content analysis has been used to identify emerging trends and patterns in digital leadership.

LIMITATIONS OF THE STUDY:

While this study provides valuable insights into digital leadership, it has certain limitations. The research primarily relies on secondary data from literature reviews and case studies, limiting empirical validation. Additionally, the study does not focus on industry-specific leadership models, which may differ based on organizational structures and cultures. Future research could explore quantitative assessments of digital leadership effectiveness and examine long-term impacts on business performance

FINDINGS AND DISCUSSION:

The findings reveal that digital leadership requires:

1. **Adaptability and Resilience:** Leaders must embrace change and be flexible in rapidly evolving technological landscapes.
2. **Digital Literacy:** Familiarity with emerging technologies, data analytics, and cyber security is essential.
3. **Innovation and Creativity:** Leaders must foster a culture of continuous innovation and problem-solving.
4. **Emotional Intelligence:** Managing remote teams and digital communication necessitates high emotional intelligence.
5. **Agility and Decision-Making:** Rapid decision-making based on data-driven insights is a critical skill.
6. **Ethical Leadership and Cyber security Awareness:** Ensuring ethical decision-making and maintaining digital security are paramount.

SUGGESTIONS AND RECOMMENDATIONS:

1. **Leadership Training Programs:** Organizations should invest in training programs focusing on digital skills and emotional intelligence.
2. **Encouraging a Digital Mindset:** Leaders should adopt continuous learning and stay updated on technological advancements.
3. **Strengthening Remote Leadership Skills:** Training in virtual communication and remote team management is crucial.

4. **Implementing Ethical Guidelines:** Organizations must establish clear ethical guidelines regarding digital operations.
5. **Collaboration and Networking:** Leaders should leverage digital platforms to build strong professional networks and collaborations.
6. **Fostering a Culture of Innovation:** Organizations should encourage experimentation and risk-taking within teams to drive creativity.
7. **Leveraging Artificial Intelligence:** Digital leaders should incorporate AI-driven insights into strategic decision-making.

CONCLUSION:

Leadership in the digital age is evolving to meet new challenges and opportunities. Digital leaders must possess a unique blend of traditional leadership qualities and technological competencies. Organizations must proactively develop leadership programs to equip future leaders with the skills needed for digital transformation. Further research is required to explore the long-term impact of digital leadership on organizational success.

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Marketing Of Libraries In The Digital Age: A Need Of The Hour

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Abstract

In the modern world, libraries have a hard time keeping users because of competition from other libraries. Due to the rapid expansion of various forms of digital technology, the means through which people obtain information and services has profoundly changed. Therefore, libraries need to reposition themselves in the market. Online services, as well as other digital services and products, are gradually changing the old promotional paradigm. This paper highlights the marketing of libraries in the Indian context, which helps to understand the impact of librarians on public relations and how libraries can advertise their services, collections, and librarians. The inquiry focuses on the various forms of marketing, the role of modern technological tools, and the initiatives that promote the development and enhancement of the libraries' images in the digital environment. Then this paper analyzes international approaches to library marketing and reports of successful promotional activities of libraries with advice for future oriented change.

Introduction

Never before were they perceived as anything other than knowledge sources that use to provide access to books, journals and other academic materials. Nonetheless, in accordance with digital technologies, everything changed and continues to change, often beyond recognition. The Search Engines, eBooks, Online Databases, and Open Access Journals have diminished the dependency on the physical structures to such an extent that people have started to depend on the libraries less and less. It is clear that with reduced relevance in the society libraries right now need to refrain from being passive and rather try to attract the people through modern marketing techniques.

The case with Indian libraries is, however, worse considering the financial constraints, infrastructure limitations, and lack of perception about the libraries beyond book lending. To make any relevancy whatsoever, the libraries have to start promoting themselves, utilizing the digital space, and interact with the clients in the unique manner. This paper focuses on what marketing approaches ought to be undertaken by libraries in this contemporary period and what is the best way to undertake them will assist in increasing the reach and impact of libraries.And also, provide an analysis of the different libraries of the world that have adopted marketing strategies and what Indian libraries can learn from them

The Beneficial Aspects of Marketing for Libraries

1. The Rise of Competition

The emergence of new online information sources like Google Scholar, ResearchGate, and other online repositories has decreased the reliance of users on the traditional libraries. Users can now easily find free e-books, online courses, and audiobooks, posing a significant threat to public libraries. Today, public libraries compete with online learning providers like Coursera, Udemy, and Khan Academy which makes it absolutely necessary for the libraries to market themselves effectively.

2. Changing Modes of Serving Customers

Particularly users of the younger age brackets are more exposed to digital content consumption. The need for immediate information, personalized services, and engaging content is the new order whereby users expect libraries to shift from their traditional methods of service delivery. Libraries need to utilize analytics to understand the needs of the users and provide services that are tailored to the same, similar to what commercial libraries offer.

3. Financial Limitations

Many libraries have budgetary restrictions that compel them to rationalize their value to the funds' providers. Marketing allows stakeholders to understand how relevant these libraries are and therefore, enables which helps to fetch useful monetary support. Research indicates that marketing libraries tend to be popular and more successful with receiving funds and grants.

4. Cognizance and Interaction

While some libraries house incredible and one of a kind resources, the vast majority contend with low user participation. Libraries are assisted by marketing efforts in promoting their services, special collections, digital services, events and many more to a wider audience. Research suggests that libraries that have good engagement practices can achieve user participation by as much as thirty to forty percent.

Marketing Plans of the Libraries

Any library looking to promote their services can implement the following marketing plans to better capture their audience:

1. Social Media Marketing

Major social media platforms like Facebook, Twitter, Instagram, and Linkedin provide a great avenue for libraries to market and sell to users. They can use these social media channels to do the following:

• Uploads of new book services, research materials, and Special Collection items.
• Advertising workshops, webinars and reading sessions.
• Engaging users through polls, quizzes, live sessions, etc.
• Working with known influencers who are active scholars and authors.

2. Content Marketing

Similarly, libraries can market and advertise by tailoring content to their audience such as:

• Blogs on research and written documents as well as digital literacy.
• How to use a database and citation management tool video tutorials.
• Podcasts with interviews with an author, librarian, and scholar.

3. Email Marketing

Regular newsletters can keep users updated about:

• New acquisitions and promoted books.
• Library events and training sessions.
• Research grants and scholarships.
• Special promotions or free access to premium materials.

4. Community Engagement and Partnerships

Libraries may partner with schools, universities, research centers, and local bodies to:

• Coordinate literacy activities and digital literacy workshops.
• Carry out outreach programs for poor communities.
• Collaborate with publishers and writers for book releases and author meetups.
• Offer internship and volunteer opportunities to students.

5. Personalization and User Experience Enhancement

Libraries can enhance user engagement through:

• Personalized book recommendations based on borrowing history.
• Online book clubs and discussion forums.
• AI-powered chatbots for instant research assistance.
• Gamification features such as reading challenges and leaderboards.

Digital Marketing Tools for Libraries

1. Library Websites

An effective, user-friendly library website must offer:

• Online catalogs and search capabilities.
• Digital repositories and open-access materials.
• Virtual help desks and live chat support.
• AI-driven search assistants for better navigation.

2. Online Catalogs and Databases

Granting remote access to catalogs and databases enables users to:

• Browse and book online.
• Access research papers and e-journals.
• Enjoy inter-library loan services.

3. Social Media Analytics

Through the analysis of engagement metrics on social media, libraries can:

• Discover user preferences and customize content accordingly.
• Track campaign effectiveness.
• Enhance outreach efforts.

4. Search Engine Optimization (SEO)

Search engine optimization of web content guarantees improved search engine listing. Libraries can leverage:

• Relevant keywords to enhance search rankings.
• Metadata tagging of digital collections.
• Structured data to improve discoverability.

Conclusion

Marketing libraries in the digital age is not only a choice but a compulsion. Libraries have to implement contemporary marketing strategies in order to vie with digital substitutes, connect users positively, and prove their applicability. By taking advantage of digital technologies, social media, content marketing, and collaborative partnerships, libraries can maximize their exposure and service coverage. Indian libraries, specifically, need to keep up with national plans and implement creative strategies to be meaningful in the information age. The research in future should be on AI-based marketing in libraries, augmented reality in library experiences, and blockchain-based applications for security of library transactions.

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Moonlighting Practices Among Degree College Teachers in Unaided And Self-Financed Colleges in Thane and Mumbai

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Abstract

Moonlighting among educators has become a prevalent phenomenon, particularly in unaided and self-financed colleges. This study explores the moonlighting practices of degree college teachers in Thane and Mumbai, focusing on the scope, nature, and underlying divers for engaging in secondary employment. The study attempts to understandkey factors such as financial necessity, professional development, and personal aspirations that drive teachers to pursue additional work outside their primary teaching roles. It also examines the challenges faced, including time management, work-life balance, and stress, and evaluates the impact of moonlighting on teaching effectiveness and institutional functioning. Using statistical tools such as correlation, regression, and Chi-square, the study identifies relationship and insights into this rampant trend. The findings reveal significant implications for teachers, students, and institutional policies, offering commendations for better management of dual responsibilities.

Keywords: Moonlighting, work-life balance, freelancing, teaching effectiveness rampant

INTRODUCTION

Moonlighting refers to the practice of taking on a secondary job or engaging in additional work outside of one's primary employment. It is a growing trend across various professions as individuals strive to meet financial demands, enhance professional growth, or pursue personal interests. The term moonlightinginitiates from the idea of working under the light of the moon, meaning after-hours work beyond one's regular duties.

In today's dynamic economy, moonlighting has gained significant attention among varied professionals, including educators. Educators may engage in secondary activities such as tutoring, consulting, freelancing, or entrepreneurial ventures to supplement their income and explore new opportunities. Among degree college teachers, particularly in unaided and self-financed colleges, this phenomenon is increasingly prevalent due to changing economic conditions and the need for supplementary income. In cities like Thane and Mumbai, where the cost of living is high, educators often resort to moonlighting to meet financial demands, enhance professional skills, or pursue personal interests. It also presents challenges like Time management, stress, and potential conflicts of interestwhich impacts the quality of work in both primary and secondary roles. Additionally, the ethical and legal implications of moonlighting often spark debates within organizations and industries.

REVIEW OF LITERATURE

1. Akintayo, D. I. (2010), "Work-Family Role Conflict and Organizational Commitment of Industrial Workers in Nigeria" focuses on industrial workers, and highlights how moonlighting creates role conflicts, which could be generalized to other professions, including teaching, with implications for institutional productivity.
2. Carson, D., &Bedeian, A. G. (1994), "Career Commitment and Moonlighting: A Critical Evaluation of Their Relationship" examines the relationship between career commitment and moonlighting, suggesting that individuals with higher career aspirations may moonlight to gain additional skills or experience.
3. Choudhary, R., & Banerjee, A. (2020), "Moonlighting: Causes and Consequences in the Education Sector" explores the growing prevalence of moonlighting among educators in India, focusing on financial, professional, and personal factors. The authors highlight the adverse effects on teaching effectiveness and discuss institutional perspectives on moonlighting policies.
4. Khan, M. A. (2017), "Moonlighting Among Professionals: A Global Perspective" provides an international overview of moonlighting trends across various professions, including education. It emphasizes the socio-economic factors influencing moonlighting and its impact on primary job performance.
5. Patel, P., & Desai, R. (2015), "Secondary Employment: Implications for Work-Life Balance in the Education Sector" discusses the work-life challenges faced by teachers engaging in moonlighting and how it affects their primary job performance and personal lives.
6. Rajput, N., & Sharma, K. (2019) – "Institutional Policies on Moonlighting: A Case Study of Indian Educators" discusses how institutional policies can either support or discourage moonlighting and the role of clear guidelines in mitigating potential conflicts of interest among teachers.

7. Sharma, V. (2021), "Moonlighting and Teaching Quality in Indian Colleges: A Mixed-Method Study" evaluates how moonlighting affects teaching effectiveness and student outcomes, focusing on unaided and self-financed colleges in metropolitan areas.
8. Singh, S., & Agarwal, R. (2018), "Financial Constraints and the Rise of Moonlighting Among Teachers in Urban India" investigates the financial pressures faced by educators in urban areas like Mumbai, showing how economic instability pushes teachers toward moonlighting for supplemental income.

SIGNIFICANCE OF THE STUDY

This study highlights the financial challenges faced by degree college teachers in unaided and self-financed colleges, particularly in metropolitan areas like Thane and Mumbai. It explores moonlighting as a coping mechanism for insufficient primary income while examining its impact on teaching quality, work-life balance, and professional growth. By identifying the challenges of dual responsibilities, such as stress and time management, the research provides valuable insights into teachers' well-being and their ability to perform effectively. It also informs educational institutions about the implications of moonlighting, enabling better policy-making around compensation, workload, and support systems. Additionally, the study contributes to understanding how moonlighting trends affect both educators and students, offering practical recommendations for creating sustainable working conditions. This research bridges a critical gap in literature by focusing on educators in unaided and self-financed colleges, an underexplored yet essential segment of the education sector.

OBJECTIVES OF THE STUDY

1. To examine the prevalence of moonlighting practices among degree college teachers in Thane and Mumbai.
2. To identify key motivations and challenges associated with moonlighting, such as financial necessity, stress, and work-life balance.
3. To evaluate the impact of moonlighting on teaching effectiveness and job performance.
4. To explore teachers' and institutions’ perceptions and attitudes toward moonlighting.
5. To provide recommendations for balancing dual responsibilities and improving institutional policies.

HYPOTHESES OF THE STUDY

1. H01: There is no significant association between age group and perception of moonlighting.
2. H02: There is no significant association between gender and perception of moonlighting.
3. H03: There exists no correlation between perception of moonlighting in context of teaching career and its effect on teaching effectiveness.
4. H04: There exists no relationship between challenges faced due to moonlighting and its effect on job performance.
5. H05: There exists no difference between teaching experience and challenges faced due to moonlighting.

OVERVIEW OF THANE AND MUMBAI

Thane and Mumbai, a lively metropolitan area, are known for their high cost of living and dynamic work environments, with Mumbai being India's financial capital and Thane emerging as a major suburban hub. Both cities host a mix of educational institutions, including unaided and self-financed colleges, which often struggle to provide competitive salaries to their teaching staff. In this context, moonlighting has become a common practice among degree college teachers. Many teachers take up secondary employmentsuch as tutoring or freelancing, to supplement their incomes and meet financial demands. The prevalence of moonlighting highlights the socio-economic realities faced by educators in urban settings.

RESEARCH METHODOLOGY

This study adopts a descriptive research design and includes the following key aspects:

Population- degree college teachers working in unaided and self-financed colleges in Thane and Mumbai.

Sample- 152 respondents, using stratified random sampling (representation across various demographic and professional categories)

Data Collection: Primary data was collected through a structured questionnaire designed to including both closed-ended and Likert-scale questions. The secondary data was collected from reports, books, journals, bulletins, and other sources like online articles and newspapers, various published and unpublished literature and websites.

Variables: Independent Variables like Age, Gender, teaching experience, institutional location, and moonlighting hours. Dependent Variables: Challenges, perceptions, teaching effectiveness, and job performance.

Statistical Tools: Quantitative data was analysed using statistical methods, including descriptive statistics, chi-square tests for associations, Corelation analysis and non-parametric tests like the Kruskal-Wallis applied to explore relationships.

Ethical Considerations: Participants were informed about the purpose of the study and confidentiality of responses was maintained throughout the research process.

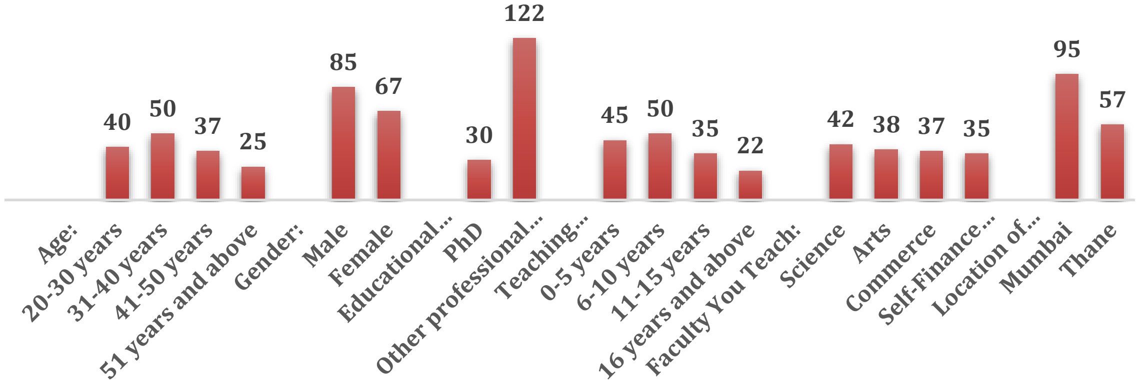
Limitations: The study is limited to teachers in Thane and Mumbai, focusing only on unaided and self-financed colleges, which may not fully generalize to other regions or types of institutions.

DATA ANALYSIS AND INTERPRETATION

Demographic Information

The demographic profile was instrumental in assessing the general characteristics of selected degree college teachers, considering factors such as age, gender, educational qualifications, faculty taught, and location.

Graph. 1- Demographic profile of the selected degree college teachers in Thane and Mumbai



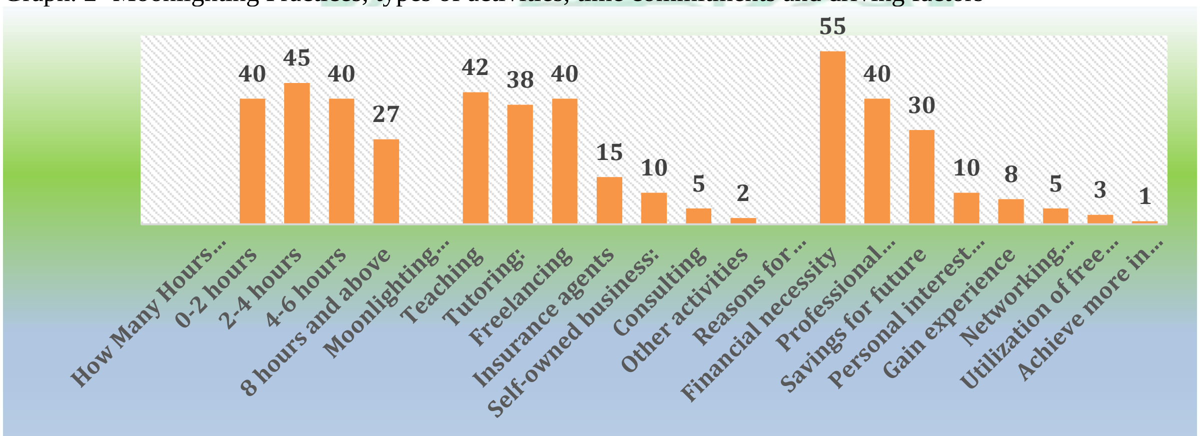
Source- Computed from primary data.

Interpretation: From the above graph it is revealed that Moonlighting is more prevalent among younger faculty, mainly those aged 31-40yearsi.e., 50 respondents and 20-30 years i.e., 40 respondents, with decline in older age groups. 85 respondents of Male faculty engagein moonlighting than female faculty i.e., 67 respondents. Most moonlighters i.e., 122 respondents have professional qualifications and 30 respondents possess PhDs degree, signifying specialized skills needed for secondary work. Facultywith 6-10 years i.e., 50 respondents and 0-5 years i.e., 45 respondents of experience moonlight the most, whereasitdeclines among senior faculty, 22 respondents of group 16+ years of experience moonlight due their administrative roles. Moonlighting is evenly spread across disciplinesdepicting faculty engaged with science i.e., 42 respondents, Arts i.e., 38 respondents, Commerce i.e., 37 respondents, and Self-Finance Courses i.e., 35 respondents representing it is not limited to a specific field.95 respondents work in Mumbai and 57 respondents in Thane, indicating higher participation in urban areas due to greater job opportunities

Moonlighting Practices

The above parameters aidto understand the extent, nature, and motivations behind moonlighting among degree college teachers. Analysing time commitment, types of activities, and driving factors provides insights into its impact on work-life balance, professional growth, and financial stability.

Graph. 2- Moonlighting Practices, types of activities, time commitments and driving factors



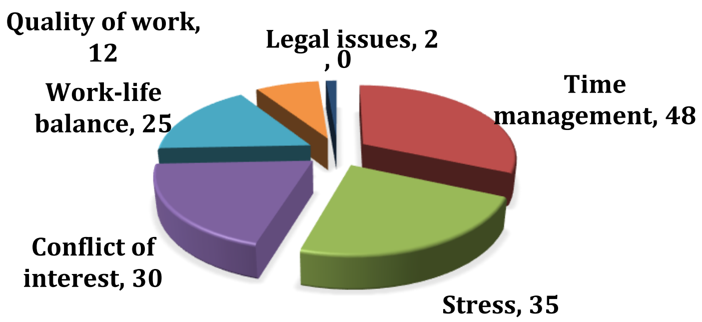
Source- Computed from primary data.

Interpretation: The data indicates most respondents engage in moonlighting as a supplementary activity, with 45 respondents spending 2-4 hours and 40 respondents dedicating 4-6 hours per week, while 27 spend more than 8 hours, indicating deeper involvement. Theactivities include teaching as stated by 42 respondents, freelancing 40 respondents, and tutoring 38 respondents, with 15 respondents in insurance,10 respondents have self-owned businesses and 5 respondentsengaged in consulting.55 respondents stated financial necessity is the primary driver, followed by professional development 40respondents, future savings 30 respondents, personal interest 10 respondents, gaining experience 8respondents, networking 5 respondents, and self-actualization 1 respondents. It helps faculty to leverage their expertise for financial and professional benefits.

Challenges Faced Due to Moonlighting

This constraintprovides insights into the teacher's professional struggleswhile balancing moonlighting and the need for better support systems.

Graph. 3- Challenges Faced Due to Moonlighting



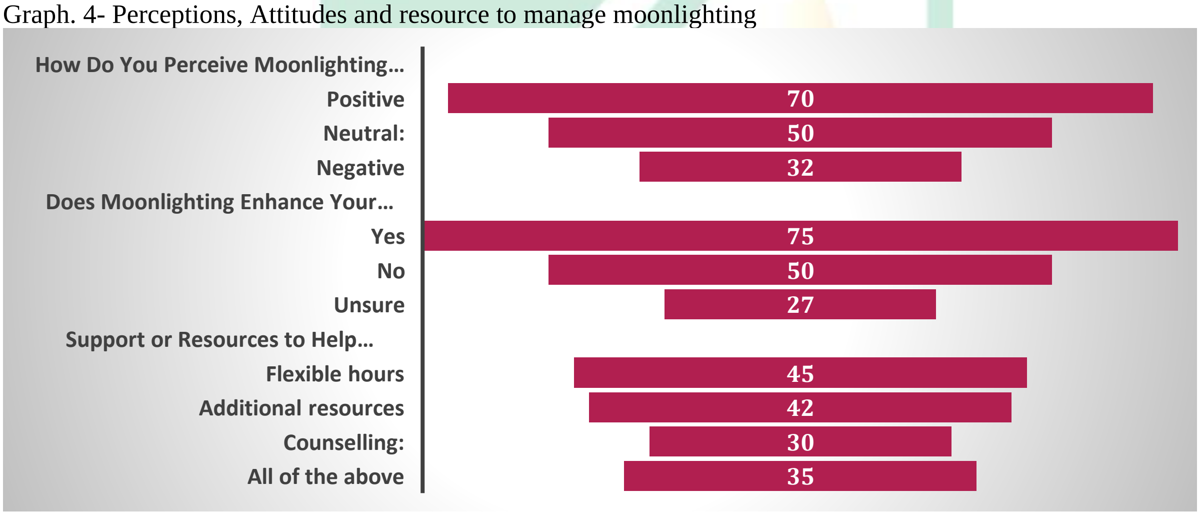
Source- Computed from primary data.

Interpretation: The biggest challenge for moonlighting faculty is time management as stated by 48 respondents due to multiple commitments. 35 respondents specified stress as major issue, affecting mental and physical well-being. Conflict of interest by 30 respondents while 25 respondents alleged work-life balanceis also impacted. 12 respondents opined that quality of work suffers due to fatigue, legal issues stated by 2 respondents. Moonlighting bids financial and professional benefits along with challenges related to time, stress, and ethics.

Perceptions and Attitudes

These criteria evaluate teachers' perceptions of moonlighting and its impact on their teaching effectiveness. The opinionand support needs provide insights into balancing dual roles without compromising job performance.

Graph. 4- Perceptions, Attitudes and resource to manage moonlighting



Source- Computed from primary data.

Interpretation: The data suggests that moonlighting is generally perceived positively, with 70 respondents viewing it favourably, while 50 are neutral and 32 see it negatively.

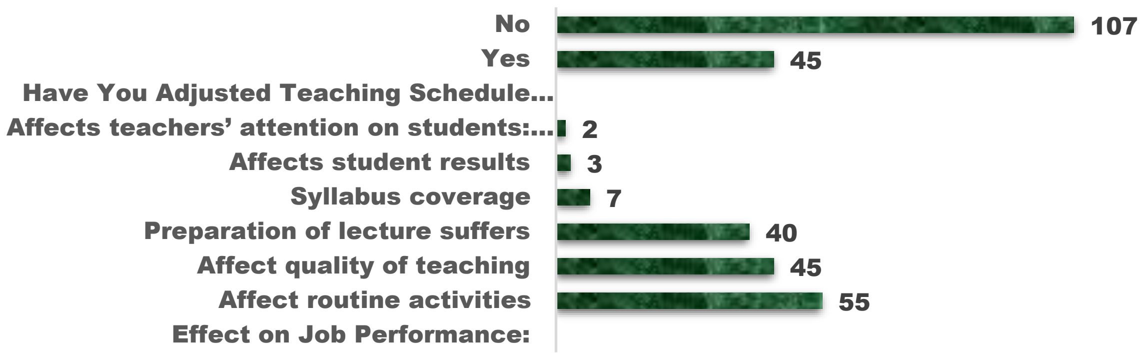
Regarding teaching effectiveness, 75 respondents believe moonlighting enhances their teaching through real-world exposure and experience, while 50 respondents disagree, citing fatigue and divided attention. 27 respondents remain unsure, indicating mixed experiences.

To balance moonlighting and teaching, 45 respondents seek flexible hours, 42 respondents with additional resources, and 30 respondents entails counselling. 35 respondents believe a combination of all these measures would be most effective.

Impact of Moonlighting

These criteria assist to evaluates how moonlighting effects teachers' job performance, including lecture preparation, student focus, and academic outcomes. Understanding these impact helps in developing strategies to balance secondary work without compromising teaching quality.

Graph. 5- Impact of Moonlighting on job performance



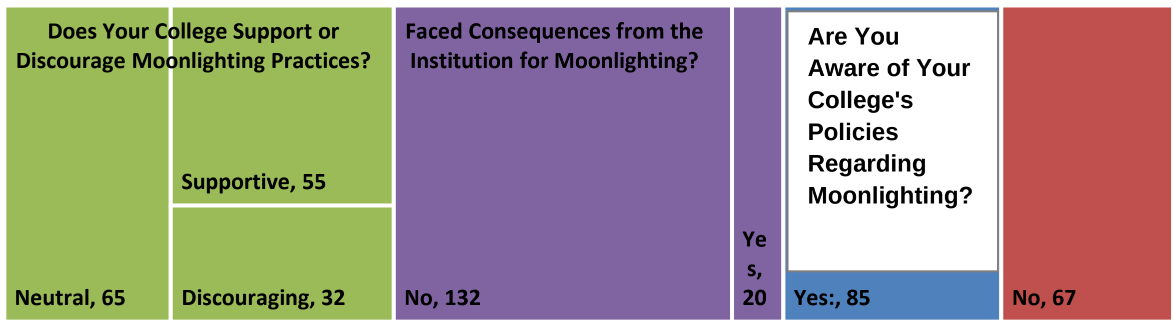
Source- Computed from primary data.

Interpretation: Moonlighting affects job performance, with 55 respondents reporting disruptions in routine activities and 45 respondents stating a decline in teaching quality. 40 respondents struggle with lecture preparation, while 7 respondents experience issues with syllabus coverage, 3 respondents with student results, and 2 respondents to attention on studentsindicating minimal direct impact on students. Despite these challenges, only 45 respondents have adjusted their teaching schedules, while 107 have not, suggesting that most faculty manage their responsibilities without major changes.

Institutional Policies

This criterion explores teachers' awareness of institutional policies, the college's stance on moonlighting, and any consequences faced. Understanding these factors helps assess how policies influence faculty decisions, job security, and work-life balance.

Graph. 6- Institutional Policies and Consequences faced



Source- Computed from primary data.

Interpretation: Awareness of moonlighting policies is mixed, with 85 respondents aware and 67 unaware. Institutional attitudes vary, with 55 respondents said that they are supportive, 65 respondents were neutral, and 32 respondents opined that they discourage moonlighting. Despite some restrictions, enforcement is lenient, as only 20 respondents faced consequences, while 132 did not. This indicates thatmost faculty engage in moonlighting without major institutional aftermaths.

Recommending Moonlighting to Colleagues depicted that itwas favoured by 65 respondents, while 50 oppose it, citing potential challenges. 37 remain undecided, indicating mixed views.

HYPOTHESES TESTING

Hypothesis of study was validated with the help of Chi-Square test, one-way ANOVA test and T-Test

1. In order to examine relationship between age group and **perception of moonlighting, the hypothesis proposed as:**

H01: There is no significant association between age group and perception of moonlighting.

HA1: There is significant association between age group and perception of moonlighting.

Table no: 1 Observed frequency table Table no: 2 Expected Frequency table

Age Group	Positive	Neutral	Negative	Total
20-30 years	18	12	10	40
31-40 years	25	15	10	50
41-50 years	15	12	10	37
51+ years	12	11	2	25
Total	70	50	32	152

Age Group	Positive	Neutral	Negative	Total
20-30 years	18.42	13.16	8.42	40
31-40 years	23.03	16.45	10.53	50
41-50	17.04	12.17	7.79	37

years				
51+ years	11.51	8.22	5.26	25
Total	70	50	32	152

Source- Computed from primary data.

Degrees of Freedom: (4−1)(3−1) =6(4-1) (3-1) = 6

The test statistic χ^2 equals **4.5853**,p-value: 0.598 (from chi-square distribution)

Conclusion: Since the p-value (0.598) is greater than 0.05, we fail to reject the null hypothesis. This indicates that there is no significant association between age group and perception of moonlighting

2. In order to examine relationship between gender and **perception of moonlighting, the hypothesis proposed as:**

H02: There is no significant association between gender and perception of moonlighting.

HA2: There is significant association between gender and perception of moonlighting.

Table no: 3 Observed frequency table Table no: 4 Expected Frequency table

Gender	Positive	Neutral	Negative	Total
Male	40	30	15	85
Female	30	20	17	67
Total	70	50	32	152

Gender	Positive	Neutral	Negative	Total
Male	39.14	27.96	17.89	85
Female	30.86	22.04	14.11	67
Total	70	50	32	152

Source- Computed from primary data.

Degrees of Freedom: (2−1) (3−1) =2(2-1) (3-1) = 2

The test statistic χ^2 equals **1.4422**, p-value: 0.486 (from chi-square distribution).

Conclusion: p-value (0.486) is greater than the significance level (0.05). This means we fail to reject the null hypothesis. This indicates that there is no significant association between gender and perception of moonlighting.

3. In order to examine correlation between perception of moonlighting in context of teaching career and its effect on teaching effectiveness, the hypothesis proposed as:

H03: There exists no correlation between perception of moonlighting in context of teaching career and its effect on teaching effectiveness.

HA3: There exists correlation between perception of moonlighting in context of teaching career and its effect on teaching effectiveness.

Table no: 5 Perception of moonlighting in context of teaching career and its effect on teaching effectiveness.

How Do You Perceive Moonlighting in the Context of Your Teaching Career?	Does Moonlighting Enhance Your Teaching Effectiveness?
70	75
50	50
32	**27**

Source- Computed from primary data.

Table no:6 Outcome of Correlation-test, using T(df:1) distribution (two-tailed)

Parameter	Value
Pearson correlation coefficient (r)	**1**
r^2	1
P-value	0.004027
Covariance	456.3333
Sample size (n)	3
Statistic	158.0785

Source- Computed from primary data.

Correlation Analysis Results: Pearson Correlation Coefficient (rr) = 0.99998**,** p-value = 0.004

Interpretation: The correlation coefficient of 0.99998 indicates an almost perfect positive correlation between perception of moonlighting in context of teaching career and its effect on teaching effectiveness. The p-value (0.004) is less than 0.05, meaning the correlation is statistically significant.

Conclusion: This suggests that as teachers perceive moonlighting in context of teaching career more positively, they also believe it enhances their teaching effectiveness.

4. In order to examine correlation between perception of moonlighting in context of teaching career and its effect on teaching effectiveness, the hypothesis proposed as:

H04: There exists no relationship between challenges faced due to moonlighting and its effect on job performance.

HA4: There exists relationship between challenges faced due to moonlighting and its effect on job performance.

Table no: 7 Challenges faced due to moonlighting and its effect on job performance

Challenges Faced Due to Moonlighting	Effect on Job Performance:
48	55
35	45
30	40
25	7
12	3
2	2

Source- Computed from primary data.

Table no: 8 Outcome of Correlation-test, using T(df:1) distribution (two-tailed)

Parameter	Value
Pearson correlation coefficient (r)	**0.9049**
r^2	0.8188
P-value	0.01314
Covariance	355.8667
Sample size (n)	6
Statistic	4.2516

Source- Computed from primary data.

Correlation Analysis Results: Pearson Correlation Coefficient (rr) = 0.905, p-value = 0.013

Interpretation: The correlation coefficient of 0.905 indicates a strong positive relationship between challenges faced due to moonlighting and its effect on job performance. Since the p-value (0.013) is less than 0.05, this correlation is statistically significant.

Conclusion: As the challenges faced due to moonlighting increase, the negative effect on job performance also increases significantly.

5. In order to examine correlation between perception of moonlighting in context of teaching career and its effect on teaching effectiveness, the hypothesis proposed as:

H05: There exists no difference between teaching experience and challenges faced due to moonlighting.

HA5: There exists difference between teaching experience and challenges faced due to moonlighting.

Kruskal-Wallis Test- a non-parametric statistical test used to determine if there is a significant difference between three or more independent groups based on ranked data.

Table no:9 Teaching experience and challenges faced due to moonlighting.

Teaching Experience	Time Management	Stress	Conflict of Interest	Work-Life Balance	Quality of Work	Legal Issues
0-5 years	15	12	8	6	4	0
6-10 years	18	10	12	8	2	0
11-15 years	10	8	6	6	4	1
16+ years	5	5	4	5	2	1

Source- Computed from primary data.

Table no: 10 Outcome ofKruskal-Wallis Test Results, using Chi-Square(df:5) distribution (right-tailed)

	Time Management	Stress	Conflict of Interest	Work-Life Balance	Quality of Work	Legal Issues
Normality	0.9965	1	0.9945	0.5602	0.06164	0.06164
Median:	12.5	9	7	6	3	0.5
Sample size (n):	4	4	4	4	4	4
Rank sum (R):	77.5	69	60.5	56	27	10
R^2/n:	1501.5625	1190.25	915.0625	784	182.25	25

Source- Computed from primary data.

Kruskal-Wallis Test Results

H-statistic = 17.1188 which is not in the 95% region of acceptance, **p-value** = **0.00428**

Conclusion: Since p-value = 0.00428< 0.05, we reject the null hypothesis. Hence, we Conclude that the distribution of challenges faced due to moonlighting significantly differ across teaching experience groups.

Table. 11 Summary of the statistical analysis based on 152 respondents:

Hypothesis	Test	Statistic Value	p-value	Significance
H01	Chi-Square Test	4.5853	0.598	There is no significant association between age group

				and perception of moonlighting.
H02	Chi-Square Test	1.4422	0.486	There is no significant association between gender and perception of moonlighting.
H03	Correlation-test	0.99998	0.004	There exists correlation between perception of moonlighting in context of teaching career and its effect on teaching effectiveness.
H04	Correlation-test	0.905	0.013	There exists relationship between challenges faced due to moonlighting and its effect on job performance.
H05	Kruskal-Wallis Test	17.1188	0.00428	There is a significant difference teaching experience and challenges faced due to moonlighting.

FINDINGS

Moonlighting is more common among younger faculty of age group 20-40 years, particularly those with 6-10 years of experience. Male faculty members and those with professional qualifications engage more frequently. Most spend 2-6 hours weekly on activities like teaching, freelancing, and tutoring, with fewer involved in business, consulting, or insurance. Financial necessity is the main motivation, followed by professional growth and future savings. Other reasons include personal interest, experience, and networking, though these are less significant. Key challenges include time management, stress, conflicts of interest, and work-life balanceand very few reported to decline in work quality. Moon lighting primarily affects routine activities, followed by teaching quality, with some reported difficulties in lecture preparation. While few cite issues with syllabus coverage, student results, or attention on students. Most faculty are aware of institutional moonlighting policies but remain neutral about institutional support. Enforcement is generally lenient, with few facing consequences. Overall, moonlighting is viewed positively, with many faculty believing it enhances teaching and encouraging colleagues to participate.

CONCLUSIONS AND SUGGESTIONS

Moonlighting is widespread among degree college teachers in unaided and self-financed colleges in Thane and Mumbai, driven by financial necessity, professional growth, and future savings. While it helps some enhance skills and gain experience, others face challenges. Institutions can support teachers by offering flexible work hours, professional development, and financial aid. Clear policies, workload reduction, and in-house income opportunities can ease difficulties. Stress management and time optimization programs, along with regular feedback, can ensure teaching quality remains unaffected. Balanced moonlighting policies can align institutional expectations with teachers' needs. These measures create a supportive environment, helping educators manage dual roles while maintaining high teaching standards.

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Role of AI in Creating an Immersive Retail Experience

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Abstract

Artificial intelligence (AI) is rapidly transforming retail by enabling immersive, personalized, and seamless customer experiences. This research paper examines the role of AI in creating an immersive retail environment by integrating technologies such as virtual reality (VR), augmented reality (AR), chatbots, and personalized recommendation systems. The objective of the paper is to evaluate AI's impact on customer engagement, to measure customer immersion and satisfaction with AI, to analyse benefits and challenges in retail operations with AI and to suggest recommendations for retailers. Primary data was collected from three hundred and seventy-five(375) consumers who had recently experienced AI-enhanced retail environments. The results indicate a statistically significant positive impact of AI on customer immersion in retail settings. The customers are attracted to stores which incorporate AI into their buying experience and it helps retailers to build customer loyalty. The paper concludes that AI-driven retail strategies can foster deeper customer engagement and provide actionable insights for retailers.

Keywords: Artificial intelligence, immersive retail, augmented reality, virtual reality, customer engagement

1. Introduction

In today's competitive retail environment, customer experience has emerged as a critical differentiator for success in the market. Retailers are increasingly investing in technologies that provide not only convenience and efficiency but also an immersive experience that engages consumers on multiple levels. Artificial intelligence (AI) has become a transformative force in retail today, powering innovations from chatbots that deliver personalized customer service to augmented reality (AR) applications that allow consumers to virtually try products before purchase. These AI-driven solutions are redefining the retail experience by merging the physical and real world. They arecreating an environment where customers can interact with brands in an innovative ecosystem.

The concept of immersion in retail refers to an environment that deeply engages a consumer's senses, emotions, and cognitive processes. An immersive retail experience typically impacts interactive technologies that create a sense of involvement beyond traditional shopping methods. AI technologies such as machine learning, natural language processing, and computer vision contribute to creating an immersive environment by analysing customer data and predicting consumer behaviour, thereby enabling highly personalized interactions.

2. Objectives

1. To evaluate AI's impact on customer engagement.
2. To measure customer immersion and satisfaction with AI.
3. To analyse benefits and challenges in retail operations.
4. To suggest recommendations for retailers.

3. Methodology

A cross-sectional survey design was used to collect primary data from consumers who had recently interacted with AI-enhanced retail environments. A structured questionnaire was given to respondents to assess the perceived level of immersion and overall satisfaction with AI-driven retail experiences. The primary data was collected from three hundred and seventy-five (375) customers through the questionnaire method. The age of the participants ranged from 18 to 50 years and Likert Scale was used to capture their experience. The retail experiences that were included in the research are visits to stores with AR applications, interactive digital kiosks, and AI-powered customer service chatbots.

4. Hypothesis

H_0: There is no significant difference in the immersive experience of retail environments with or without AI integration.

H_1: The integration of AI in retail environments significantly enhances the immersive retail experience.

5. Review of Literature

The integration of AI into retail has been a subject of growing academic and industry interest over the past decade. Early research focused on the technological advancements that AI brought to retail logistics and inventory management **(Verhoef, Kannan, & Inman, 2015).** However, more recent studies have shifted focus toward customer experience and the immersive potential of AI-enhanced technologies.

Pantano, Pizzi, Scarpi, and Dennis (2020) examine the impact of the COVID-19 pandemic on the retail sector, highlighting both challenges and strategic adaptations. Their study emphasizes how the pandemic accelerated the shift toward digitalization, forcing retailers to adopt innovative technologies such as artificial intelligence (AI), contactless payments and e-commerce solutions to sustain operations. The researchers discuss how consumer behaviour evolved during the crisis, with an increased preference for online shopping, home deliveries, and safety-driven purchasing decisions. They also explore how some retailers experienced growth by leveraging omnichannel strategies, while others struggled due to supply chain disruptions and reduced in-store traffic.

Grewal, Roggeveen, and Nordfält (2017) explore the future of retailing by examining key trends that shape consumer experiences and business strategies. Their research highlights the increasing role of technology, particularly artificial intelligence (AI), augmented reality, and automation, in enhancing customer engagement and streamlining retail operations. They emphasize the shift toward personalized shopping experiences driven by data analytics and machine learning, allowing retailers to predict consumer preferences and tailor marketing efforts accordingly.

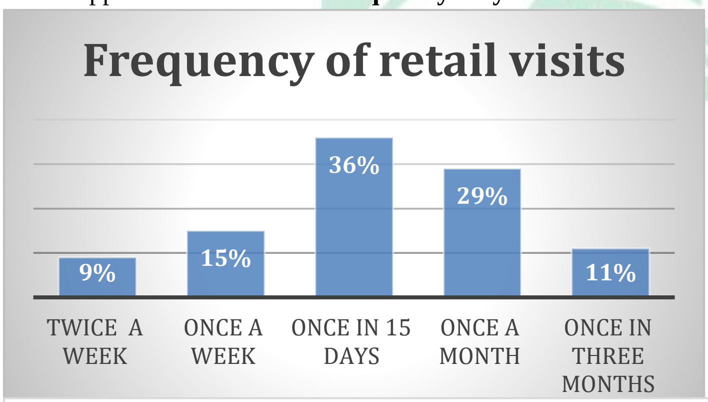
Shankar (2018) examines the transformative impact of artificial intelligence (AI) on the retail industry, highlighting how AI technologies are reshaping various aspects of retailing. The study discussed the integration of AI in enhancing customer experiences, optimizing supply chain managementand enabling personalized marketing strategies. Shankar emphasizes the importance of understanding AI's role in predicting consumer behaviour and preferences, which allows retailers to offer tailored recommendations and improve decision-making processes. In similar lines to these findings, studies by **Huang and Rust (2021)** indicate that the effectiveness of AI in retail largely depends on the ability to seamlessly integrate digital and physical experiences.

Cui, Lui, and Guo (2012) investigated the impact of online consumer reviews on new product sales, focusing on consumer electronics and video games. Analysing panel data from 332 new products over nine months, they found that the valence (positive or negative nature) of reviews and the volume of page views significantly influenced sales of search products, while the sheer volume of reviews was more critical for experienced products. Their findings also indicated that the effect of review on volume of sales was more pronounced in the early stages of a product's lifecycle and diminished over time. Negative reviews had a greater impact on sales than positive ones, emphasising the impact of negative reviews on customers.

6. Data Analysis

The primary data was collected from three hundred and seventy-five (375) customers through the questionnaire method. The age of the participants ranged from 18 to 50 years. From the data collected, 59% were females and 41% were males. The following findings are:

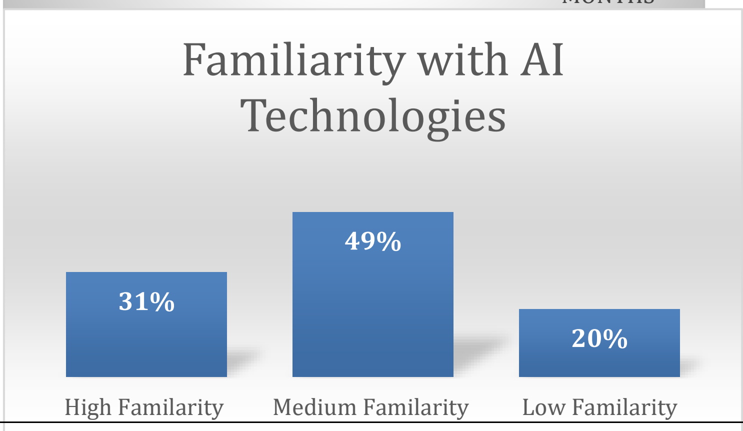
The shoppers were asked how **frequently they visit the retail stores**. Their responses are as follows:



It can be seen from the above graph that maximum respondents, i.e. 36% visit retail stores once in fifteen days, whereas 29% visit the retail stores once a month.

Source: Primary Data

The respondents were asked as to how familiar they are with AI technology. The response to the same is as follows:



It can be seen from the above graph that 49% of the respondents have medium familiarity with artificial intelligence technology, whereas 31% had high familiarity and 20% had low familiarity.

Source: Primary Data

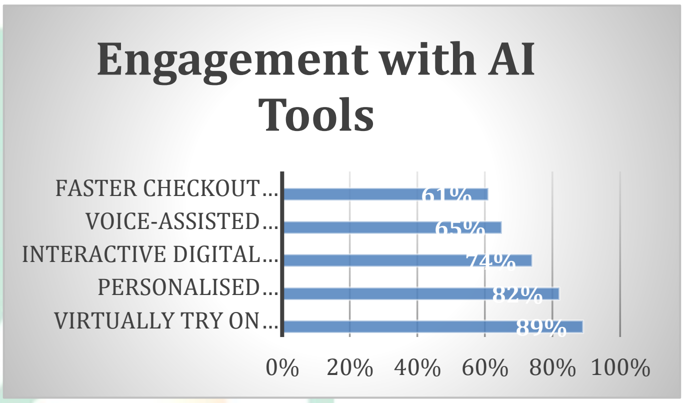
It can be seen from the graph that the most popular AI feature is virtual try on for products, followed by personalised recommendations.

Particulars	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
I find the AI retail environment very engaging	26%	39%	21%	10%	4%
AI features are very innovative	18%	30%	2%	29%	21%
Buying products using AI features is convenient	16%	55%	15%	9%	5%
Augmented reality provides a clear understanding about how the product looks like	33%	39%	11%	9%	8%
AI features enhance my shopping experience	29%	41%	11%	9%	10%
I like the AI experience, but it does not influence my buying decision	11%	13%	23%	44%	9%
AI features lower the uncertainty associated with the product	32%	31%	14%	13%	10%

Source: Primary Data

Customer immersion with AI.

It can be seen from the above table that 39% of the respondents find the retail environment very engaging. 30% of the respondents find the AI features innovative. 55% of the respondents stated that they find buying products convenient in the AI environment. 39% of the respondents agreed that augmented reality helps you understand the product better. 41% of the respondents agreed that AI features enhance the shopping experience. 44% disagreed that AI does not influence their buying decision. 32% of the employees strongly agreed that AI features lower the uncertainty associated with the product.



7. Testing of Hypothesis

The primary hypothesis for the study is:

H_1: The integration of AI in retail environments significantly enhances the immersive retail experience.

H_0:There is no significant difference in the immersive experience of retail environments with or without AI integration.

Descriptive statistics were used to summarize the demographic data and overall ratings of immersive experiences. To test the hypothesis, an independent samples t-test was performed comparing the mean immersion scores of consumers who experienced AI-enhanced retail environments against a control group (simulated using benchmark data from conventional retail settings available in previous literature). For the purpose of this study, the control mean was set at 3.0 (neutral on the Likert scale), based on similar studies where no advanced AI technology was present. A significance level of 0.05 was adopted.

The survey data revealed that the overall mean immersion score for consumers experiencing AI-driven retail environments was 4.1 (SD = 0.65). In comparison, the control benchmark mean of 3.0 was significantly lower. The independent samples t-test indicates a statistically significant difference between the two groups. These results support the hypothesis that AI integration significantly enhances the immersive retail experience.

Group	Mean Score	Standard Deviation (SD)
AI-Enhanced Retail Experience	4.1	0.65
Conventional Retail Benchmark	3.0	N/A

8. Benefits of AI in Retail

8.1. Better Engagement & Personalization

AI features like interactive screens and virtual try-ons make shopping more enjoyable. Maximum shoppers were of the opinion that AI tools contribute to creating a more vibrant shopping experience. Further personalization makes the experience more engaging, satisfying, and memorable.

8.2. Higher Purchase Intent & Satisfaction

The customers are able to see the product from different angles and get a clear idea about the product. Hence, AI-driven experiences increase the likelihood of purchases and overall customer satisfaction making shopping more seamless and enjoyable.

8.3. Innovative features

The customers find AI features to be innovative and these features contribute to increasing customer engagement. Further they give a modern feel to the retail stores which makes them look different from traditional retailers.

9. Challenges of AI in Retail

9.1. Perception as being complex for AI features

Customers who are not techno-savvy are not comfortable using AI features. They have a mental block in their mind towards them and consider them to be complex.

9.2. Technical issues

Sometimes there may be technical issues in using AI features which will result in wastage of time of the customers. This may cause irritation to the customers and will tarnish their buying experience.

9.3. Privacy concerns

One of the major challenges faced in using AI in retail are that the shoppers are concerned that their data should not be misused. They are worried about their personal information and would not like it to be distorted.

10. Conclusions

The conclusions that can be drawn from the research are as follows:

10.1 AI experience attracts customers to the products

Customers stated that the AI experience attracted them to the product and it helped them in making their buying decision process.

10.2 Customer satisfaction

AI created a strong customer engagement with the customers and they experienced satisfaction when they bought the product. This may turn into customer loyalty.

10.3 Creates loyal customers

Customers were more comfortable with stores that provided an AI ecosystem for their shopping. The customers stated that they were able to make the buying decision from the comfort of their home and with augmented reality used, it gave them an experience of being in the store.

10.4 AI features appreciated of Shoppers

The shoppers were highly appreciative about certain AI features. They are as follows:

Features	Percentage
Virtually try on products using AR	89%
Personalised recommendations	82%
Interactive digital screens	74%
Voice-assisted shopping	65%
Faster checkout with smart billing	61%

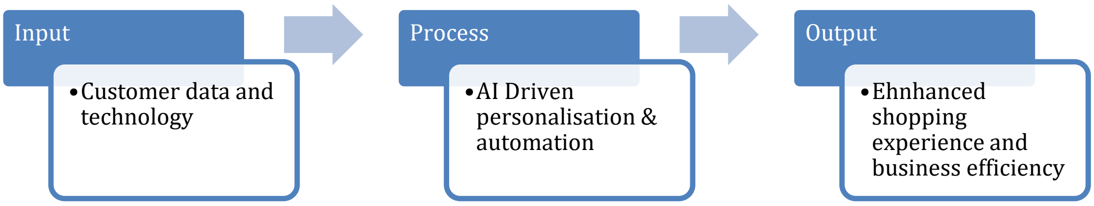
Source: Primary Data

10.5 AI features offer convenience

The customers were of the opinion that the AI features offered them convenience when they were shopping, be it online or offline. The customers were appreciative about augmented reality as they stated that it provided a clear understanding about the product.

10.6 Enhanced shopping experience

Customers stated that their shopping experience was enhanced when they used AI tools. They were convenient to use and provided clear information about the product being purchased.



It can be concluded that AI driven retail experience contributes to an enhanced shopping experience for the customers. Further it also ensures that more customers are influenced by the brand and creates brand loyalty.

11. Suggestions for Retailers

11.1 Strategic tool for retailers

It is important for retailers to adopt AI technologies as a strategic tool to differentiate their brand in a competitive market. Incorporating immersive AI features can serve as a key driver for customer retention and overall business growth.

11.2 Technological Innovations

Retailers should continue to experiment with emerging AI technologies, such as advanced sentiment analysis and machine learning-driven personalization, to further enhance the immersive experience. This will further the efforts of the organization in engaging with the customers.

11.3 Training and Development:

Retail employees and management should be trained on how to effectively integrate and leverage AI tools to maximize their benefits for both customer experience and operational efficiency.

11.4 Enhance privacy

Retailers must work on enhancing the security features for AI in retail. They must create an atmosphere where customers are completely at ease using AI tools and not concerned about privacy issues.

AI has emerged as a transformative tool in retail, capable of creating immersive environments that resonate with modern consumers. Continuous innovation in this direction will contribute to creating an ecosystem that encourages the growth of the retail stores as well as the brands that they sell.

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The Digital Payment Revolution in Urban India: A Statistical Analysis of Trends, Patterns, Challenges and Impact.

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Abstract
Online transactions have become an essential aspect of the modern era, providing convenience and efficiency. However, they also pose risks, including fraudulent transactions and sophisticated phishing attacks that exploit users' trust in online payment systems. This paper explores the background of online transactions, outlining their advantages and disadvantages. It also presents an analysis of survey data collected using a validated questionnaire, examining various factors influencing online transactions. The study highlights significant relationships and the direct or indirect impact of these factors on users.

Key words: Online transaction, convenient and speedy system, cyber fraud, data analysis, SPSS software, chi square test, significant association

Introduction

The huge population of India became a blessing for online transaction. As of October 2023, the country had around 112 crores mobile connections, 75crores Internet users, and about 70 crores smartphone users**[1]**. These numbers are growing rapidly. With about 20850 crores**[2]** real-time payment transactions, India ranked first in the world in terms of the number of transactions in 2023-24.

The first electronic banking service in India was initiated by Industrial Credit and Investment Corporation of India (ICICI) in 1996. Later other banks such as HDFC, IndusInd, and Citi bank launched online banking facilities in 1999. The trend continued to grow with increasingly more banks launching net banking services in India and the beginning of the digital transactions era in India started.

In 2008, the National Payments Corporation of India (NPCI)**[3]** was formed by the Reserve Bank of India (RBI) and Indian Banks' Association (IBA) to create a robust payment and settlement infrastructure in India. Since then, it has launched several products such as Aadhaar Enabled Payments System, Bharat Bill Payments System (BBPS), BHIM, and Cheque Transaction System.

Newer models are emerging rapidly; currently, there are around 10 different types of digital payment methods in India. These include:

- Banking Card – This was launched by the Central Bank of India in India in 1980, in the form of the first credit card. MasterCard was introduced in 1988, and until 1993, several PSU banks started issuing credit cards.
- Unstructured Supplementary Service Data (USSD) – The USSD functionality was launched in 2016. This is a mobile banking facility enabling users to use mobile banking without smartphones or an Internet connection.
- Aadhaar Enabled Payment Systems (AEPS) – This is a bank-led model which allows online interoperable financial inclusion transactions at point-of-sale (PoS) through the business correspondent of any bank using the Aadhaar authentication.
- Unified Payments Interface (UPI) – UPI was developed by NPCI in 2016; it facilitates peer-to-peer, person-to-merchant transactions.
- Mobile Wallet – This is a virtual wallet that stores payment card information on a mobile device.
- Bank Pre-Paid Card – Under the motto "Pay Now, Use Later," the pre-paid cards allow users to buy things with funds available in their cards.
- Point of Sale – Point of Sale (PoS) is a technological instrument provided by a Merchant Establishment (ME) to carry out the sale of goods or services to customers in a cashless environment.
- Internet Banking – This is an online banking method that enables customers of a bank or financial institution to carry out transactions through a portal.
- Mobile Banking – This is a service provided by banks and financial institutions to carry out financial transactions through a mobile device.

- Micro ATM – These are portable devices allowing banking transactions through card swipe machines.

In order to transform India into a digitally empowered society and knowledge economy, the Government of India launched Digital India programme in 2015. The programme focuses on three main vision areas: digital infrastructure as a core utility to every citizen, governance and services on demand, and digital empowerment of citizens**[4]**. Through the programme, the government wants to ensure the availability of high-speed Internet, provide mobile phones and bank accounts to every citizen, ensure availability of services in real-time from online and mobile platforms, make financial transactions electronic and cashless, and ensure digital literacy and availability of digital resources across the country.

Advantages of digital transactions

Convenience: People can pay for goods and services at any time of the day from any part of the world. It is easier to click a feature on our smartphone. We don't have to carry cash, get worried about theft or not having perfect change. Instead, we just need to remember a certain pin.

Speed: Transactions are processed rapidly, providing immediate confirmation and reducing processing time compared to traditional methods. It saves a lot of time. People don't have to wait in lines, take time to write checks, wait for banks to clear their checks or wait for paper bills.

Security: Advanced encryption and security protocols ensure the safety of financial information during online transactions, minimizing the risk of unauthorized access and fraud.

Disadvantages of Online Payments

Technical problems: Online payments, just like any other software, is dependent on technology. Though tech maintenance operations are announced in advance and usually take place during the night, sometimes, it can cause frustration among online shoppers.

Password threats: If you are a registered user with a website who uses online payments pretty often, there are high chances that the online portal can have access to your personal information or bank account details. Though most transactions use OTPs (one-time passwords), the need for password protection arises in such situations.

Cyber fraud: Just as more and more people are shifting to online payments and preferring them over other traditional forms of payment, cybercrimes are increasing proportionately. ID thefts, phishing attacks, and database exploits are becoming more common. In order to prevent these and increase security, a lot of payment-security softwarehave been installed and eventually incur a lot of costs.

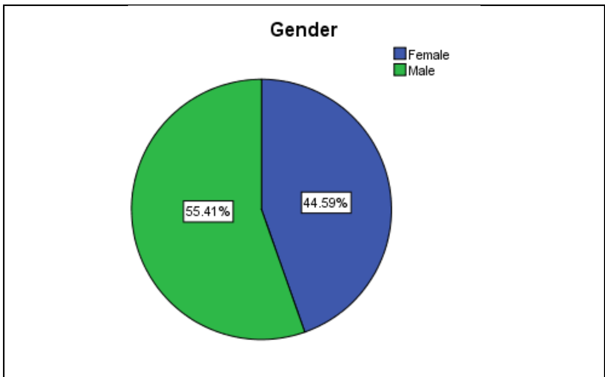
Technological illiteracy: One of the main disadvantages of online payments is the technological illiteracy among many people, especially the older generation. Since they don't have enough knowledge on how to go about using technology or smartphones, they refrain from using online payment methods. A lot of them also fear the complexities of it and continue to use traditional methods of payment. This is a huge drawback in developing countries like India.

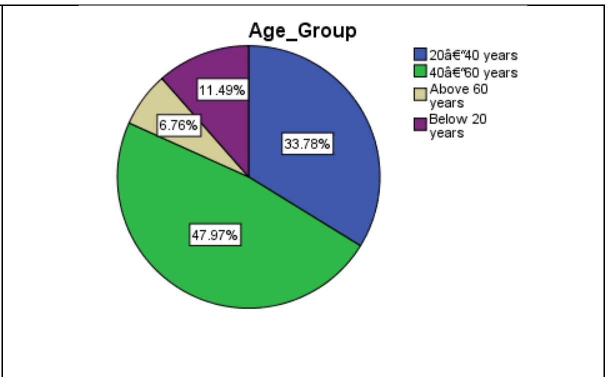
Research Methodology

An online survey was conducted using Google Form to collect data on online transactions. A structured questionnaire was designed to gather information from participants. A total of 148 individuals participated in the survey. The questionnaire yielded nominal and ordinal scale data, which were then analysed using SPSS software. The Non-Parametric Test Chi-Square was employed to test the hypothesis and determine significant association between variables.

Statistical Analysis and Finding:

A total of 148 respondents, primarily from Mumbai, participated in an online survey on India's online transaction system. The following findings are based on the statistical analysis of the collected survey data.

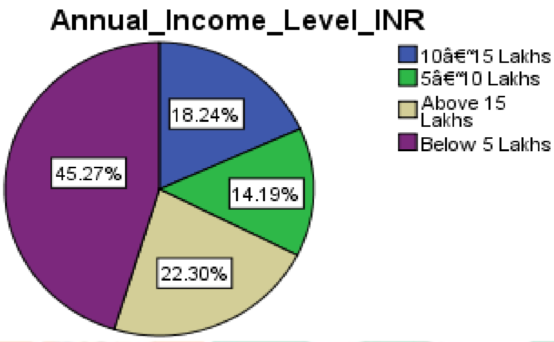




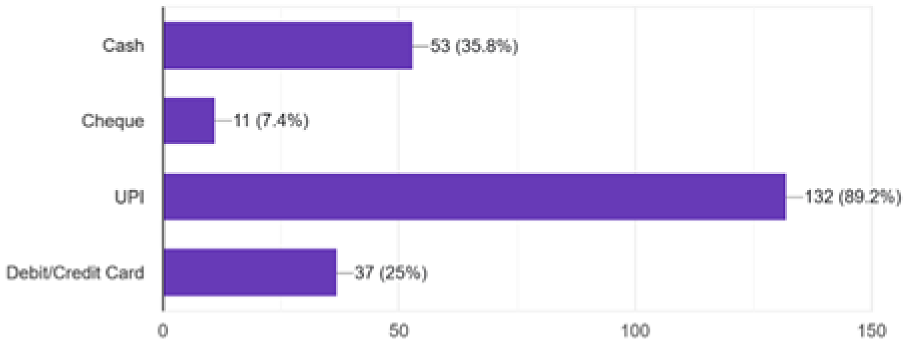
Occupation

Occupation	Frequency	Percent
Businessperson	4	2.7
Employed (Service)	79	53.4
Homemaker	7	4.7
Self-employed	13	8.8
Student	45	30.4
Total	148	100.0

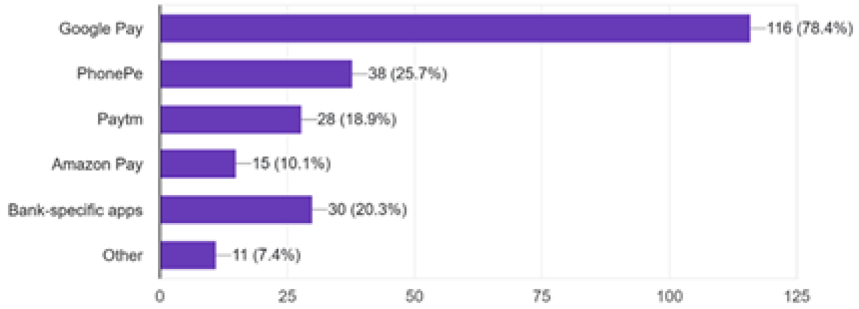
Annual Income Level (In INR)



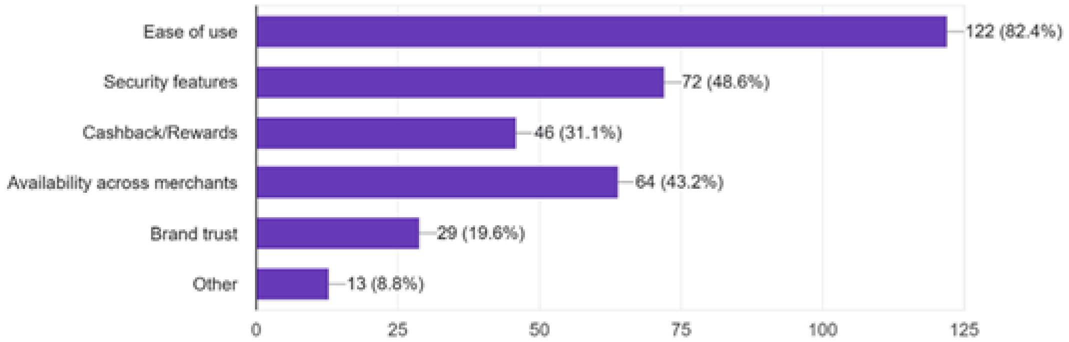
1. **Do you use online transactions for payments?**
   94.6 % participants agreed to use online transaction for payments.
2. **What device do you primarily use for online transactions?**
   91.9 % participants are using smartphone and 5.4 are using their laptop or computer for online transactions.
3. **According to you, what is the most popular method of transaction in India at present?** It is found that UPI is the most popular method of transaction in India.



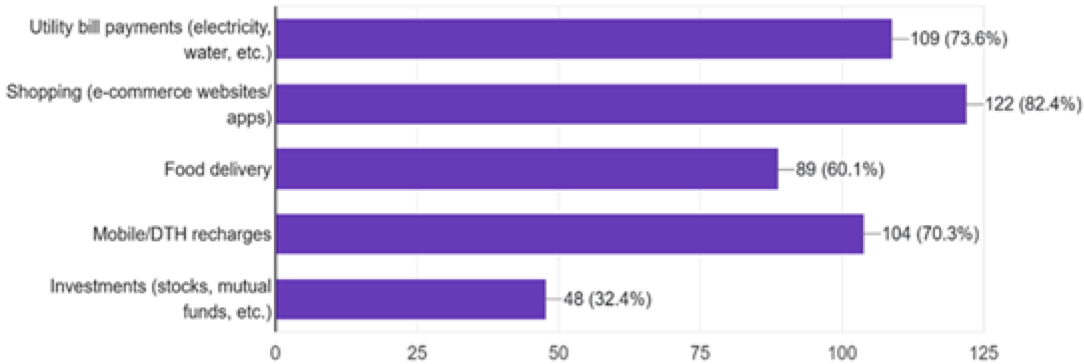
4. **How would you describe the process of setting up online transactions on your devices?** 87.8% of participants found setting up online transactions very easy, 11.5% found it somewhat difficult, and only 0.7% found it very difficult.
5. **How often do you perform online transactions?** 43.2% of participants perform online transactions daily, 39.9% frequently, 14.9% occasionally, while only 2% never use online transactions.
6. **Are you comfortable in using online transactions?** 93.9% of participants are comfortable using online transactions, while only 6.1% are not.
7. **What is your preferred online payment platform?** It is found that Google pay is most preferred platform for online payments.



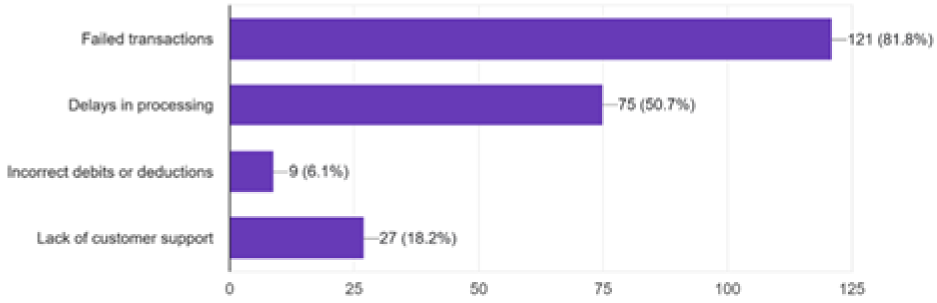
8. **What factors influence your choice of online payment platforms?** It is found that easy to use is the most influential factor for the choice of online payment platforms.



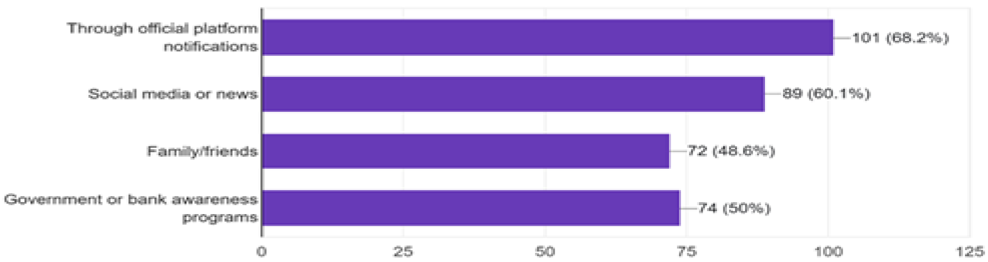
9. **What kind of transactions do you usually perform online? (Select all that apply)**
It has been observed that people primarily use online transactions for shopping, followed by utility bill payments, mobile or DTH recharges, food delivery, and finally, investment payments.



10. **Have you ever faced technical issues during online transactions?**
It has been observed that 71.6% of people occasionally face technical issues in online transactions, 9.5% face them frequently, while 18.9% have never encountered any issues.
11. **If you faced issues, what were the most common problems?**
It is observed that "failed transaction" is most common problem in online transactions.



12. **Do you feel online transactions help in budgeting your finances by easily tracking previous expenditures?**
    It is observed that 64.9% of people believe online transactions help in budgeting their finances, while 35.1% do not.
13. **Do you feel online transactions lead to uncontrolled spending?**
    It is observed that 70.9% of people believe online transactions lead to uncontrolled spending, while 29.1% do not.
14. **Do you think online transactions are risky due to digital fraud (e.g., phishing scams, ransomware attacks)?**
    It is observed that 79.1% of people consider online transactions risky, while 20.9% do not.
15. **Do you believe simple awareness can help mitigate risks associated with online transactions?**
    It is observed that 91.2 % people believe that simple awareness can help mitigate risks associated with online transactions.
16. **Do you think rural Indians and senior citizens are less familiar with technology and hesitant to use online transactions?**
    It is observed that 91.2 % people believe that rural Indian and senior citizens are less familiar with technology and also hesitant to use online transactions while 8.8 % denied it.
17. **Should the government take initiatives to educate people about online transactions, including their advantages and risks?**
    It is observed that 92.6 % people feel that Government should take initiatives to educate people about online transactions including advantages and risks.
18. **Do you check for security features (e.g., encryption, OTP verification) before performing online transactions?**
    It is observed that 74.3 % users always check for security features before performing online transactions.
19. **How satisfied are you with the security measures offered by online payment platforms?**
    It is observed that 20.9 % users of online transactions are very satisfied, 46.6 % are satisfied, 27.0 % are natural, 3.4 % are dissatisfied and 2.0 % are very dissatisfied with security measures offered by online payment platform.
20. **Would you recommend online transactions to others?**
    It is observed that 29.7 % users are agreed for highly recommendations, 63.5 % with some cautions while 6.8 % are not comfortable for recommending online transactions to others.
21. **Do you feel online transactions are environmentally friendly by reducing the need for physical receipts, cash, or cheques?**
    It is observed that 91.2 % people feel that online transactions are environmentally friendly by reducing the need for physical receipts, cash, or cheques.
22. **How do you stay updated about security practices for safe online transactions?**



Chi-Square Tests to test the association between various attributes at 10 % significance level.
Chi-square tests 1:To test

H_0: There is no significant association between Gender and using online transaction for payments by them.Against the alternative hypothesis
H_1: There is significant association between Gender and using online transaction for payments by them.
Since the p-value is 0.295, which is greater than the significance level of 0.10, the null hypothesis cannot be rejected at the 10 % significance level. Therefore, there is no significant association between gender and the use of online transactions for payments at the 10 % significance level.

Chi-square tests 2: To test
H_0: There is no significant association between Gender and frequency of performing online transaction for payments by them.Against
H_1: There is a significant association between Gender and frequency of performing online transaction for payments by them.
Since the p-value is 0.054, which is less than the significance level of 0.10, the null hypothesis can be rejected at the 10% significance level. This indicates a significant association between gender and the frequency of performing online transactions for payments at the 10% significance level.

Chi-square tests 3: To test
H_0: There is no significant association between Gender and their comfort in using online transaction for the payments by them. Against
H_1: There is significant association between Gender and their comfort in using online transaction for the payments by them.
Since the p-value is 0.039, which is less than the significance level of 0.10, the null hypothesis can be rejected at the 10 % significance level. This indicates a significant association between gender and comfort in using online transactions for payments at the 10 % significance level.

Chi-square tests 4: To test
H_0: There is no significant association between Gender and their thinking that online transactions are risky due to digital fraud (e.g., phishing scams, ransomware attacks). Against
H_1: There is a significant association between Gender and their thinking that online transactions are risky due to digital fraud (e.g., phishing scams, ransomware attacks)
Since the p-value is 0.006, which is less than 0.10, the null hypothesis can be rejected at the 10 % significance level. This indicates a significant association between gender and the perception that online transactions are risky due to digital fraud (e.g., phishing scams, ransomware attacks) at the 10 % significance level.

Chi-square tests 5: To test
H_0: There is no significant association between Age group and devices used by them for online transactions.Against
H_1: There is a significant association between Age group and devices used by them for online transactions.
Since the p-value is 0.098, which is less than 0.10, the null hypothesis can be rejected at the 10% significance level. This indicates a significant association between age group and the device used for online transactions at the 10% significance level.

Chi-square tests 6: To test
H_0: There is no significant association between Age group and methods of transactions used by them.Against
H_1: There is a significant association between Age group and methods of transactions used by them.
Since the p-value is 0.000291, which is less than 0.10, the null hypothesis can be rejected at the 10% significance level. This indicates a significant association between age group and the methods of transactions used at the 10% significance level.

Conclusions:
The responses were taken from various professional and students with different age groups and financial backgrounds. We find that most of the people prefer online transaction for everyday expenses through UPI using their smart phones irrespective of their age, profession and income. Maximum of them find that the whole system starting from installing till payment, it is very easy to deal. Some of them find that it helps us to make budget but many feel that it provokes to uncontrolled expense. But senior citizens or rural people still find the online transaction difficult. Also, people are worried about the digital fraud. So, there should be more initiative from government and non-government organisation to literate people for online transaction and its safety measure.

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Rural to Urban Migration in Navi Mumbai: A Socio-Economic Perspective

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Abstract:

The study titled "Rural to Urban Migration in Navi Mumbai: A Socio-Economic Perspective" explores the economic and social conditions of migrants across eight wards- Belapur, Nerul, Vashi, Turbhe, Koperkhairane, Ghansoli, Airoli, and Digha. Data was gathered from 80 respondents, with 10 samples from each ward, to ensure balanced coverage of migrant experiences. The research investigates the motivations behind migration, the types of employment secured, and the social transitions migrants undergo after settling in urban areas. Findings indicate that many migrants pursue better livelihoods and improved living standards, though significant challenges remain. These include unstable employment, overcrowded living spaces, and limited access to essential services such as healthcare and education. Economic progress varies across wards, influenced by factors like job availability and local infrastructure. The study concludes that while urban migration offers economic opportunities, the accompanying social struggles can hinder long-term stability. Policy measures aimed at improving employment conditions, affordable housing, and community-based support systems could enhance the quality of life for migrant families, contributing to a more balanced and sustainable urban experience in Navi Mumbai.

Keywords: Rural-Urban Migration, Socio-Economic Conditions, Urban Settlements, Migrant Communities, etc.

Introduction:

Rural to urban migration has become a defining feature of India's economic and social transformation. Navi Mumbai, designed as a satellite city to ease Mumbai's population pressures, has grown into a thriving hub attracting migrants from various rural regions. This movement is fueled by the hope of securing better job opportunities, improved living conditions, and access to essential services. The study covers eight wards — Belapur, Nerul, Vashi, Turbhe, Koperkhairane, Ghansoli, Airoli, and Digha — to understand how migrants adapt to the urban environment. Many arrive seeking economic stability and upward mobility, yet their journey often involves overcoming unstable jobs, limited housing options, and unequal access to healthcare and education. Migration brings both progress and hardship, reshaping the lives of those who relocate. The economic pursuits of migrants frequently intersect with social challenges, creating a complex reality that demands attention. This study aims to understand the economic conditions, living standards, and social adjustments of migrant families across Navi Mumbai.The findings can contribute to discussions on urban planning and policy reforms, offering insights into creating more inclusive opportunities that support the well-being and growth of migrant communities in the city.

Objectives:

1. To study the socio-economic conditions of rural migrants in Navi Mumbai across different wards.
2. To analyse the economic opportunities and social challenges faced by migrant families in their urban transition.

Hypothesis:

Null Hypothesis (H_0): There is no significant difference in the socio-economic conditions of rural migrants across the eight wards of Navi Mumbai.
Alternative Hypothesis (H_1): There is a significant difference in the socio-economic conditions of rural migrants across the eight wards of Navi Mumbai.

Research Methodology:

The study employs a combination of descriptive and analytical methods to understand the socio-economic conditions of rural migrants in Navi Mumbai. Primary data was collected through a structured survey conducted across eight wards Belapur, Nerul, Vashi, Turbhe, Koperkhairane, Ghansoli, Airoli, and Digha with 10 respondents from each ward, resulting in a total of 80 samples. The respondents were selected using a stratified random sampling technique to ensure representation from various socio-economic backgrounds. The survey included questions covering employment status, income levels, living conditions, access to education and healthcare, and social integration experiences. The data was analyzed using both quantitative and qualitative approaches. Quantitative analysis involved statistical tools such as percentage analysis, mean, and standard deviation to compare socio-economic patterns across wards. Qualitative insights were drawn from open-ended responses to capture personal experiences and social challenges faced by migrants. Secondary data sources, including census reports, government publications, and academic studies, were reviewed to support the primary findings and provide a broader context to the migration patterns observed.

Data collection methods:

A. Primary Data:

A structured questionnaire was designed to gather first-hand information from 80 respondents, with 10 samples selected from each of the eight wards — Belapur, Nerul, Vashi, Turbhe, Koperkhairane, Ghansoli, Airoli, and Digha.The questionnaire included both closed and open-ended questions, covering aspects like employment status, income levels, housing conditions, education, healthcare access, and social experiences.Data was collected through face-to-face interviews to ensure clarity in responses and to capture personal insights directly from the migrants.

B. Secondary Data:

Government reports, census data, and municipal records were examined to understand the broader migration trends and socio-economic patterns in Navi Mumbai.Published research papers, articles, and studies related to urban migration and socio-economic development were reviewed to support and compare the findings from primary data.

Sample size and selection:

The study focuses on understanding the socio-economic conditions of rural migrants across Navi Mumbai. To ensure balanced representation, a total of 80 respondents were selected, with 10 samples collected from each of the eight wards — Belapur, Nerul, Vashi, Turbhe, Koperkhairane, Ghansoli, Airoli, and Digha.

Sample Size:

Total sample size: 80 respondents

Distribution: 10 respondents per ward

Sampling Method:

- Stratified Random Sampling was employed to ensure representation from various socio-economic backgrounds within each ward.
- The population was divided into strata based on criteria such as occupation, income level, and type of residence (e.g., slum dwellers, chawl residents, or informal housing).
- Respondents were then randomly selected from each stratum to avoid bias and ensure a diverse cross-section of migrant experiences.

Analytical tools/ techniques:

The study applies a combination of statistical and qualitative techniques to interpret the socio-economic data collected from rural migrants across Navi Mumbai. The following methods were employed:

Descriptive Statistics:

Measures such as percentages, averages, and standard deviations were used to summarize data on income, employment, housing, and access to services. This helped identify patterns and variations in the socio-economic conditions of migrants across the eight wards.

Chi-Square Test:

Used to examine the relationship between categorical variables, such as employment type and ward location, or education level and income category. This helped determine whether observed differences across wards are statistically significant.

T-Test (Independent Samples):

Applied to compare means between two groups — for example, male and female migrants, or skilled versus unskilled workers — to assess whether their socio-economic outcomes differ meaningfully.

Content Analysis:

Qualitative responses from open-ended survey questions were reviewed to identify recurring themes, particularly around social challenges, aspirations, and barriers faced by migrants. This provided deeper context to the numerical findings.

Review of Literature:

Todaro (1976) proposed that rural migrants are driven by the prospect of better income and employment opportunities in urban areas, despite initial hardships. Studies by Kundu (2012) and Bhagat (2017) reinforced this view, showing that urban centers like Navi Mumbai attract migrants due to industrial growth and expanding service sectors, though many end up in low-paying, informal jobs. Deshingkar and Akter (2009) highlighted that migrants often face poor living conditions, inadequate access to healthcare, and educational barriers. In the context of Navi Mumbai, studies by Batra (2019) noted that despite the city's planned infrastructure, migrant families still face overcrowding and social marginalization in certain wards. Harris and Todaro (1970) argued that migration, while promoting urban growth, can also strain resources and services. More recent studies (Sharma, 2020) discuss how cities like Navi Mumbai must balance growth with inclusive policies to ensure migrant communities are integrated into the urban economy.

Data Analysis and Interpretation:

Table 1: Migration Patterns Across Navi Mumbai Wards

Ward Name	Total Migrants	Skilled Migrants (%)	Informal Workers (%)
Belapur	240	45%	55%
Nerul	210	48%	52%
Vashi	230	50%	50%
Turbhe	220	37%	63%
Koperkhairane	200	42%	58%
Ghansoli	190	40%	60%
Airoli	215	47%	53%
Digha	185	35%	65%

Source: Primary data collected by research.

The table presents a breakdown of migration patterns across eight wards in Navi Mumbai, focusing on the total number of migrants and their occupational classification into skilled and informal sectors. Belapur records the highest number of migrants at 240, with 45% engaged in skilled work and 55% in informal employment. Nerul follows with 210 migrants, showing a slightly higher proportion of skilled workers at 48%, leaving 52% in informal roles. Vashi exhibits a balanced distribution of 50% each for skilled and informal workers among its 230 migrants, suggesting a more even occupational split. Turbhe, with 220 migrants, reflects a distinct pattern, where only 37% are engaged in skilled work, while a significant 63% fall into the informal category. Koperkhairane and Ghansoli show similar trends, with 42% and 40% skilled workers, respectively, indicating a predominance of informal labor in these areas. Airoli presents a relatively higher proportion of skilled migrants at 47%, with 53% in informal work among its 215 migrants.Digha records the lowest number of migrants at 185, where only 35% are employed in skilled jobs, and 65% are in informal work, highlighting the area's reliance on less formal economic opportunities.The data suggests that wards with greater urban development and commercial infrastructure, such as Vashi and Nerul, attract a more balanced or higher-skilled workforce, while industrial or less developed regions, like Turbhe and Digha, exhibit a heavier concentration of informal employment.

Table 2: Housing Conditions

Ward	Own House (%)	Rented Chawl (%)	Slum Housing (%)	Average Rent (₹)
Belapur	20%	50%	30%	4,500
Nerul	25%	45%	30%	5,000
Vashi	30%	40%	30%	6,000
Turbhe	10%	40%	50%	3,500
Koperkhairane	15%	45%	40%	4,000
Ghansoli	12%	48%	40%	3,800
Airoli	18%	47%	35%	4,200
Digha	8%	42%	50%	3,200

Source: Primary data collected by research.

The table provides a detailed breakdown of housing patterns across eight wards in Navi Mumbai, highlighting the distribution of migrants across three housing types — own house, rented chawl, and slum housing — alongside the average monthly rent in each ward. Belapur shows that 20% of migrants reside in self-owned houses, while 50% live in rented chawls, and 30% in slum housing. The average rent stands at ₹4,500. Nerul reflects a slightly higher proportion of self-owned houses at 25%, with 45% living in chawls and 30% in slum housing, with a higher average rent of ₹5,000 — indicative of the area's semi-urban appeal. Vashi stands out with 30% of migrants having self-owned homes, the highest among the wards. 40% live in chawls, and 30% in slums. The average rent is notably higher at ₹6,000, suggesting a stronger economic standing and better infrastructure. Conversely, Turbhe and Digha reveal a more vulnerable housing situation.

Turbhe has only 10% in self-owned houses, 40% in rented chawls, and a significant 50% in slum housing, with an average rent of ₹3,500. Digha reflects a similar scenario, with 8% in self-owned houses and 50% in slum housing, marking the lowest average rent among all wards at ₹3,200. Koperkhairane and Ghansoli display a comparable pattern, with 15% and 12% in self-owned houses, while a large portion resides in chawls (45% and 48% respectively), and 40% in slum housing. The average rents are relatively moderate at ₹4,000 and ₹3,800. Airoli, with 18% of migrants in self-owned houses, 47% in rented chawls, and 35% in slum housing, reflects a mid-range rent at ₹4,200. The data underscores a clear socio-economic divide across these wards. Areas like Vashi and Nerul, with higher ownership rates and rent values, may indicate better living standards and access to infrastructure, while

Turbhe, Ghansoli, and Digha show a concentration of slum housing and lower rents, reflecting economic constraints and less formal housing opportunities.

Table 3: Access to Education and Healthcare

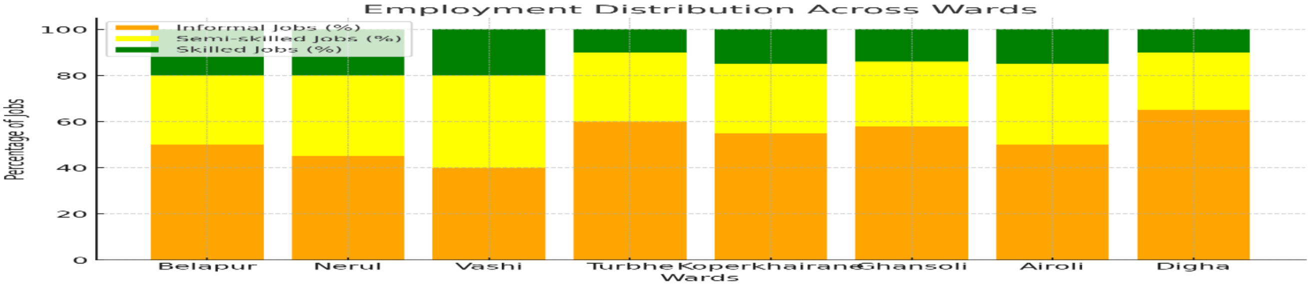
Ward	Children in School (%)	Access to Government Healthcare (%)	Access to Private Healthcare (%)
Belapur	80%	60%	40%
Nerul	85%	55%	45%
Vashi	88%	50%	50%
Turbhe	65%	70%	30%
Koperkhairane	72%	65%	35%
Ghansoli	68%	60%	40%
Airoli	75%	58%	42%
Digha	60%	75%	25%

Source: Primary data collected by research.

The table provides a comparative overview of educational access and healthcare facilities among migrant families across eight wards in Navi Mumbai. It highlights the percentage of children attending school and the distribution of healthcare access between government and private facilities in each ward. Belapur reports 80% of children attending school, with 60% of residents relying on government healthcare and 40% opting for private healthcare, reflecting a balanced approach to medical services. Nerul, with a higher school attendance rate of 85%, shows 55% preferring government healthcare, while 45% turn to private facilities, suggesting relatively better socio-economic conditions supporting private care. Vashi stands out with the highest school enrollment at 88%, evenly split between government and private healthcare access (50% each). This balance indicates a more economically stable population capable of choosing between public and private services. In contrast, Turbhe shows lower school participation at 65%, with 70% relying on government healthcare and 30% using private services — reflecting a dependence on public infrastructure, likely driven by affordability.

Koperkhairane and Ghansoli show 72% and 68% school enrollment rates, respectively, with a majority preferring government healthcare (65% and 60%), suggesting similar socio-economic patterns where public services are more accessible. Airoli reports 75% school attendance, with 58% using government healthcare and 42% opting for private alternatives, reflecting a more balanced healthcare choice. Digha, however, records the lowest school attendance rate at 60%, with 75% relying on government healthcare and only 25% accessing private facilities — indicative of economic challenges and limited private healthcare affordability. The data reveals a correlation between school attendance and healthcare preferences. Wards with higher educational participation, like Vashi and Nerul, show greater reliance on private healthcare, suggesting a link between education and economic stability. Meanwhile, wards with lower school attendance, such as Turbhe and Digha, exhibit higher dependence on government healthcare, reflecting financial constraints among migrant families.

Chart 1: Employment Distribution Across Wards

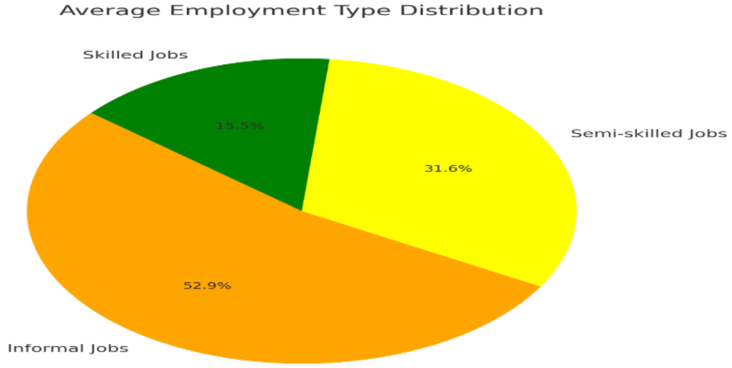


Source: Primary data collected by research.

The bar chart illustrates the employment distribution across wards in Navi Mumbai, categorized into Informal Jobs (%), Semi-skilled Jobs (%), and Skilled Jobs (%). Each ward — Belapur, Nerul, Vashi, Turbhe, Koperkhairane, Ghansoli, Airoli, and Digha — has a stacked bar divided into three color-coded sections:Orange represents Informal Jobs (%): This segment dominates most wards, particularly Turbhe and Digha, where the informal sector takes up the largest portion. This suggests a high reliance on casual or unregulated work, which is common among low-income migrant populations. Yellow represents Semi-skilled Jobs (%): Wards like Belapur, Nerul, Vashi, and Koperkhairane show a significant share of semi-skilled employment, indicating a transition from purely informal work towards more stable occupations. Green represents Skilled Jobs (%): This segment is smaller across all wards, reflecting limited access to skilled employment among migrants.

However, Belapur and Vashi show a relatively higher portion of skilled jobs compared to other wards.The chart reflects a pattern: wards with higher informal employment (e.g., Digha, Turbhe) generally show lower shares of skilled jobs, pointing to economic vulnerability. In contrast, wards like Vashi and Nerul display a more balanced distribution, suggesting better opportunities for semi-skilled and skilled work.

Chart 2: Average Employment Type Distribution



Source: Primary data collected by research.

The pie chart titled "Average Employment Type Distribution" breaks down the overall employment structure across the wards into three segments:

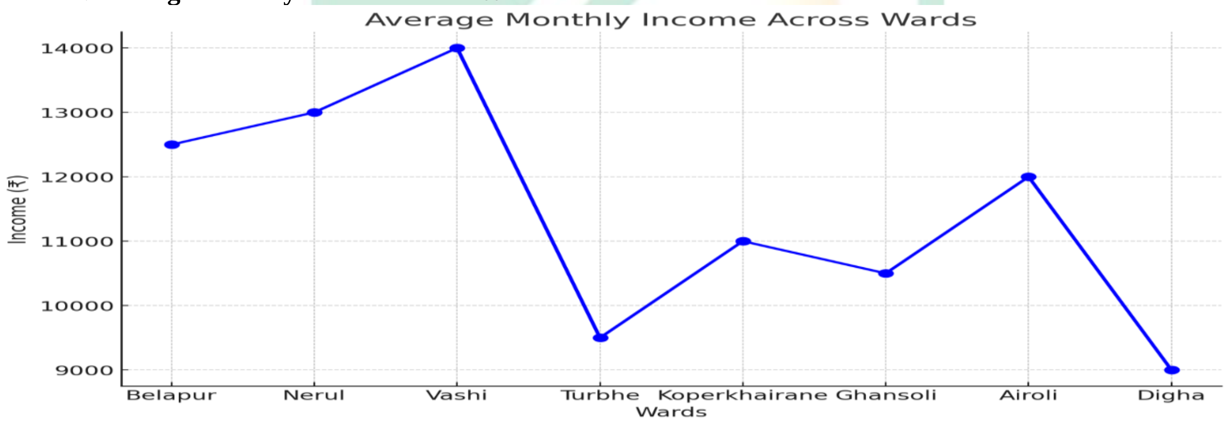
Informal Jobs (52.9%) — This constitutes the largest portion, reflecting a significant reliance on unregulated, low-wage work. It indicates that a majority of the migrant population finds employment in sectors without job security or benefits, such as daily wage labor, domestic work, or small-scale trading.

Semi-skilled Jobs (31.6%) — This category represents a substantial share, suggesting that many migrants have transitioned into roles requiring basic technical or vocational skills, such as factory work, drivers, or sales assistants. This implies some level of skill acquisition among the population, though not enough to secure high-income jobs.

Skilled Jobs (15.5%) — The smallest portion, highlighting limited access to professions demanding formal education or specialized training. This reflects barriers in education, certifications, or networks needed to enter skilled professions like engineering, teaching, or administrative roles.

The chart suggests that while some migrants have progressed into semi-skilled roles, the dominance of informal jobs underscores economic vulnerability and the need for skill development programs to enhance upward mobility.

Chart 3: Average Monthly Income Across Wards



Source: Primary data collected by research.

The line graph titled "Average Monthly Income Across Wards" illustrates the variation in average income levels among different wards. Here's an analysis:

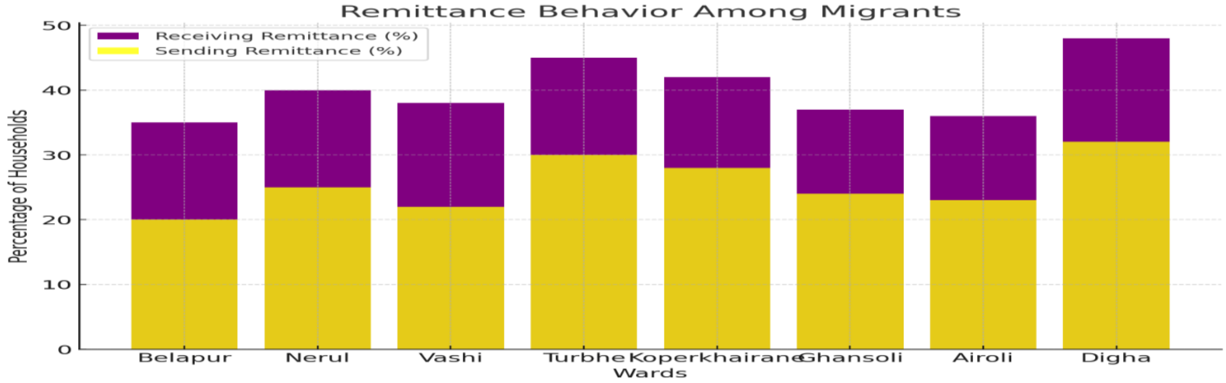
Belapur, Nerul, and Vashi show the highest average incomes, with Vashi peaking at ₹14,000. This could indicate better job opportunities, a higher proportion of semi-skilled or skilled jobs, or more established economic infrastructure in these areas.

Turbhe and Digha exhibit the lowest incomes, around ₹9,500 and ₹9,000, respectively. This suggests a higher concentration of informal jobs, limited access to stable employment, or overall poorer economic conditions.

Koperkhairane, Ghansoli, and Airoli fall in the mid-range, indicating a mixed employment structure — possibly a combination of semi-skilled and informal jobs keeping incomes modest.

The sharp decline from Vashi to Turbhe highlights a significant income disparity between neighboring wards, pointing to potential inequalities in job quality, housing conditions, or access to economic resources. This variation signals the need for targeted economic interventions in the lower-income wards to promote financial stability among migrants.

Chart 4: Remittance Behaviour Among Migrants



Source: Primary data collected by research.

The bar graph titled "Remittance Behavior Among Migrants" displays the percentage of households in each ward that either send or receive remittances. Let's break it down:

Sending Remittance (Yellow):

Wards like Turbhe and Digha show the highest percentage of households sending remittances, around 30-33%. This indicates a significant portion of migrants in these areas supporting families in their native places, which aligns with their lower average income levels — suggesting they earn just enough to sustain themselves and send money back home.

Belapur, Nerul, Vashi, Ghansoli, and Airoli show a lower share of remittance-sending households, around 20-25%, possibly reflecting more settled migrants or those earning enough to prioritize local expenses.

Receiving Remittance (Purple):

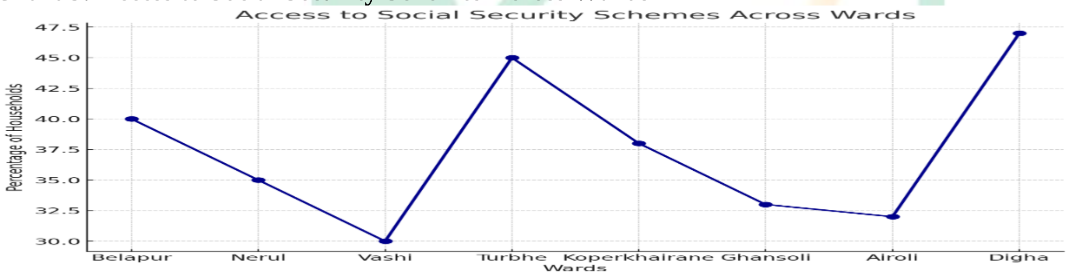
Digha leads with nearly 50% of households receiving remittances, highlighting stronger financial dependence on external income sources — possibly from family members working in other cities or countries.

Nerul, Turbhe, Koperkhairane, and Vashi also show high remittance-receiving rates, 38-45%, which suggests migrants in these wards may rely on support from extended families while managing local expenses.

Belapur, Ghansoli, and Airoli report lower receiving rates, hinting at a more self-sufficient migrant population.

The trend indicates Turbhe and Digha exhibit both high sending and receiving behaviors, pointing to economic vulnerability, where households earn modest incomes yet maintain strong financial ties to their origin regions. In contrast, Nerul and Vashi reflect more balanced behavior, possibly due to a better income mix from skilled jobs.

Chart 5: Access to Social Security Schemes Across Wards



Source: Primary data collected by research.

The line graph titled "Access to Social Security Schemes Across Wards" shows the percentage of households in each ward that benefit from social security programs. Let's analyze the trend:

Belapur starts strong with 40% of households having access to social security schemes, indicating better awareness or outreach programs.

Nerul and Vashi show a decline to 35% and 30% respectively. This dip may reflect gaps in scheme implementation or a population segment that doesn't qualify for certain benefits.

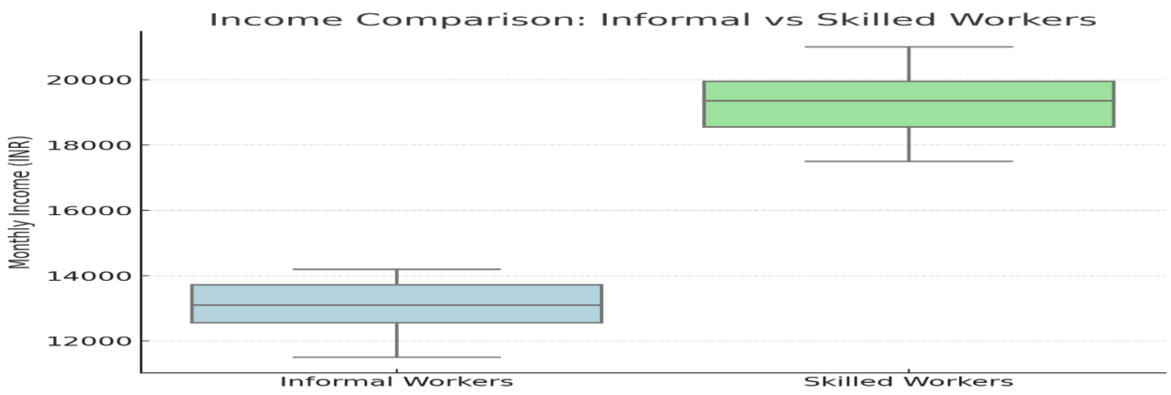
Turbhe spikes to 45%, suggesting more active engagement or a greater concentration of vulnerable households targeted by welfare programs.

Koperkhairane, Ghansoli, and Airoli show a downward trend, with access dropping to 33% in Ghansoli and 32% in Airoli — potentially signaling barriers like documentation issues or lack of awareness.

Digha tops the chart at 47%, reflecting high reliance on social security, possibly due to a larger low-income or migrant population in need of government support.

The contrast between Vashi's low and Digha's high highlights uneven access, which may relate to socio-economic differences across wards or varying effectiveness of local administration efforts.

Chart 6: Income Comparision: Informal vs Skilled Workers



Source: Primary data collected by research.

The box plot titled "Income Comparison: Informal vs Skilled Workers" gives a clear visual of income distribution for both worker categories. Let's break it down:

Informal Workers:

The median income appears around ₹13,000.

The interquartile range (IQR) spans from about ₹12,000 to ₹14,000, showing a narrow spread, indicating less income variation among informal workers.

The whiskers suggest a lower boundary near ₹11,500 and an upper boundary close to ₹14,500, reinforcing that informal workers earn relatively low and consistent wages.

Skilled Workers:

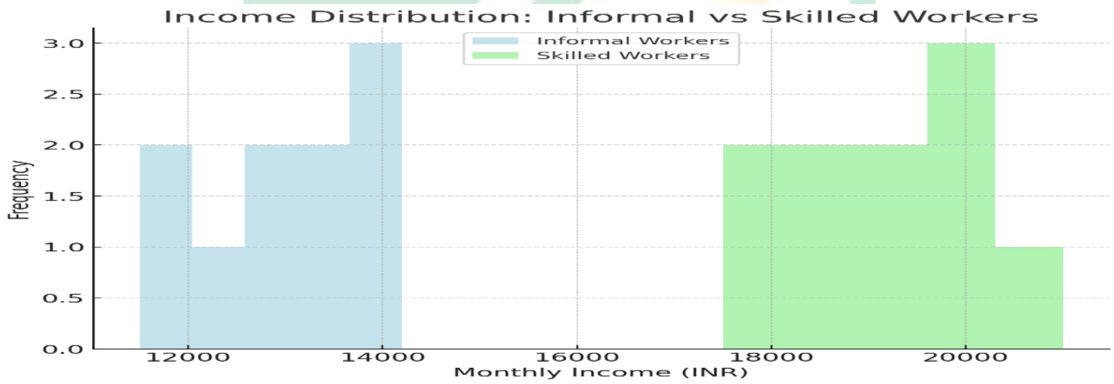
The median income is significantly higher, around ₹19,500.

The IQR stretches from approximately ₹18,000 to ₹20,000, showing more variation in income within this group.

Whiskers extend from ₹17,500 to ₹21,000, reflecting both higher baseline and ceiling incomes.

The clear gap in medians and ranges underscores the income disparity between informal and skilled workers. Skilled workers not only earn more on average but also show greater variation, potentially due to differences in skill levels, industries, and job roles.

Chart 7: Income Distribution: Informal vs Skilled Workers



Source: Primary data collected by research.

The histogram titled "Income Distribution: Informal vs Skilled Workers" compares the income ranges of the two groups. Here's a breakdown:

Informal Workers (light blue):

Income mainly ranges between ₹11,500 to ₹14,500.

The highest frequency is around ₹13,000 to ₹14,000, showing a concentration of workers earning in this narrow band.

The overall distribution looks tightly packed, indicating low variation in earnings among informal workers.

Skilled Workers (light green):

Income ranges between ₹17,500 and ₹21,000.

The highest frequency appears near ₹19,500 to ₹20,500, reflecting a higher earning bracket than informal workers.

The distribution has a wider spread, suggesting more variation, likely due to differing skill levels or job roles within this category.

The visual contrast highlights the income disparity between the two groups, with skilled workers earning notably more and having a broader range of income distribution.

Findings and Discussion:

The analysis of income differences between informal and skilled migrant workers in Navi Mumbai reveals a significant economic divide. The Independent Samples T-Test confirmed that the income disparity between the two groups is statistically significant, with a p-value < 0.0001, indicating that the likelihood of this difference occurring by chance is extremely low. The average monthly income for informal workers was ₹13,240, whereas skilled workers earned ₹19,290 on average. The bar chart visually reinforced this gap, reflecting a clear advantage for those employed in skilled occupations. The boxplot showed that income among informal workers had a narrower range and lower median, with more clustering toward the lower end. In contrast, skilled workers exhibited both a higher median and wider spread, suggesting that while skilled jobs offer better pay, they may also present more variability in earnings. The histogram further supported these insights, showing that most informal workers' incomes were concentrated around ₹12,000 to ₹14,000, while skilled workers predominantly earned between ₹18,000 and ₹21,000. This suggests that skill acquisition plays a significant role in economic advancement among migrants. The results align with broader socio-economic theories, emphasizing that access to education, vocational training, and job opportunities in skilled sectors can substantially improve financial outcomes for migrants. This highlights the importance of policy interventions that promote skill development and job access to reduce economic inequality.

Conclusion:

The study on rural-to-urban migration in Navi Mumbai provides a clear understanding of the economic disparities between informal and skilled migrant workers. The analysis, supported by statistical tests and visual representations, highlights that skilled migrants earn significantly higher incomes than their informal counterparts. This disparity underscores the importance of skill development and access to formal employment opportunities in improving the economic conditions of migrants. The findings suggest that while urban migration offers potential economic benefits, the nature of employment largely determines the extent of these gains. Informal workers face limited earning potential and greater financial instability, whereas skilled migrants achieve higher, more stable incomes. The study reinforces the need for policies aimed at promoting skill enhancement and creating accessible pathways to skilled jobs for migrants. Vocational training programs, educational opportunities, and employer incentives to hire and upskill migrant workers could bridge this economic divide. Ensuring migrants can transition from informal to skilled employment is essential for fostering sustainable socio-economic growth and improving the quality of life for migrant communities.

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The Impact of Digital Payments on Consumer Spending

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Abstract: This study explores how digital payments like UPI, mobile wallets, and online banking affect consumer spending. It finds that people spend more often because digital payments are fast, easy, and sometimes offer rewards. Many are shifting from cash to digital methods, which also helps more people join the financial system. While digital payments support growth and convenience, they may also lead to unplanned spending. Overall, the study shows that digital payments strongly influence how people spend and manage money today.

Keywords: Digital Payments, Consumer Spending, Financial Behaviour, Cashless Transactions

CHAPTER 1 – INTRODUCTION

The evolution of financial technology has transformed how individuals manage and spend money. Digital payment methods—such as mobile banking, UPI, e-wallets, and online transfers—have become increasingly common due to their ease of use and quick processing. These methods reduce the need for physical cash and offer a more convenient way to complete transactions. As a result, consumers often find it easier to make purchases, which may lead to changes in their spending habits. This research focuses on understanding how the growing use of digital payments influences consumer spending patterns in the modern economic landscape.

Objectives:

- To study about how digital payments influence consumer spending habits and patterns.
- To analyse whether digital payments encourage impulsive buying compared to cash transactions.
- To investigate the influence of digital payment incentives (cashback, rewards, discounts) on purchasing decisions.

Hypothesis:

1. H_1 – Digital payments lead to increased consumer spending compared to cash transactions.
   H_0 – Digital payments have no significant impact on consumer spending compared to cash transactions.
2. H_1 – Cashback, rewards, and discounts in digital payment systems encourage higher spending.
   H_0 – Cashback, rewards, and discounts in digital payment systems do not significantly affect consumer spending.

Significance of the study: The study would help understand how digital payments influence consumer spending in Mumbai. It would benefit businesses by optimizing marketing strategies, empower consumers to manage finances wisely, and guide policymakers in enhancing digital payment systems. Additionally, it would promote financial awareness and contribute to the growth of a cashless economy.

Limitation of the study: The study is limited to Mumbai with a small sample size of 85 respondents, restricting the generalizability of results. Consumer responses may be influenced by individual financial habits and external economic conditions. It also does not examine the long-term effects of digital payments on financial behaviour.

Scope of the study: This study examines how digital payments influence consumer spending in Mumbai City. It explores spending patterns, impulsive buying, the impact of incentives (cashback, rewards, discounts). It also considers demographic factors and security concerns related to digital transactions and financial decision-making. The study is limited to consumer experiences in Mumbai and does not include global trends or technical aspects of payment systems.

CHAPTER 2 – REVIEW OF LITERATURE

1. Meenakshi M Huggi, Bhuwaneshwari R & Dr. Kanyakumari Udagi (2024), "The Impact of Digital Payment Systems on Consumer Behaviour in India", analyzed the impact of digital payment systems on consumer behaviour in India using a sample of 500 respondents from both urban and rural areas. The study found that digital payments improved financial inclusion and spending convenience but were hindered by security concerns and low digital literacy in rural regions. While effective in highlighting overall trends, the study lacked a comparative analysis between urban and rural adoption rates.
2. Mehta, R. (2024), "Impact of Digital Payment Systems on Consumer Behavior: A Study in Emerging Economies", explored the adoption drivers, usage patterns, and economic implications of digital payment systems across India, Indonesia, and Nigeria. The mixed-methods study revealed that trust in digital platforms, ease of use, and government incentives are primary adoption drivers, leading to increased consumer spending. However, the study did not examine the long-term effects of digital payments on the economy. Future research should look into this impact over time.
3. Sundararajan and Mukherjee (2015), "Role of Government Policies in Promoting Mobile Banking", analyzed the effectiveness of government initiatives like India's Pradhan Mantri Jan Dhan Yojana (PMJDY) in encouraging mobile banking adoption. They concluded that supportive policies play a crucial role in driving digital payment adoption. However, the study did not assess the long-term sustainability of these government incentives, highlighting the need for further research on how policies impact digital payment adoption over time.

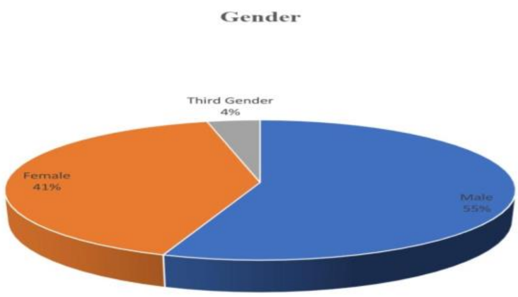
CHAPTER 3 – RESEARCH METHODOLOGY

1. Research Design: Descriptive study analyzing digital payments' impact on consumer spending in Mumbai.
2. Data Collection:
   Primary Data: Surveys and Google form questionnaire
3. Sampling Method: Convenience sampling targeting digital payment users.
4. Sample Size: 85
5. Data Analysis:
   Quantitative Analysis: Statistical tools to assess spending patterns.
   Hypothesis Testing: Chi-square tests.

CHAPTER 4 – DATA ANALYSIS

Table – 1. Gender identity of Respondents

Gender	No. Of Respondents
Male	51
Female	31
Third Gender	3



The study shows active digital payment use among men (55%), women (41%), and the Third Gender (3%), indicating inclusive adoption and reflecting diverse consumer experiences in Mumbai.

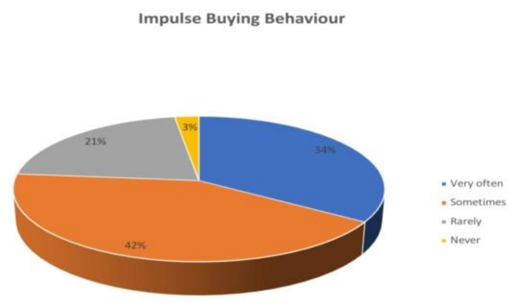
Table – 2. Chi-Square Analysis of Changes in Consumer Spending Patterns Induced by Digital Payment Systems

Consumer Behaviour	Observed (O)	Expected (E)	Chi-square Component (O−E)^2 / E	
Yes, I spend significantly more	36	21.25	10.23823529	
Yes, but only slightly more	30	21.25	3.602941176	
No, my spending remains the same	15	21.25	1.838235294	
No, I spend less	4	21.25	14.00294118	
			Chi - Square P Value	**1.60954E-06**

The Chi-square analysis reveals that digital payment systems have a significant impact on consumer spending behaviours. The Chi-square test shows a p-value is 1.6095E-06 (0.0000016),which is less than 0.05, since the p-value is significantly low, we reject the null hypothesis. This suggests that digital payments encourage increased spending among consumers.

Table – 3. Unplanned / Impulse Purchased Encouraged by Digital Payments

Unplanned/Impulse Buying Behaviour	No. Of Respondents
Very often	29
Sometimes	36
Rarely	18
Never	2



The data indicates that digital payments significantly encourage impulse buying. A majority of respondents (42%) sometimes make unplanned purchases, while 34% do so very often. Only 21% rarely engage in impulse buying, and a minimal 3% never make such purchases. This suggests that the convenience of digital payments plays a role in driving spontaneous spending behavior.

Table – 4. Chi-Square Analysis of Spending Behaviour in Response to Digital Payment Offers

Extra spending for offers (Cashback, discounts etc.)	**Observed (O)**	**Expected (E)**	**Chi-square Component (O−E)^2 / E**
Yes, multiple times	14	21.25	9.555882353
Yes, occasionally	34	21.25	7.65
Yes, sometimes	30	21.25	3.602941176
No, never	7	21.25	9.555882353
Total Chi-Square			23.28235294
P-Value (df=3)			**3.52641E-05**

The Chi-square analysis shows a significant relationship between digital payment offers and extra spending ($\chi^2 = 23.28$, $p = 0.000035$). Most respondents are influenced by offers, indicating that cashback and discounts encourage increased consumer spending.

Key Findings:

1. Digital payments are widely used by all genders, showing inclusive adoption in Mumbai.
2. Most consumers spend more with digital payments, as shown by a significant Chi-square result.
3. Digital payments encourage impulse buying among the majority of users.
4. Cashback and discounts lead many consumers to spend extra.

CHAPTER 5 – CONCLUSION & RECOMMENDATIONS

Conclusion: Digital payments significantly impact consumer spending by promoting convenience, impulsive buying, and ease of access. They are widely adopted across demographics but may lead to overspending, highlighting the need for better financial awareness.

Recommendations:

1. Promote financial literacy programs to help consumers manage digital spending and avoid overspending.
2. Encourage the use of budgeting tools and apps linked to digital payment platforms.
3. Digital payment providers should include spending alerts and limit-setting features to support responsible usage.

CHAPTER 6 – REFERENCE & BIBLIOGRAPHY

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Modern Shopping: Integration of AI, Cashless Transactions, and Eco-Friendly Business Practices

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Introduction

Modern shopping is changing with the help of new technologies. People now want shopping to be faster, more personalized (made just for them), and better for the environment. This research talks about how three things—AI (Artificial Intelligence), cashless payments, and eco-friendly practices—are working together to improve the way we shop.

Background: Shopping has changed a lot with new technology. Stores now use AI to help customers, cashless payments to make buying easier, and eco-friendly methods to protect the environment. These changes are shaping how people shop today.

Problem Statement: Many stores are using AI, digital payments, and eco-friendly ideas, but they do not always know how to combine them well. Also, we do not fully understand how customers feel about these changes.

Objectives

1. To find out how stores use AI to improve shopping.
2. To see how popular and useful cashless payments have become.
3. To look at how businesses are trying to protect the environment.
4. To understand what customers, think about AI, digital payments, and eco-friendly shopping.
5. To give suggestions that can help shops make shopping better and more sustainable.

Literature Review

- Shahrukh Khan Lodhi et al. (2024) shows how companies like Adidas and Tesla use AI and eco-friendly materials to make products in a smart and green way. AI helps reduce waste and improve production. But it also comes with challenges like energy use and data privacy. The study says we need to use AI carefully and responsibly to build a better, greener future.
- Hafizah Hammad Ahmad Khan et al. (2024) looks at how green finance is growing and helping the environment. By reviewing 507 research papers from 2013 to 2023, it shows that interest in green finance has increased, especially in Asia. The study also points out areas for future research—like using new financial technologies (fintech), creating better ways to measure results, and building strong systems to handle risks. In the end, it says we need smart tools to track both environmental and financial success together.
- Ankur Saini (2022) explains how digital technology is changing shopping—especially by moving from cash to cashless payments. It looks at tools like mobile wallets, AI, and blockchain, and shares examples from countries like Sweden, China, and India. The paper also talks about the roles of governments, businesses, and customers in making this change happen. Lastly, it highlights future challenges like digital security and making sure everyone can access cashless systems.
- Sharif Mohd et al. (2020) presents that how payment methods are changing in India. Thanks to technology, more people are using digital payments—but not everyone has access. The study focuses on how much people know about cashless payments, the problems they face, and the benefits. Data was collected from people directly, and results show that many face issues like poor internet, low digital awareness, and difficulty making small payments. There is also a lack of knowledge about newer digital methods.
- Egemen Hopali et al. (2022) reviews how mobile wallets (like Google Pay or Paytm) have changed shopping over the last 10 years. It explains how smartphones and internet access helped more people use these apps for quick, secure, and eco-friendly payments. The study looked at 128 articles to understand how mobile wallets can be improved, especially in areas like security, customer value, and sustainability.
- Fadi Abdelfattah et al. (2024) presents a detailed study that shows how using AI, green business practices, and smart technology together can help companies become eco-friendlier and more innovative. It focuses on how green skills and AI can improve new business ideas. Data from 214 entrepreneurs in Oman showed that AI made green practices more effective and helped businesses grow. The study suggests that using AI smartly can lead to better results and more sustainable business.

Methodology

Quantitative data: Literature Review (Secondary data)
Qualitative data: Primary data: A set of Questionnaire in the google form

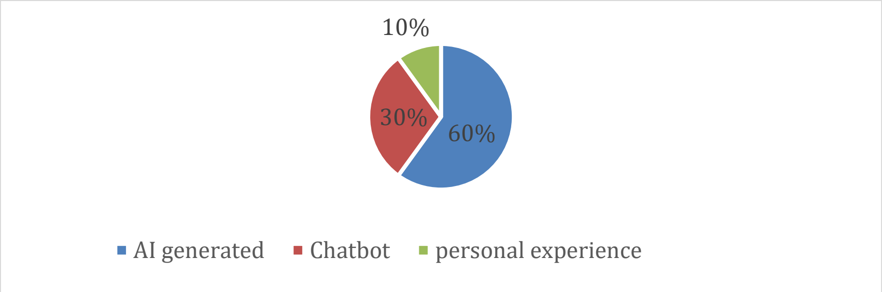
Google form link:
https://docs.google.com/forms/d/e/1FAIpQLScM7wcVB05xfEM_FE2vrBJHHi63TOABd699FbGTDj4Wq1k34w/viewform?usp=header

Hypothesis

- H1: Customers who receive AI-based product recommendations are more likely to make purchase decisions.
- H2: Consumers prefer cashless transactions over cash due to convenience and security.
- H3: Shoppers are willing to pay extra for eco-friendly products.
- H4: There is a lack of awareness among customers about the integration of AI, digital payments, and sustainability.
- H5: Consumers who are more aware of technology are more likely to support eco-friendly shopping practices.

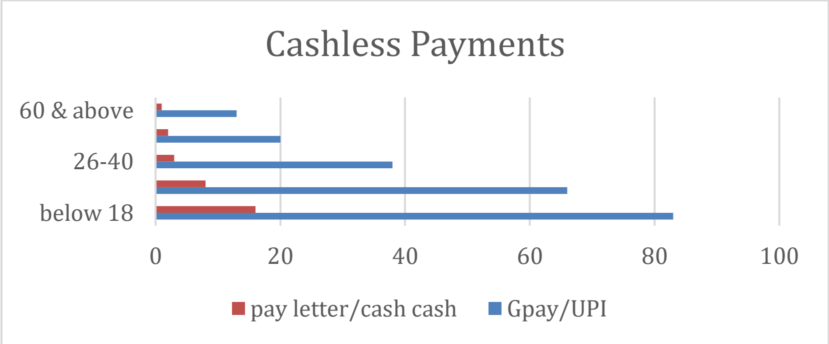
Findings & Analysis

- Most people already use AI while shopping online, like getting suggestions or chatting with bots.
- Cashless payments like UPI and digital wallets are very popular because they are quick and safe. But not everyone knows about new options like "Buy Now, Pay Later."
- Many shoppers care about the environment and are okay with paying more for eco-friendly products. However, they don't always know how technology helps with sustainability.
- Shops can do better by teaching customers, promoting eco-friendly habits, and giving more digital tools for a smoother shopping experience.



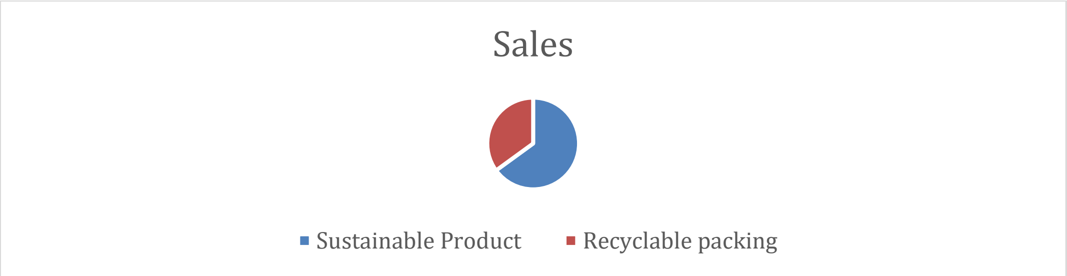
1) AI Usage in Shopping

- 60% of respondents said they received AI-generated product suggestions.
- 30% interacted with chatbots while shopping online.
- 10% of users appreciated personalized experiences.



2) Cashless Payments

- 85% preferred using digital wallets or UPI over cash.
- 15% had used Buy Now, Pay Later options.



3) Eco-Friendly Preferences

- 65% said they are willing to pay more for sustainable products.
- 35% look for recyclable packaging while shopping.

4)Integration Awareness

- Only 40% were fully aware of how AI, digital payments, and sustainability connect.
- Indicates need for better communication from businesses.
  Interpretation:
- Most consumers are using AI and cashless payments regularly.
- There is growing interest in eco-friendly products, but awareness is still low.
- Businesses should focus on educating customers about the combined benefits.

Recommendation

- Teach people how to use AI, digital payments, and eco-friendly options.
- Start small with simple tech, then grow.
- Use affordable tools that work on any phone or network.
- Support green products and packaging.
- Give rewards for using digital or eco-friendly options.
- Ask for feedback to improve services.
- Use support from government or partners for funding.

Conclusion

- Shopping is changing fast with AI, digital payments, and eco-friendly ideas.
- AI makes shopping easier by giving smart suggestions and fast service.
- Cashless payments are quick, safe, and widely used.
- Eco-friendly practices help protect the environment.
- Combining all three makes shopping better for people and the planet.
- Businesses that follow these trends will do better in the future.
- Customer education and support are important to make these changes successful.

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Impact of Digital Transformation on Entrepreneurship in Rural India

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Abstract:
The advent of digital technologies has significantly transformed the entrepreneurial landscape across the globe, including in rural regions of India. This study investigates the impact of digital transformation on entrepreneurship in rural India, focusing on how digital tools, platforms, and infrastructure have influenced business initiation, growth, and sustainability in these areas. Through a mixed-methods approach combining qualitative interviews with rural entrepreneurs and quantitative analysis of secondary data, the research explores the extent to which digital connectivity, e-commerce, mobile banking, and government-led digital initiatives such as Digital India have reshaped rural entrepreneurial activities.

Findings indicate that digital transformation has lowered traditional entry barriers, enabled wider market access, and improved operational efficiency for rural entrepreneurs. Mobile internet penetration and affordable smartphones have empowered small business owners, artisans, and agricultural entrepreneurs to access information, conduct digital marketing, and engage in online transactions. Additionally, digital financial services have enhanced financial inclusion, enabling access to credit, subsidies, and transparent transactions. However, the study also highlights challenges including digital literacy gaps, infrastructural limitations, and regional disparities in digital adoption.

The paper concludes that while digital transformation has emerged as a powerful enabler of rural entrepreneurship, its full potential can only be realized through targeted policy interventions, digital skill development, and improved digital infrastructure. Bridging the digital divide remains essential to ensure inclusive growth and to unlock the latent entrepreneurial potential in India's rural heartlands. The research provides actionable insights for policymakers, development agencies, and entrepreneurs aiming to leverage digital tools to drive socio-economic development in rural India.

Keywords: Overview, Digital Transformation, Entrepreneurship in Rural India.

Introduction:
Entrepreneurship plays a pivotal role in driving economic growth, fostering innovation, and generating employment. In a country like India, where a significant portion of the population resides in rural areas, fostering rural entrepreneurship is crucial for inclusive development. Traditionally, rural entrepreneurship in India has faced numerous challenges such as limited access to markets, inadequate infrastructure, restricted financial support, and poor connectivity. However, the advent of digital transformation has opened new avenues for overcoming these challenges and reshaping the entrepreneurial landscape in rural India. Digital transformation refers to the integration of digital technologies into all areas of business and society, fundamentally changing how entities operate and deliver value. In rural India, this transformation is largely driven by increased internet penetration, the proliferation of affordable smartphones, and the implementation of government-led initiatives such as Digital India, Startup India, and Pradhan Mantri Garmin Digital Saksharta Abhiyan (PMGDISHA). These initiatives aim to bridge the digital divide and empower rural populations through digital literacy, improved connectivity, and access to e-governance and financial services.

The influence of digital technologies on rural entrepreneurship is multifaceted. They have enabled entrepreneurs to access broader markets through e-commerce platforms, improve supply chain efficiency, manage finances through digital banking, and connect with customers via social media marketing. Moreover, digital tools facilitate better access to information, training, and resources that were previously unavailable to rural entrepreneurs. This democratization of knowledge and connectivity has the potential to unleash a wave of innovation and enterprise in India's villages and small towns. Despite these promising developments, challenges persist. Digital infrastructure in many rural areas remains underdeveloped, with inconsistent internet connectivity and electricity supply. Additionally, digital literacy and awareness among rural populations are still limited, posing significant barriers to the effective use of technology. Socioeconomic factors, gender disparities, and cultural resistance to change further complicate the adoption of digital tools in rural entrepreneurial settings. This research seeks to examine the impact of digital transformation on entrepreneurship in rural India by exploring how digital tools and infrastructure influence business formation, growth, and sustainability. It aims to assess the benefits, opportunities, and challenges associated with the digitalization of rural enterprises. By adopting a mixed-methods approach, combining case studies, field interviews, and analysis of secondary data, the study will offer a comprehensive understanding of the evolving relationship between technology and rural enterprise.

The significance of this research lies in its potential to contribute to policy formulation, capacity-building programs, and strategic planning aimed at fostering rural entrepreneurship. As India moves toward becoming a digitally empowered society and knowledge economy, ensuring that rural entrepreneurs are not left behind is critical. The study highlights the need for inclusive digital policies that address infrastructural gaps, promote digital literacy, and support innovation at the grassroots level. In summary, digital transformation represents both an opportunity and a challenge for rural entrepreneurship in India. This paper seeks to analyze this dynamic interplay, aiming to shed light on how digital tools can be harnessed to drive sustainable and inclusive entrepreneurial growth in rural regions.

Objective:

1. To Study the Impact of Digital Transformation in Rural India.
2. To Study the Entrepreneurship in Rural India.
3. To Study the overview of Digital Transformation and Entrepreneurship in Rural India.

- **Impact of Digital Transformation in Rural India: -**

Digital transformation has significantly reshaped the social, economic, and cultural landscape of rural India. The integration of technology and digital infrastructure has empowered communities, improved governance, and unlocked new opportunities for growth and development. Here's a breakdown of its major impacts:

1. Improved Access to Information.
Internet penetration has enabled rural populations to access real-time information about agriculture, healthcare, education, weather forecasts, and government schemes. Platforms like Digital India and Common Service Centers (CSCs) serve as digital bridges, helping villagers avail services with ease.

2. Agricultural Advancement.
Farmers now use apps and portals to get updates on crop prices, weather conditions, and modern farming techniques. Government initiatives like e-NAM (National Agriculture Market) have facilitated better price discovery and direct selling, eliminating middlemen.

3. Financial Inclusion.
Digital banking services and mobile wallets have reached remote areas, promoting cashless transactions and increasing financial literacy. Schemes like Jan Dhan Yojana and Direct Benefit Transfers (DBT) have reduced corruption and ensured benefits reach the rightful recipients.

4. E-Governance and Public Services.
Online access to public services such as land records, birth/death certificates, and ration cards has reduced dependency on bureaucratic processes. Initiatives like Aadhaar have streamlined identity verification and improved service delivery.

5. Healthcare Access.
Telemedicine and health apps allow rural populations to consult doctors remotely. Digital health records and platforms like e Sanjeevani have improved patient care and reduced travel time for medical services.

6. Education and Skill Development.
Online learning platforms and digital classrooms have widened access to education, especially during the COVID-19 pandemic. Government programs like PMGDISHA (Pradhan Mantri Garmin Digital Saksharta Abhiyan) aim to make rural citizens digitally literate.

7. Employment and Entrepreneurship.
Rural youth are using digital platforms to find jobs, learn skills, and start businesses (e.g., e-commerce, freelancing). Women entrepreneurs are particularly benefiting from online marketplaces and self-help group (SHG) networks.

8. Social Empowerment.
Increased connectivity has given rural voices more visibility on social media and digital platforms. Community mobilization and awareness campaigns are more effective through WhatsApp, YouTube, and regional content.
Digital transformation has significantly reshaped the social, economic, and cultural landscape of rural India. The integration of technology and digital infrastructure has empowered communities, improved governance, and unlocked new opportunities for growth and development.

- **Entrepreneurship in Rural India: -**

Entrepreneurship in rural India has emerged as a key driver of socio-economic development. With increasing digital access, government support, and awareness, rural areas are no longer just agricultural hubs—they are transforming into centers of innovation, self-employment, and local enterprise.

1. Emerging Trends in Rural Entrepreneurship.
Agri-based enterprises Agro-processing, organic farming, dairy farming, beekeeping, and mushroom cultivation are gaining popularity. Micro-enterprises Tailoring, handicrafts, food processing, and local retail shops provide employment at the village level. Digital and tech-based startups Young entrepreneurs are leveraging technology to offer services like online retail, delivery, education, and fintech in rural regions. Social entrepreneurship: Many are launching ventures to solve local problems, such as water purification, affordable healthcare, or clean energy solutions.

2. Government Support and Schemes.

Startup India and Stand-Up India Promote entrepreneurship through funding, incubation, and mentoring support. MUDRA Loans Provide easy credit access to small and micro-businesses. DAY-NRLM (Deendayal Antyodaya Yojana – National Rural Livelihood Mission): Supports Self Help Groups (SHGs) and promotes women's entrepreneurship. Skill India Mission: Offers training to develop entrepreneurship skills among rural youth.

3. Role of Self-Help Groups (SHGs).

SHGs empower women economically by enabling group savings, collective businesses, and microloans. Many SHGs have successfully launched ventures like papad-making, pickles, weaving, and local product sales.

4. Impact of Digital Technology. E-commerce platforms: Rural entrepreneurs sell handmade products and farm produce on Amazon, Flipkart, and government portals like GeM. Digital marketing Social media and WhatsApp are helping small businesses connect with customers directly. Online payments and banking: Help manage business transactions and reduce cash dependency.

5. Challenges Faced.

Lack of infrastructure: Poor roads, power supply, and internet connectivity can hamper business operations. Limited access to finance Despite schemes, many still struggle to get adequate capital. Skill gaps Many potential entrepreneurs lack formal education or business training. Market linkage issues: Difficulty in accessing wider markets beyond the local area.

6. Success Stories.

Meesho sellers: Many rural women use platforms like Meesho to resell products and earn income. Agri-tech startups Companies like DeHaat and AgroStar are empowering rural entrepreneurs to support farmers. Rural BPOs and digital centers: Provide employment and tech-based services to locals.

- **Overview of Digital Transformation and Entrepreneurship in Rural India:-**

1. Digital India.

Digital transformation and entrepreneurship are reshaping rural India by bridging the urban-rural divide and creating new economic opportunities. With the government's push towards "Digital India" and the proliferation of internet and mobile technologies, rural areas are becoming active participants in the digital economy.

2. Digital Transformation in Rural India.

Digital transformation refers to the integration of digital technologies into everyday life and business processes. In rural India, this includes Internet and Mobile Penetration: Affordable smartphones and internet connectivity (via Jio, BharatNet, etc.) have enabled access to information and services. Digital Governance: Initiatives like e-Governance, Common Service Centres (CSCs), and Digital Seva Kendras help rural citizens access government services online. Digital Payments: UPI, mobile wallets, and Aadhaar-enabled payment systems have reduced cash dependency. E-Learning and Telemedicine: Platforms like DIKSHA, ePathshala, and eSanjeevani enable remote education and healthcare access.

3. Rise of Rural Entrepreneurship.

Entrepreneurship in rural India has seen a significant shift, moving beyond agriculture to diverse areas like: AgriTech Startups providing solutions in precision farming, supply chain management, and farm-to-market linkages. Handicrafts and Cottage Industries: Digital platforms like Amazon Saheli and Flipkart Samarth promote local artisans and products. Micro-Enterprises: Women-led self-help groups (SHGs) and rural entrepreneurs using digital tools to start small businesses. E-commerce and Logistics: Rural entrepreneurs are setting up delivery and warehousing services, often with support from startups and NGOs.

4. Government Initiatives.

Startup India & Stand-Up India Provides support for rural and SC/ST entrepreneurs. Skill India Mission: Offers digital and vocational training for rural youth. PMGDISHA (Pradhan Mantri Gramin Digital Saksharta Abhiyan): Promotes digital literacy in rural households.

5. Challenges.

Despite progress, several barriers remain Digital Illiteracy Limited digital skills among older and less-educated populations. Infrastructure Gaps: Inconsistent power supply and internet connectivity. Financial Constraints: Limited access to funding for rural startups. Cultural Barriers: Resistance to change, especially among traditional communities.

6. Opportunities Ahead.

Expanding Market Access Digital tools allow rural entrepreneurs to reach national and international markets. Innovation in Agri-Business: Scope for AI, IoT, and blockchain in farming. Green and Sustainable Ventures: Eco-friendly products and practices gaining popularity. Youth Engagement: Tech-savvy rural youth can drive future innovation and growth.

Research Methodology:

The current study Impact of Digital Transformation on Entrepreneurship in Rural India the descriptive method. The data used is completely secondary, gathered from secondary sources such as articles, books, reports, magazines, newspapers, and internet websites. The information gathered is presented in a systematic manner.

Conclusion:

Digital transformation is a powerful catalyst for inclusive growth in rural India. With continued investment in infrastructure, digital literacy, and localized solutions, the dream of a digitally empowered rural Bharat is becoming a reality. Rural entrepreneurship is a vital tool for transforming India's villages into self-reliant, prosperous communities. With the right support, skills, and infrastructure, rural India has the potential to become a vibrant engine of innovation, employment, and economic growth. Digital transformation is a powerful enabler of rural entrepreneurship, contributing to inclusive growth, poverty reduction, and economic resilience. With continued investment in infrastructure, education, and supportive policies, rural India is poised to become a dynamic hub of innovation and enterprise.

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Emerging Consumer Behaviour Trends in the Digital Economy: A Multidisciplinary Perspective

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Abstract
The The digital economy has brought about a transformative shift in consumer behaviour, reshaping the ways individuals interact with products, services, and brands. Rapid advancements in technology—particularly in artificial intelligence (AI), big data analytics, mobile applications, and digital payment platforms—have created a dynamic environment in which consumer preferences evolve faster than ever before. In parallel, changing demographics and heightened social awareness have given rise to more informed, conscious, and value-driven consumers. This paper critically examines emerging consumer behaviour trends within the framework of the digital economy by adopting a multidisciplinary approach that integrates insights from commerce, economics, and digital marketing. It highlights how digital tools and platforms have altered the traditional consumer decision-making process, emphasizing the rise of mobile commerce, personalized user experiences, real-time shopping, influencer-driven marketing, and ethical consumption patterns. Additionally, the study explores how social commerce and AI-powered recommendations are influencing purchase intentions, trust-building, and brand loyalty. Furthermore, the paper delves into the increasing emphasis on sustainability and transparency in consumer choices. Today's consumers are not only concerned about convenience and price but are also motivated by the social and environmental impact of their purchases. This marks a significant behavioural shift that challenges companies to adapt and realign their branding and operational strategies. Through the analysis of recent academic literature, statistical data, and market insights from 2023–2024, the study presents an in-depth understanding of how these behavioural changes are unfolding across different markets, especially in the context of developing economies like India. The findings underscore the need for businesses to be agile, data-centric, and ethically aligned in order to stay competitive in the digital-first world. This research contributes to the growing body of knowledge on digital consumerism and offers valuable implications for entrepreneurs, marketers, and policy-makers navigating this evolving landscape.

Keywords: Digital economy, consumer behaviour, e-commerce, personalization, sustainability, mobile commerce, social commerce

1. Introduction

In the last decade, the digital economy has witnessed exponential growth, fueled by technological innovations, mobile penetration, and evolving consumer expectations. As digital ecosystems become more robust, consumer interaction with brands, products, and services has drastically shifted. The rise of platforms such as Amazon, Flipkart, Instagram, and Google Pay has redefined convenience, comparison, trust, and engagement. Moreover, younger demographics—especially Millennials and Gen Z—demand higher ethical standards, seamless user experiences, and personalized offerings. Understanding these shifts is crucial not just for marketers but also for entrepreneurs, economists, and policymakers. Consumers are no longer passive recipients of advertising; they are active participants in the value creation process. The internet and mobile apps allow consumers to compare prices, read reviews, and interact with brands in real-time. This participation fosters brand loyalty or, conversely, backlash. Subscription models, gamification, and augmented reality (AR) are new tools used to keep users engaged. Economic variables such as inflation and job insecurity have also begun shaping digital consumption patterns. Therefore, analyzing emerging consumer trends requires more than just a marketing perspective—it demands an integrated view spanning psychology, economics, data analytics, and commerce. The interplay of technology with human behavior has created hybrid consumers who oscillate between convenience, value, emotion, and ethics in their decision-making processes. With artificial intelligence reshaping search algorithms and preferences, businesses must stay agile to cater to these shifting expectations. This paper attempts to decode the emerging patterns of consumer behaviour in the digital economy by looking through a multidisciplinary lens.

2. Review of Literature

2.1. Sharma, A. (2023)

In a study on "Digital Disruption and Indian Consumer Behaviour," Sharma observed a strong correlation between influencer marketing and impulse purchases, especially among Gen Z consumers. The study emphasized the rising impact of social validation and user-generated content on online buying habits. The study also suggested that platforms with high visual content (like Instagram and YouTube) increase purchase probability by over 35% compared to text-based promotions. It was also found that consumer satisfaction is now closely linked to social media response time and brand visibility.

2.2. Patel, R., & D'Souza, M. (2024)

Their work titled "Sustainable Consumption Patterns in the Digital Age" found that 63% of digital consumers actively seek brands aligned with environmental or ethical values. The authors highlight how sustainability is no longer a niche preference but a mainstream demand driver. In their empirical analysis, they demonstrated how younger consumers aged 18–35 are more likely to switch brands for sustainability reasons. They also found that mobile apps with carbon footprint tracking features see higher engagement. Brand transparency, such as disclosing sourcing practices, was observed to boost consumer trust and advocacy.

2.3. Zhang, Y. (2023)

Zhang's global review, "Evolving E-Commerce Trends Post-COVID," underlines the dominance of mobile commerce, with over 70% of global consumers preferring mobile devices over desktops for online shopping. The study also noted an increase in voice-assisted purchases through smart devices like Alexa and Google Home. Zhang explained how AI-based suggestions and intuitive UIs (user interfaces) have significantly enhanced user satisfaction. It was also observed that mobile shoppers are more susceptible to flash sales and push notifications than desktop users.

2.4. Kumar, V., & Joshi, P. (2024)

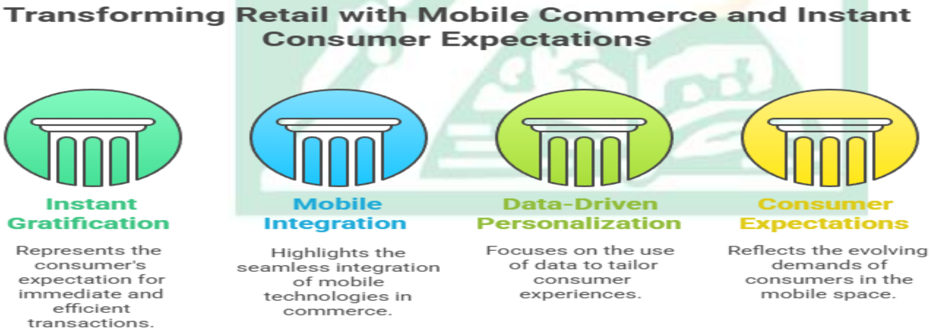
In their research on "Trust and Data Privacy in the Digital Consumer Era," they found that while personalization increases conversion rates, data privacy concerns are causing a paradox, leading to trust gaps. Their study emphasized the urgent need for ethical data policies.

3. Objective of the Paper

The objective of the paper is to explore the emerging consumer behaviour trends influenced by digital transformation and technological advancement. It aims to offer a multidisciplinary perspective by integrating viewpoints from commerce, economics, and digital marketing. The paper highlights major behavioural shifts including personalization, sustainability, mobile-first engagement, and trust dynamics. It also attempts to provide statistical insights and strategies for businesses to align with these evolving trends.

4. Rise of Mobile Commerce and Instant Gratification

Mobile commerce has become a cornerstone of the digital economy. With the proliferation of smartphones and cheap internet data, the consumer's journey now begins and ends on mobile. Features such as one-click purchases, predictive search, and real-time notifications create an environment of instant gratification. Consumers expect speed, efficiency, and relevance in every transaction. Apps are now integrating AI-powered chatbots to solve queries in real time, enhancing user retention.



Push notifications, location-based offers, and voice search have further redefined convenience. In addition, payment solutions like UPI, Google Pay, and Paytm have significantly reduced friction in the checkout process. Retailers who fail to optimize for mobile lose a significant chunk of potential sales. The mobile-first strategy has also created new micro-moments—where consumers act instantly to satisfy needs—and businesses must compete for attention in these brief windows. Moreover, mobile commerce is also increasingly data-driven, enabling personalized ads and customized app interfaces based on user behavior. Instant gratification is not just desired—it is expected.

5. Social Commerce and Influencer Economy

Social commerce is now one of the fastest-growing subsets of e-commerce. With the integration of "Shop Now" features directly on Instagram, Facebook, and YouTube, consumers can make purchases without even visiting a traditional e-commerce site. Influencers—especially micro and nano influencers—are trusted more than celebrities due to their relatability and authenticity. Consumer buying decisions are increasingly shaped by peer reviews, unboxing videos, product demos, and live streaming. Influencers bridge the gap between brands and buyers, offering an emotional connection that traditional ads can't. Influencer-generated content often doubles as testimonials, reducing buyer hesitation and increasing brand confidence. Augmented Reality (AR) filters, product trials, and real-time interaction have transformed social platforms into experiential shopping zones. Social commerce is also revolutionizing rural and semi-urban markets, where trust plays a bigger role than product specs. Collaborative marketing, giveaways, and affiliate links are driving the viral nature of commerce.

Furthermore, social commerce platforms now use algorithms to match products with consumers based on past likes, follows, and engagement patterns. Live commerce, particularly in Asia, has made way for “shoppertainment” where entertainment and shopping converge. This transformation means that commerce is no longer a separate activity; it's embedded within social interaction. Brands investing in influencer partnerships and live commerce are witnessing higher ROIs and more organic growth.

6. Ethical and Sustainable Consumption

Today’s consumers are not only buying products; they are endorsing values. Ethical consumption is at the heart of this transformation. Consumers prefer brands that are cruelty-free, eco-friendly, socially responsible, and transparent in their practices. This includes carbon-neutral delivery, biodegradable packaging, fair trade sourcing, and support for local artisans.

Many digital platforms now feature filters for “sustainable” or “organic” products. Eco-labels and certifications significantly influence purchase decisions. Conscious consumers actively research company ethics, making brand reputation critical to long-term success. Subscription-based eco-boxes, second-hand online marketplaces, and “buy less, buy better” movements are growing. Additionally, consumers are engaging in brand activism—rewarding or boycotting businesses based on political or environmental stances. Brands such as Patagonia and The Body Shop have thrived due to their commitment to sustainability. The digital medium has also allowed brands to document and share their supply chains, giving consumers real-time visibility into sourcing and production. Ethical consumption is no longer driven by price or luxury but by purpose and transparency.

7. Research Methodology

a. Type of Data:

Secondary data collected from academic journals, Statista, reports by consulting firms (Accenture, Nielsen), and government data portals (MeiTY, DPIIT) for the years 2023–2024.

b. Type of Research:

Descriptive and analytical in nature, employing a multidisciplinary approach from the fields of commerce, marketing, and economics.

c. Period of Research:

The period of study is January 2020 to March 2024

Table: Online Shopping Behaviour in India (2023–2024)

Behavioural Trend	% of Online Consumers	Growth YoY
Prefer mobile shopping over desktop	76%	+11%
Influenced by social media recommendations	61%	+14%
Value sustainability in purchase decisions	68%	+9%
Prefer one-day delivery or faster	57%	+7%
Concerned about data privacy	65%	+6%

Source: Nielsen, Accenture Reports 2023-24.

8. Conclusion

The evolution of consumer behaviour in the digital economy is fast, complex, and multifaceted. Technology has empowered consumers with more information, greater choices, and instant access to global markets. From mobile commerce and influencer-driven buying to sustainable consumption and data privacy awareness, new behavioural patterns are emerging. Businesses must adapt not only their technology stacks but also their values, communication, and service models. The integration of commerce with ethics, convenience, and personalization reflects a paradigm shift in consumption. The future belongs to businesses that listen, evolve, and lead with purpose. Digital transformation has made consumers not only more connected but also more critical and conscious. Understanding these shifts is essential to surviving and thriving in the emerging digital ecosystem.

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The Role of Capital Markets in Financing Green Energy Initiatives in India

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Abstract: The global transition towards sustainable energy systems necessitates significant financial investments, far exceeding public funding capabilities. Capital markets, through mechanisms such as green bonds, sustainability-linked loans, and equity investments, have emerged as pivotal platforms for mobilizing the required capital. This paper explores how capital markets facilitate the financing of green energy initiatives in India and other countries, the challenges they face, and their potential to accelerate the energy transition. Drawing on empirical data and case studies, the research evaluates the effectiveness of capital market instruments and provides policy recommendations to enhance their impact.

Keywords: Capital markets, green finance, India, renewable energy, green bonds, sustainable investing, ESG, institutional investors, climate finance.

Introduction: The urgency of climate change and the need to decarbonize economies have spurred a global push for green energy development. From solar and wind to emerging technologies like green hydrogen and carbon capture, these initiatives demand substantial investments. While governments provide policy support and seed funding, the bulk of long-term financing must come from private sources. Capital markets offer a scalable and efficient avenue for channelling private capital into green energy projects. This paper focuses particularly on the role of capital markets in India alongside global experiences.

Capital Markets and Sustainable Finance Capital markets encompass equity, debt, and derivatives markets that facilitate the trading of financial securities. In the context of green energy, capital markets serve as a conduit for investment through:

- **Green Bonds:** Fixed-income instruments earmarked for environmentally beneficial projects.
- **Sustainability-Linked Bonds (SLBs):** Bonds with financial characteristics tied to the issuer's environmental performance.
- **Green Equity Investments:** Direct investments in renewable energy firms or funds with green mandates.
- **Yield cos:** Publicly traded companies formed to own and operate renewable energy assets, offering predictable cash flows.

Growth and Evolution of Green Finance Instruments Since the first green bond issuance by the European Investment Bank in 2007, green finance has seen exponential growth. According to the Climate Bonds Initiative, green bond issuances reached over $500 billion in 2023 alone. In India, the first green bond was issued by Yes Bank in 2015, followed by a steady increase in issuances from public and private sector entities such as SBI and REC Ltd. Innovations like SLBs and ESG-themed ETFs have expanded the scope and investor base of green finance worldwide. Capital markets now provide financing across the project lifecycle—from development and construction to operation and expansion.

Case Studies

- **India's Green Bond Market:** India ranks among the top 10 countries for cumulative green bond issuance. Proceeds have been used for solar and wind power projects, energy efficiency, and sustainable transport. India's Securities and Exchange Board (SEBI) has also introduced guidelines for green debt securities to promote transparency.
- **Poland's Sovereign Green Bond:** Poland became the first sovereign to issue a green bond in 2016. Proceeds funded renewable energy and sustainable transportation projects, with transparent reporting frameworks enhancing investor confidence.
- **Private Sector Leadership: Tesla, Enphase Energy, and ReNew Power (India):** Equity markets have been instrumental in the rise of clean energy firms like Tesla and Enphase. In India, ReNew Power has attracted capital through public and private markets, including a U.S. SPAC listing.
- **Yieldcos in the U.S.:** Companies like NextEra Energy Partners have used the yieldco model to attract institutional investors seeking stable returns from renewable assets, bridging the gap between infrastructure finance and public equity.

Challenges in Mobilizing Capital Despite rapid growth, several challenges hinder the optimal utilization of capital markets for green energy:

- **Greenwashing Risk:** Lack of standardized definitions and verification protocols can lead to misleading claims.

- **Regulatory Fragmentation:** Diverse national standards create barriers for cross-border investments.
- **Market Maturity:** In emerging markets like India, underdeveloped capital markets and limited green investment products restrict growth.
- **Data and Disclosure Gaps:** Inconsistent ESG disclosures reduce transparency and comparability across issuers.

Policy and Regulatory Developments To enhance credibility and transparency, several regulatory bodies and institutions have introduced frameworks:

- **India's SEBI Green Bond Guidelines:** Define eligible project categories and disclosure norms.
- **EU Green Bond Standard:** A voluntary standard to align green bond issuance with EU taxonomy.
- **TCFD and ISSB Standards:** Frameworks that improve climate-related financial disclosures.
- **Sustainable Finance Disclosure Regulation (SFDR):** Mandates ESG disclosure for financial market participants in the EU. These efforts aim to build investor confidence and ensure accountability.

The Role of Institutional Investors Institutional investors—including pension funds, insurance companies, and sovereign wealth funds—play a critical role in scaling green energy finance. In India, the National Investment and Infrastructure Fund (NIIF) has supported renewable energy projects through blended finance models. Globally, many institutional investors have adopted ESG integration strategies and committed to net-zero portfolios, further driving green investment.

Emerging Trends and Technologies The green finance landscape continues to evolve:
Transition Finance: Instruments that support carbon-intensive firms in their path toward decarbonization.
Tokenization of Green Assets: Blockchain-based solutions enabling fractional ownership and greater transparency.
Nature-Based Solutions (NbS): Investment in reforestation, wetland restoration, and other projects with ecological benefits is gaining traction alongside renewable energy.
Securitization of Renewable Assets: India and other countries are exploring asset-backed securities to scale solar rooftop and microgrid investments.
Impact Assessment and Performance Empirical studies suggest that green bonds and ESG-focused equities often match or outperform their conventional counterparts, especially in volatile markets. In India, green bonds have shown steady returns and high subscription rates, especially from international investors. However, robust impact measurement is vital to validate environmental benefits. Third-party verification and lifecycle assessments are increasingly being integrated into project evaluations.
Policy Recommendations To maximize the role of capital markets in green energy financing:
Standardization: Promote globally harmonized taxonomies and reporting standards.
Capacity Building: Support developing countries like India in building sustainable finance infrastructure.
Blended Finance Models: Leverage public funds to de-risk private investments, as demonstrated by NIIF.
Incentives: Offer tax incentives or risk guarantees for green issuances.
Investor Education: Increase awareness of sustainable finance products and risks.

Conclusion Capital markets are indispensable to achieving global climate goals. By providing diversified, scalable, and efficient funding mechanisms, they bridge the financing gap for green energy initiatives. India's experience illustrates both the potential and the hurdles for emerging markets in leveraging capital markets. As the green finance ecosystem matures, continued innovation, regulation, and collaboration—both domestic and international—will be crucial to unlocking its full potential and ensuring a just and sustainable energy transition.

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Green Computing: Latest Trends and Techniques

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Abstract
In recent years green computing has gained huge popularity due to growing awareness about the environment, need of saving the natural resources and making hazard free surrounding. Not only government agencies but also private sector have taken the problem of rising energy consumption, e-waste dumping, toxic computer materials which has ill effect on human being seriously and has taken appropriate actions as a contribution towards green environment. This movement has led to various researches thus inventing energy –efficient, less power consumption devices and techniques not only for the home computers but also for Datacentre, Client –Server systems. It has also motivated researches to explore other fields like cloud computing, virtualisation, network proxies, efficient use of thin client and so on. Within a span of few years green computing has gained a huge popularity for its long-term profit returns.
This paper aims to present the current practices implemented in the field of eco-friendly IT and the future trends possible in Green Computing.
Keywords: green computing, eco-friendly technology, green cloud, Green IT, Smart Computing

Objectives:
1. To understand why the green computing is beneficial for the environment.
2. To identify key issues relevant to green computing and evaluate different trends.

Introduction
If we will consider conventional computers following had always been the major issues related to them:

Toxins
Our computer is composed of a wide variety of materials, including some—such as lead, nickel, cadmium, polychlorinated biphenyles and mercury—that can pose health risks to people if they are dumped in landfills. According to the U.S. Environmental Protection Agency (EPA), Americans throw out more than 2 million tons of consumer electronics annually, making electronic waste one of the fastest growing components. Once in landfill, these toxic materials leak out into the environment, contaminating land, water and the air. By 2017, Kuehr expects the volume of end-of-life TVs, phones, computers, monitors, e-toys and other products to be enough to fill a 15,000-mile line of 40-tonne lorries. In Europe, Germany discards the most e-waste in total, but Norway and Liechtenstein throw away more per person. Britain is now the world's seventh most prolific producer, discarding 1.37m tonnes, or about 21kg per person. Thus, one can assume how much toxin material knowingly or unknowingly we expose in the environment.

Power Consumption
The average desktop computer consumes about 120 watts of electricity. On average, the monitor consumes 75 watts, and the CPU consumes 45 watts. In sleep mode (also called hibernate, standby, or power down mode), a computer consumes about 15 watts, a savings of over 80%. Individual servers are consuming increasing amounts of electricity over time. Before the year 2000, servers on average drew about 50 watts of electricity. By 2008, they were averaging up to 250 watts. As more data centers switch to higher density server form factors, the power consumption will increase at a faster rate. Analysts have forecasted that if the current trend is not declined, then the power to run servers will be equal to or greater than the server cost. Power usage is an especially relevant issue for operating a green information system— the more power that's used, the more money that's spent and the greater the carbon footprint.

Heat
Thermal radiation is just the by-product of electromagnetic movement within millions of circuits, and the internal resistance it encounters – or to put it another way, electricity powering your computer is the simple reason why your computer becomes hot. A computer's core, its Central Processing Unit (CPU), naturally generates heat as it carries out algorithms, as does the Graphics Processing Unit (GPU), which typically handles 3D imaging for display. The energy you consume to cool that equipment is also an issue. The more equipment you have (and the less efficient it is), the more heat it generates and the more electricity you use to cool that equipment. Thus, high heat dissipation from computer has always been a major issue, as more the heat dissipation more will be the requirement of cooling devices thus increasing the overall costing of IT firm.

Equipment Disposal
The EPA reports that over 112,000 computers are discarded every single day, in the U.S. alone. That's 41.1 million desktops and laptop computers per year. Electronic waste from equipment of all sizes includes dangerous chemicals like lead, cadmium, beryllium, mercury, and brominated flame retardants. When we dispose of gadgets and devices improperly, these hazardous materials have a high risk of polluting the air, contaminating soil, and leaching into water sources. Health risks range from kidney disease and brain damage to genetic mutations. Scientists have discovered that Guiyu, China, has the highest levels of cancer-causing dioxins in the world. Seven out of ten children in the villages of Guiyu have too much lead in their bodies; 82% tested positive for lead poisoning. The amount of time they

spend at dumping grounds is dangerous enough; factor in these poisons and chemicals and these habits can become be fatal.

Why so huge demand of Green computing:

A step towards green IT has led to some short- and long-term results and benefits such as

- Less emission of toxic material has healthy impact on environment
- Use of proper green devices lowers energy costs
- Reduced health risk for computer workers and recyclers
- Reduces paper work and less burden on paper industry
- Effective utilization of resources
- Improved operational efficiency
- Reduced carbon footprint
- Cost saving
- Longer lasting computing devices
- Improved corporate image

Goals of Green Information Technology

There are other goals of green information technology, most notably at the design and manufacturing stages. In all cases, four main aims are:

- To reduce the amount of energy consumption by inventing energy efficient devices
- To produce equipment and devices which are less harmful, having less toxic material.
- To develop biodegradable materials so that it doesn't affect the environment when thrown in landfill.
- To increase the life of the devices, make the devices reusable, refurbishable.

Global Initiatives and standards:

Basel action network

Basel Action Network is active in promoting the Basel Convention's toxic waste trade solutions BAN is based in Seattle, Washington, United States, with a partner office in the Philippines. It is active in fields like ending toxic trade, targeting a toxics-free future, Focusing on less electronic waste dumping in landfills.

The goal is achieved by means of different policies, finding proper solution to the current system and devices and engaging the corporate, public sector to create systematic changes.

Some chemicals in computer which has ill effect on us :

Harmful chemicals	**Computer components**	**Effects on human being**
lead	• Computer circuit boards' solder • Computer monitors' cathode ray tubes	- Accumulated amounts can cause brain damage, nervous damage, blood disorders, kidney damage and developmental damage to fetus. - Affects brain development of children.
Mercury	• Switches • Flat screens • LCD screens • Printed wiring boards	- High levels in bodies can cause chronic brain and kidney damage. - Respiratory and skin disorders through consumption of fish with high levels of mercury.
Plastics & Polyvinyl chloride (PVC)	• Circuit boards • Connectors • Plastic covers • Cables	Forms poisonous gases when burned that can cause cancer. - Reproductive and developmental problems. - Immune system damage.
Cadmium	• Circuit boards	- Long term exposure can cause kidney damage and weaken bones. - A known cancer-causing substance. - Neural damage.
Beryllium	• Motherboards • Connectors	- Cancer causing carcinogen (lung cancer). - Inhalation of fumes and dust. Causes chronic beryllium disease or beryllicosis.

EPEAT (electronic product environmental assessment tool)

EPEAT makes it easy to select high-performance electronics that meet an organization's IT and sustainability goals. EPEAT is managed by the Green Electronics Council, a non-profit organization founded in 2005.The system helps purchasers (governments, institutions, consumers, etc.) to evaluate the effect of a product on the environment. It assesses various lifecycle environmental aspects of a device and ranks products as Gold, Silver or Bronze based on a set of environmental performance criteria. EPEAT-registered products meet strict environmental criteria that address the full product lifecycle, from energy conservation and toxic materials to product longevity and end-of-life management. Over their lifetime, the 993.4 million EPEAT-registered electronics purchased globally since 2006 will deliver significant environmental benefits.

ROHS: Restriction of Hazardous Substances
ROHS was adopted in the year 2003 by European union. Restriction of Hazardous Substances (RoHS) Directive aims at eradicating six hazardous substances from new electronic equipment. These six substances are lead, mercury, cadmium, hexavalent chromium, polybrominated diphenylethers and polybrominated biphenyls, however they are allowed to be used in minor amounts if production is not possible without them. The RoHS 2 directive is an evolution of the original directive and became law on 21 July 2011 and took effect 2 January 2013. It addresses the same substances as the original directive while improving regulatory conditions and legal clarity. The RoHS 2 directive (2011/65/EU) contains allowance to add new materials and 4 materials are highlighted for this attention in the original version.
The four additional substances are

1. Bis(2-Ethylhexyl) phthalate (DEHP)
2. Benzyl butyl phthalate (BBP)
3. Dibutyl phthalate (DBP)
4. Diisobutyl phthalate (DIBP)

WEEE DIRECTIVES
WEEE stands for waste electrical and electronic equipment. The directive imposes the responsibility for the disposal of waste electrical and electronic equipment on the manufacturers or distributors of such equipment. It is end-of-life electrical and electronic equipment and covers virtually everything related to electronic devices, equipment. The WEEE directive sets a total of 10 categories of WEEE for reporting purposes.

- Large household appliances
- Small household appliances
- IT and telecommunications equipment
- Consumer equipment
- Lighting equipment
- Electrical and electronic tools
- Toys, leisure and sports equipment
- Medical devices
- Monitoring and control instruments
- Automatic dispensers

Green computing certifications:
Some certifications demonstrate that an individual has specific green computing knowledge, including:

- Green Computing Initiative - GCI offers the Certified Green Computing User Specialist (CGCUS), Certified Green Computing Architect (CGCA) and Certified Green Computing Professional (CGCP) certifications.
- CompTIA Strata Green IT is designed for IT managers to show that they have good knowledge of green IT practices and methods and why it is important to incorporate them into an organization.
- Information Systems Examination Board (ISEB) Foundation Certificate in Green IT is appropriate for showing an overall understanding and awareness of green computing and where its implementation can be beneficial.
- Singapore Infocomm Technology Federation (SiTF) Singapore Certified Green IT Professional is an industry endorsed professional level certification offered with SiTF authorized training partners. Certification requires completion of a four-day instructor-led core course, plus a one-day elective from an authorized vendor.
- Australian Computer Society (ACS) The ACS offers a certificate for "Green Technology Strategies" as part of the Computer Professional Education Program (CPEP). Award of a certificate requires completion of a 12-week e-learning course designed by Tom Worthington, with written assignments.

How to achieve it
Virtualisation
Virtualization is the process of running a virtual instance of a computer system in a layer abstracted from the actual hardware. Most commonly, it refers to running multiple operating systems on a computer system simultaneously. To the applications running on top of the virtualized machine, it can appear as if they are on their own dedicated machine, where the operating system, libraries, and other programs are unique to the guest virtualized system and unconnected to the host operating system which sits below it. A data center consumes the power that can otherwise be used to power thousands of homes. The huge levels of power consumption are what makes data centers

and environmentalists look for ways to reduce the power used and make data centers far more energy efficient than they currently are. The energy saved per server would translate into approximately 7000 Kilo Watt hours per year, which is big with such tremendous potential for energy savings, Virtualization is the best to practice green computing, especially data centers in India.

Heating, ventilation, and air conditioning:

The amount of energy used up traditional types of Heating, Ventilating and Air Conditioning systems is about 40% of the total building energy consumption. It also accounts for a large number of harmful emissions released into the environment. Therefore, we need to implement the use of green systems that will help in not only improving indoor comfort and quality but also in reducing energy consumptions and harmful CO_2 emissions. HVAC is defined as a system that is responsible for controlling and maintaining the thermal comfort of indoor rooms.

Cloud computing:

Cloud computing is the delivery of computing services—servers, storage, databases, networking, software, analytics and more—over the Internet ("the cloud"). Companies offering these computing services are called cloud providers and typically charge for cloud computing services based on usage. Forrester estimates that worldwide spending on public cloud computing services will grow from $25.5 billion in 2011 to $160 billion in 2020, a 22 percent annual growth rate. Businesses are increasingly substituting cloud-based for internal resources to capture benefits like faster scale-up/scale-down of capacity, pay-as-you-go pricing, and access to cloud-based applications and services without buying and managing on-premises infrastructure.

Cloud computing serves following benefits:

- Virtualisation of resources
- Automation software helps to maximise merging and utilisation
- simplify maintenance – less hardware means a smaller support staff,

Economizer

An economizer is a mechanical device used to reduce energy consumption. Economizers are commonly used in data centers to complement or replace cooling devices like computer room air conditioners (CRACs) or chillers.

Benefits

- Economizers Save Money and Enhance Performance
- Reduced Energy Spending
- Improved Ventilation
- Extended Life for Other Equipment

Thin client

An old computer should continue to be used if it meets the user requirements. Otherwise, it can be given to someone who needs it or the functional components may be used from a retired product. By using the hardware for a longer period of time, the total environmental footprint caused by computer manufacturing and disposal will be reduced greatly. Thin client is the system with minimum hardware resources, meant to do a particular type of work and often depend on server for its resources. So, using the old systems and converting them to thin clients is good idea instead of purchasing new systems.

Refurbish

Old computers and servers can be refurbished to meet new requirements. An old computer and other IT hardware can be made almost new again by reconditioning and replacing their parts. Rather than buying a new computer, refurbished IT hardware can be bought from the market. Nowadays, more enterprises are open to purchasing refurbished goods, and the market for refurbished IT equipment is growing. Thus, refurbish market avoid major of systems landing into dumping grounds and increases the lifetime of the systems.

Outsourcing

It can be considered a step towards greening your company. Outsourcing takes the work out of the company's hands completely and sends it to another company. Some of the secondary functioning of the company can be outsource, while the primary or core duties are performed by the company itself, eg customer service, can be handled by a contractor.

Going paperless

Making the best use of technology such as internet, intranet and extranet a company can perform its daily transaction in a paperless way. The paperless office brings sundry benefits, not only to your organization, but also to the environment, including the following:

 ISBN No- 978-93-342-5395-5

• Lower paper costs • Less pollution • Less paper use • Smaller waste disposal cost • Lower storage costs • Less energy use • Less storage space needed • Fewer trees cut • Lower postage costs • Less pulping • Easier document handling • Less waste to be recycled, burned, or sent to a landfill • Less waste production by the organization

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Bibliometric Portrait on Social Media in Relation to Libraries

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Abstract

The science of quantitatively analysing publications is known as bibliometry. In the field of intellectual and scientific research, it is frequently used to assess the impacts, trends, and patterns associated with publications. Bibliometric analysis evaluates the influence and production of writers, journals, organisations, and even entire academic disciplines using statistical and mathematical techniques. This work offers a "Bibliometric" analysis of the literature on "Social media" pertaining to "Library," with a focus on publications beginning in 1945 as per SCOPUS Database. The research outcome is based on author keywords, works by different countries, organisations, and authors, as well as solo and collaborative author publications found through searches of the Scopus Database and the Authorship Collaboration Network, citation analysis, and term co-occurrences application VOSviewer and for maps Datawrapper generation tools have been applied. Excluding 2023, the results indicate a healthy development in literature, with the majority of publications coming from United State of America.

Keywords: Bibliometric Study, Bibliometry, Social Media

Introduction

A quantitative analysis of academic publications, such as books, journals, and conference proceedings, is called "bibliometry." It is used, typically in the context of scholarly and scientific publications, to analyse and quantify various elements of bibliographic data. It comprises analysing correlations, patterns, and trends in a group of articles or documents using statistical and mathematical techniques. The progress of scientific subjects, the output of researchers, and the importance of their work can all be clarified by bibliometric analysis. It makes an effort to measure and evaluate various aspects of scholarly communication, including the importance and influence of publications, the output of authors and academic institutions, and the collaboration patterns among academics. Researchers can use it to gauge their own contributions to their field, identify research trends, and make well-informed decisions about where to publish their work in the academic and research worlds. Additionally, it provides quantitative insights on the impact of scholarly work. The term "social media" describes websites and online platforms that let people engage in social networking activities as well as produce and distribute content. Through these platforms, people can communicate in a variety of ways, interact with one another, and share information. Computer-based tools that make it easier to create, share, and exchange knowledge, concepts, and multimedia content within online communities and networks are referred to as social media. Through these platforms, people and groups can communicate digitally and connect, engage, and interact with one another. Creating and disseminating user-generated content on social media usually entails text, photos, videos, and links. Social media is becoming an essential component of contemporary communication and is important for influencing public opinion, spreading news, and promoting interpersonal relationships. Social media raises worries about privacy, online harassment, disinformation, and the influence of social media on mental health, even while it also has beneficial features like connecting people, sharing information, and establishing communities. The function and influence of social media on society are probably going to shift even more as technology develops.

In the digital age, social media and library integration is becoming more and more crucial. Social media channels present libraries with exceptional chances for outreach, engagement, and communication. The following are some particular ways that social media and libraries interact:

Promotion of Events and Programmes: Libraries can advertise forthcoming workshops, events, and programmes on social media. This promotes community involvement and helps reach a larger audience.

Resource Sharing: Using social media platforms, libraries can notify their patrons about upcoming book releases, online resources, and other things. This makes it easier for users to find resources.

Participation in the Community: social media gives libraries a platform to interact with the public. In order to build stronger community relationships, libraries can answer questions, distribute user-generated content, and take part in discussions.
Digital Narrative: Social media is a useful tool for libraries to employ for digital storytelling, where they may share success stories, initiatives, and the effects of their services on community members.
Reader's Advice: Librarians can converse with customers about their literary interests and offer book recommendations and reading lists via social media. This strengthens the library's position as a helpful tool for readers.
Information Exchange: Social media networks are useful for libraries to disseminate critical information, such as revisions to policy, holiday schedules, and operation hours adjustments.
Informational Content: Libraries can utilise social media as a platform to disseminate informational content, such as guides on how to use the resources in the library efficiently, advice on information literacy, and suggestions for online courses.
Virtual Events and Book Clubs: Libraries can now conduct online programmes, book clubs, and interactive debates using social media, enabling patrons to participate from any location. This is made possible by the growing popularity of virtual events.
Partnerships & Collaborations: Social media makes it easier to work together with institutions, other organisations, and nearby companies. These platforms can be used by libraries to promote collaborations, cooperative events, and joint projects.
Support and Advocacy: Libraries can utilise social media to promote the value of libraries in their local communities. This involves disseminating information about the advantages of library services as well as success stories and testimonies.
Surveys and comments: Libraries can use social media to get comments from their users. Social media platforms can be used by libraries to gather information about user preferences and requirements through surveys and polls.
Inclusivity and Accessibility: Social media is a powerful tool that libraries may utilise to spread information to a varied audience and encourage inclusivity. This entails meeting the requirements of diverse groups, utilising accessible formats, and offering material in numerous languages.
Libraries must adjust their social media strategies to the requirements and tastes of their particular community. Engaging on social media regularly and thoughtfully can improve the library's exposure, foster greater patron contact, and support community development initiatives. Now-a-days, there is an eternal link between social media and library. Literature appears also on this topic. This paper explores the bibliometric study of social media in relation to library.

Literature Review

In the subject of bibliometrics, this research examines growth patterns, core journals, and author distribution using data from Library and Information Science Abstracts (LISA). The expansion of literature does not follow any clear trend. 'Scientometrics' is determined to be the core journals in this field by applying Bradford's law of scattering. To find the productivity patterns of authors, Lotka's law was applied. It is noted that the distributions of the writers deviate from the original Lotka's law. The study also determined the top 12 authors in this subject, with over 20 publications each (Patra, Swapan kumar & Bhattacharya, Partha & Verma, Neera, 2006)

This study presents new issues, assesses bibliometric studies in tourism, and provides critical conversations for theory development and further research. 190 articles with bibliometric analyses from prestigious publications on hospitality and tourism were chosen, and they underwent critical analysis, in order to accomplish this goal. The study's conclusions show that after 2008, the number of bibliometric articles published in these journals increased dramatically. But the majority of studies turned out to be systematic review studies, with only a small number using relational and evaluative bibliometric studies. According to study findings, there is currently a lack of research, especially in relational bibliometric studies related to tourism. One of the earliest studies in this field to provide critical analysis and recommendations for theory building and further research along these lines is this one. (Mehmet Ali Koseoglu, Roya Rahimi, Fevzi Okumus, Jingyan Liu, 2016)

This work offers a bibliometric study of the "Library Herald" journal for the years 2006–2010. The primary topics covered by the analysis are the quantity of publications, authorship patterns, subject-wise distribution of articles, average number of references per article, types of documents referenced, distribution of cited journals by year, and so forth. Every study highlights the journal's strengths and weaknesses, which will be beneficial for its continued growth. The findings indicated that of the 138 publications, 72 (52.17%) were contributed by a single author, and the remaining 66 (47.83%) were contributed by joint authors. According to the study, 89.85% of the contributions come from India, with the remaining 10.5% coming solely from outside sources. (Thanuskodi, S., 2011)
A relatively recent area of multidisciplinary study is tourist psychology. A bibliometric examination of the field of tourist psychology from 1990 to 2005 is included in this paper. During this time, citation patterns, Price, Lotka, and Bradford laws, as well as the development of scientific output, were examined. The findings indicated a notable expansion in the body of knowledge on the topic, along with a rise in co-authorship and institutional cooperation.

This new research topic is likewise characterised by the presence of empiric regularities and bibliometric rules found in other disciplines. (Barrios, M., Borrego, A., Vilaginés, A., Ollé, C., & Somoza, M., 2008).

This study ascertains the features and growth of the literature found in digital libraries. In order to investigate authorship patterns, authors' productivity and notable contributors, language- and year-wise article distribution, country-wise journal distribution, core journals in the subject area, and indexing term frequency, over 1,000 articles from the 1998–2004 period were gathered from LISA Plus and examined. The majority of articles (61%) were written by one author; author productivity did not follow Lotka's Law, with the exception of one case; the highest number of articles published in 2003 were in the journal D-lib Magazine; the maximum number of articles published were in English, which is the most productive language; and the distribution of articles almost followed Bradford's Law. The study offers a thorough review of authorship in the field of library and information science, making it pertinent to anyone with an interest in bibliometrics. (Singh, G., Mittal, R., & Ahmad, M.,2007).

Objectives

The objectives of this study are to:

- Investigate the access pattern
  - **Year wise**
  - **Document type wise**
  - **Source and Contributors wise**
  - **Language wise**
  - **Country wise**
  - **Domain wise**
- Investigate authorship pattern
  - **Author Productivity**
  - **Degree of Collaboration**
  - **Collaborative Index**
- Analyse authorship pattern by visual portrait
  - **Total Author Collaboration**
  - **Author Collaboration among Countries**
  - **Author Collaboration among Organization**
- Analyse term of occurrences by visual portrait
  - **Total keywords**
  - **Author keywords**
  - **Index Keywords**
- Visualize citation analysis and co-citation analysis

Scope & Methodology

This study has employed a general bibliometric procedure to determine its aims. Data have been retrieved on that particular domain as a registered member of the Scopus database using the search phrase ((TITLE-ABS-KEY (Social Media) AND TITLE-ABS-KEY(Library))) AND PUBYEAR > 1944 AND PUBYEAR < 2024 (Noruzi, 2017). Following retrieval, data were gathered, examined, and tallied while keeping the study's goals in mind. VOSviewer software has been utilised for citation analysis and word co-occurrences, and Datawrapper for map construction in order to depict the authorship collaboration network.

Data Analysis and Interpretation

The collected data were analyzed and presented in the form of simple tables and figures with suitable interpretation. The dataset revealed a lot of interesting results. The study analyzes 3557 literatures regarding social media and library which were published in the world.

Access Pattern

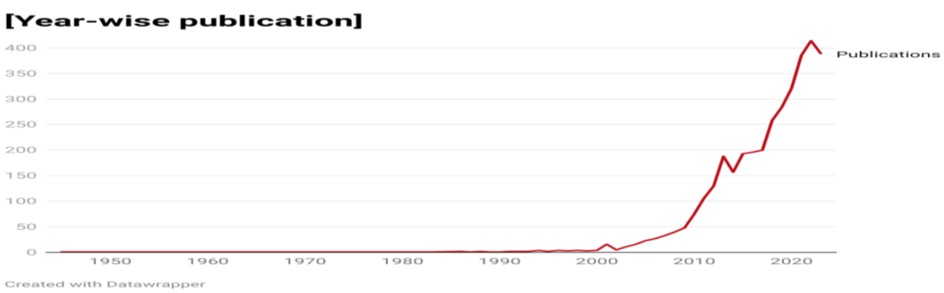

Figure-1: Year-wise publication

Year wise: The figure-1 represents that year wise distribution of publication. In total more than 3000 publications were identified through Scopus database. Among the total papers, published within the 1945 to 2023, the highest number of publications i.e. 414 documents have been published in 2022 and the followed by 389 published in 2023, 385 published in 2021.

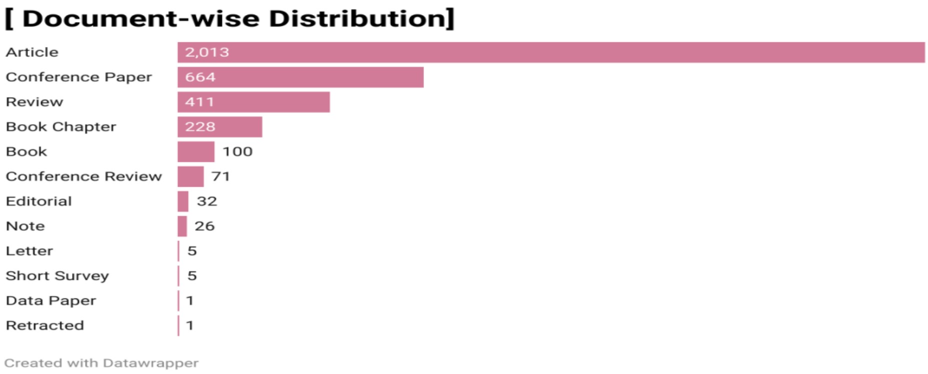

Figure-2: Document-wise distribution

Document type wise: Figure-2 indicates the document type wise distribution of publication on this topic. As per figure (fig.-2) 2013 journal articles has been identified through Scopus database. It is followed by Conference Paper (664) and Review (411).

Table-1: Source title wise distribution of publication (Top ten)

SOURCE TITLE	
Library Philosophy and Practice	134
Lecture Notes in Computer Science Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics	97
Proceedings Of the ACM IEEE Joint Conference on Digital Libraries	58
BMJ Open	52
Journal Of Academic Librarianship	44
Library Hi Tech News	43
Library Hi Tech	39
Ceur Workshop Proceedings	33
Journal Of Medical Internet Research	32
ACM International Conference Proceeding Series	31

Table-2: Top ten researchers

Name of Contributers	
Chiu, D.K.W.	12
Abrizah, A.	10
Alhoori, H.	9
Bhatti, R.	8
Bowler, L.	7
Marshall, C.C.	7
Nelson, M.L.	7
Nicholas, D.	7
Rachman, Y.B.	7
Anderson, K.E.	6

Source and Contributors: In this section, Table-1 represented that source wise distribution of publication. Source ‘Library Philosophy and Practice’ has received maximum number of publications on selected topic with 134. Table-2 presented the top ten contributors among selected documents. Following table (Table-2) shows that Chiu, D.K.W contributed more literature on a particular topic.

Table-3: Top ten languages

LANGUAGE	
English	3358
Spanish	67
Chinese	29
Portuguese	23
Croatian	17
French	14
Russian	14
German	12
Italian	9
Persian	9

Language wise Following Table-3 depicted the top ten languages according to number of publications of respective study. "English" language holds 1st position with 3358 publications and then followed by Spanish (67) and Chinese (29).

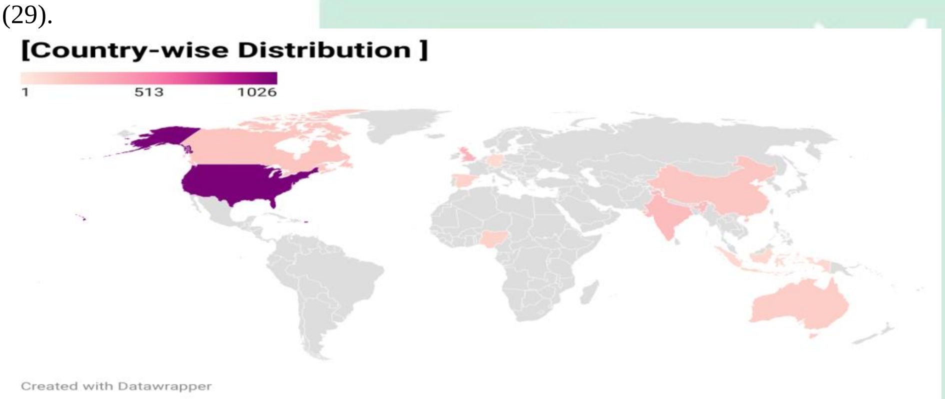

Figure 3-Country-wise publication

Country wise: From another aspect figure-3 measures the published documents according to affiliations of the authors. According to analysis of researchers United States holds 1st position with 1026 publications, UK holds 2nd position with 297 publications and India holds the 3rd ranks with 253publications.

Table-3: Domain-wise distribution

KEYWORD	
Social Media	1166
Human	605
Humans	453
Social Networking (online)	429
Digital Libraries	303
Libraries	274
Article	261
Systematic Review	255
Review	227
Academic Libraries	169

Domain wise: Table-4 depicts the top five domains according to number of publications of respective domains. Domain "Social Media" holds 1st position with 1166 publications. Then followed by "Human, Humans and Social Networking"

Authorship Pattern: Followingtable-5 shows the authorship pattern of research contributions published on regarding matter.

Table-5: Distribution of authorship pattern

	SA	MA		SA	MA		SA	MA
2023	64	325	2008	17	23	1993	2	0
2022	76	338	2007	12	21	1991	1	1
2021	84	301	2006	10	18	1990	2	0
2020	74	247	2005	13	10	1989	0	1
2019	84	200	2004	10	6	1988	2	0
2018	78	180	2003	4	7	1987	1	0
2017	69	131	2002	1	4	1986	1	1
2016	70	126	2001	8	8	1983	1	0
2015	69	124	2000	4	0	1982	1	0
2014	50	101	1999	2	1	1978	1	0
2013	60	128	1998	2	2	1975	1	0
2012	45	84	1997	1	2	1974	1	0
2011	100	66	1996	2	2	1966	1	0
2010	25	50	1995	2	0	1945	1	0
2009	23	25	1994	3	1			

* SA- Single Auth17orship; MA- Multiple Authorship

Total numbers of single authorship contributions are 988; total numbers of multiple authorship contributions are 2569. From the table-6 it becomes clear that only 988articles were published by single author whereas 2569 articles were contributed by two or more than two authors.

Author Productivity: Table 6 shows picture of average author per paper (AAPP) and productivity per author (PPA) in the selected time zone of this study. The formula for the AAPP and productivity per author are as follows.

Table-6: Author productivity

Year	Papers	Authors	AAPP*	PPA*	Year	Papers	Authors	AAPP*	PPA*	Year	Papers	Authors	AAPP*	PPA*
2023	389	196	0.503856	1.984694	2008	40	88	2.2	0.454545	1993	2	2	1	1
2022	414	186	0.449275	2.225806	2007	33	79	2.393939	0.417722	1991	2	3	1.5	0.666667
2021	385	197	0.511688	1.954315	2006	27	64	2.37037	0.421875	1990	1	1	1	1
2020	321	217	0.676012	1.479263	2005	23	49	2.130435	0.469388	1989	1	2	2	0.5
2019	284	184	0.647887	1.543478	2004	16	27	1.6875	0.592593	1988	2	2	1	1
2018	258	189	0.732558	1.365079	2003	11	28	2.545455	0.392857	1987	1	1	1	1
2017	200	182	0.91	1.098901	2002	5	10	2	0.5	1986	2	3	1.5	0.666667
2016	196	196	1	1	2001	16	37	2.3125	0.432432	1983	1	1	1	1
2015	193	183	0.948187	1.054645	2000	4	4	1	1	1982	1	1	1	1
2014	151	172	1.139073	0.877907	1999	3	4	1.333333	0.75	1978	1	1	1	1
2013	188	192	1.021277	0.979167	1998	4	7	1.75	0.571429	1975	1	1	1	1
2012	130	173	1.330769	0.751445	1997	3	7	2.333333	0.428571	1974	1	1	1	1
2011	106	166	1.566038	0.638554	1996	4	6	1.5	0.666667	1966	1	1	1	1
2010	75	176	2.346667	0.426136	1995	2	2	1	1	1945	1	1	1	1
2009	48	105	2.1875	0.457143	1994	4	7	1.75	0.571429					

AAPP*= average author per paper, PPA*= productivity per author

Average author per paper (AAPP) = Number of authors / Number of papers
Productivity per author (PPA) = Number of papers / Number of authors

From table 6, it is found that lowest AAPP is 0.449275with highest PPA is 2.225806in the year 2022. On the other side, highest AAPP at 2.545455with lowest PPA at 0.392857is seen in the year 2003

Degree of Collaboration: Table 7 describes the degree of collaboration among the authors. In this study the Degree of Collaboration (C) of the contributors has been calculated using the Subramanyam formula (Sarkar & Pal, 2020).

Table-7: Degree of collaboration

	Ns*	Nm*	(Ns +Nm)	C*		Ns*	Nm*	(Ns +Nm)	C*		Ns*	Nm*	(Ns +Nm)	C*
2023	64	325	389	0.835476	2008	17	23	40	0.575	1993	2	0	2	0
2022	76	338	414	0.816425	2007	12	21	33	0.636364	1991	1	1	2	0.5
2021	84	301	385	0.781818	2006	10	18	28	0.642857	1990	2	0	2	0
2020	74	247	321	0.76947	2005	13	10	23	0.434783	1989	0	1	1	1
2019	84	200	284	0.704225	2004	10	6	16	0.375	1988	2	0	2	0
2018	78	180	258	0.697674	2003	4	7	11	0.636364	1987	1	0	1	0
2017	69	131	200	0.655	2002	1	4	5	0.8	1986	1	1	2	0.5
2016	70	126	196	0.642857	2001	8	8	16	0.5	1983	1	0	1	0
2015	69	124	193	0.642487	2000	4	0	4	0	1982	1	0	1	0
2014	50	101	151	0.668874	1999	2	1	3	0.333333	1978	1	0	1	0
2013	60	128	188	0.680851	1998	2	2	4	0.5	1975	1	0	1	0
2012	45	84	129	0.651163	1997	1	2	3	0.666667	1974	1	0	1	0
2011	100	66	166	0.39759	1996	2	2	4	0.5	1966	1	0	1	0
2010	25	50	75	0.666667	1995	2	0	2	0	1945	1	0	1	0
2009	23	25	48	0.520833	1994	3	1	4	0.25					

Ns*= Number of single authored paper, Nm* = Number of multiple authored paper, C = Degree of Collaboration

The formula is as follows:
Degree of Collaboration (C) = Nm / Nm + Ns
Where,
C = Degree of Collaboration
Nm = Number of multiple authored paper
Ns = Number of single authored paper

Above table (Table-7) shows the individual year wise Degree of Collaboration. This table reveals that the highest value of DC is observed in the year 2023

Collaborative Index of Articles: Collaborative Index (CI) of articles is the mean number of authors per joint paper. To determine the mean number of authors per jointly authored paper, the following Elango and Rajendran’s formula (Elango & Rajendran, 2012) has been used.

Collaborative Index (CI) = Total number of authors / Total joint papers

Table 8: Collaborative Index (CI) of articles

Year	Total number of authors	Total joint papers	Collaborative Index
2023	196	325	0.603077
2022	186	338	0.550296
2021	197	301	0.654485
2020	217	247	0.878543
2019	184	200	0.92
2018	189	180	1.05
2017	182	131	1.389313
2016	196	126	1.555556
2015	183	124	1.475806
2014	172	101	1.70297
2013	192	128	1.5
2012	173	84	2.059524
2011	166	66	2.515152
2010	176	50	3.52
2009	105	25	4.2
2008	88	23	3.826087
2007	79	21	3.761905
2006	64	18	3.555556
2005	49	10	4.9
2004	27	6	4.5
2003	28	7	4
2002	10	4	2.5
2001	37	8	4.625
2000	4	0	-
1999	4	1	4
1998	7	2	3.5
1997	7	2	3.5
1996	6	2	3
1995	2	0	-
1994	7	1	7
1993	2	0	-
1991	3	1	3
1990	1	0	-
1989	2	1	2
1988	2	0	-
1987	1	0	-
1986	3	1	3
1983	1	0	-
1982	1	0	-
1978	1	0	-
1975	1	0	-
1974	1	0	-
1966	1	0	-
1945	1	0	-

It can be observed from table-8 that the maximum value of CI 4.9 is in the year 2005 and minimum value 0.55is in the year2022

Author Collaboration Network

4a) Author Collaboration

Figure4a: The threshold which has been set for the visual portrayal of author collaboration network is minimum of 5 documents of an author to be chosen. Out of the 9282 authors 42 only meet the threshold. After VOSviewer has calculated the total strength of the co-authorship links with other authors, 2 clusters have been formed in this network.

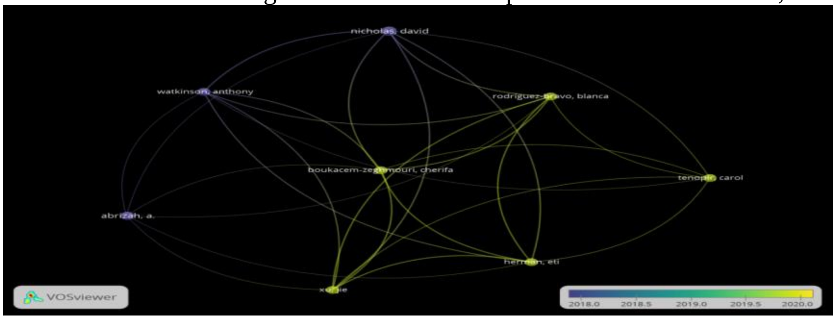

Figure4a: Author Collaboration

4b) Author Collaboration among Countries

Following figure (Figure-4b) presented the co-authorship links between the countries. The threshold which has been set for the visual portrayal of author collaboration network among countries is minimum of 5 documents of a country. Out of the 170 countries 75 meet the threshold.

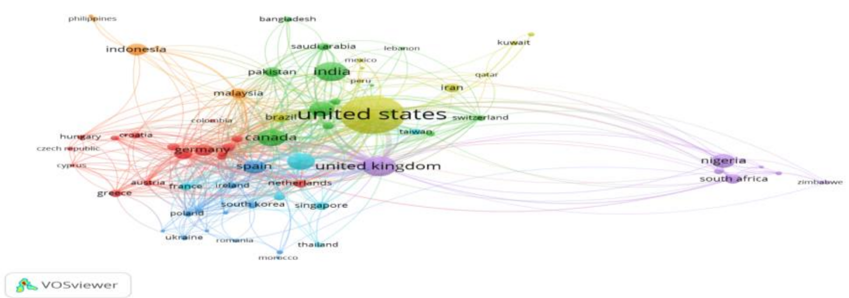

Figure4b: Author collaboration among countries

4c) Collaboration among Organization

Following figure (Figure-4c) presented the co-authorship links between the organization. The threshold which has been set for the visual portrayal of author collaboration network among countries is minimum of 2 documents of a country. Out of the 6602 organization 309 meet the threshold.

Figure4c: Author collaboration among organization

Analysis of Keywords

The primary subjects and research trends in this field can be inferred from a word analysis of the titles and abstracts of publications found in libraries and on social media. The terms were analysed and visualised using VOSviewer. Initially, every noun word was taken out of those publications' titles and abstracts.

5a) All keywords

Figure-5a: Out of 14789, 1274 meets threshold. Minimum no of occurrence of keywords is 5. There are seven clusters of varying colours with distinct circles of different items. Here also the weight represents the frequency of occurrence. Keywords such as “social media”, “human” and “article” occurred most common. Total link strength 158291, Total links 71193, Items 1000

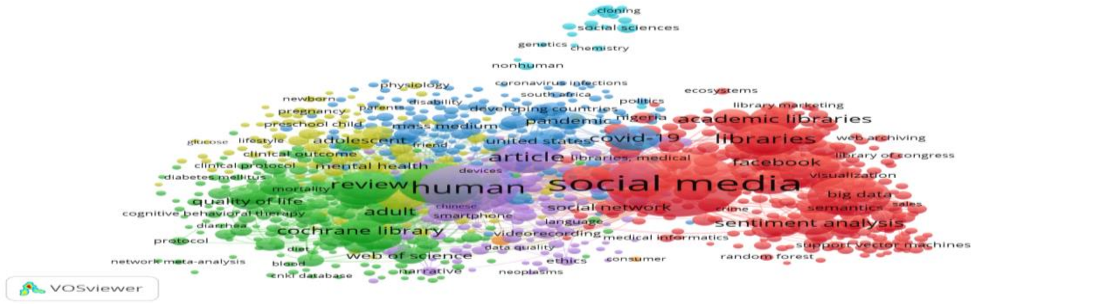

Figure 5a: Occurrence of Keywords

5b) Author Keywords

Figure-5b: Out of 7467 keywords, 382 meet the threshold. Minimum number of occurrences of the keyword is 5. Here “Social Media” occurred most common.

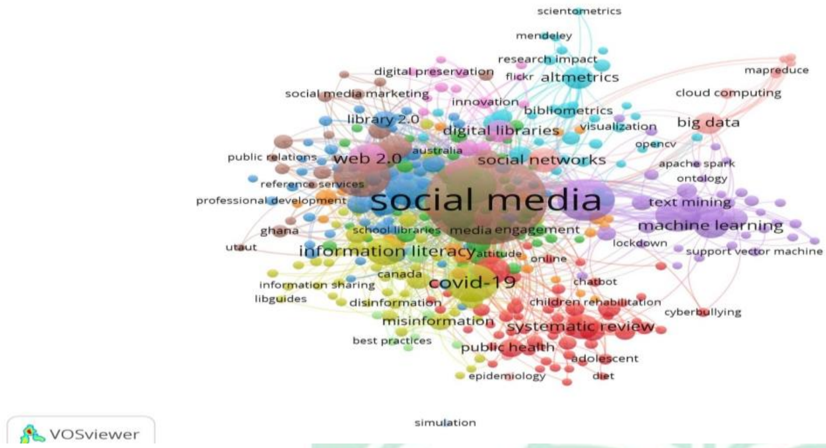

Figure 5b: Occurrence of author keywords

5c) Index Keywords:

Figure-5c: Out of 9704 keywords, 951 meet threshold. Minimum number of occurrences keywords is 5. It has 6 clusters, 60923 links and 137969 links strength. Index keywords such as “Human”, “Social Media” are most common.

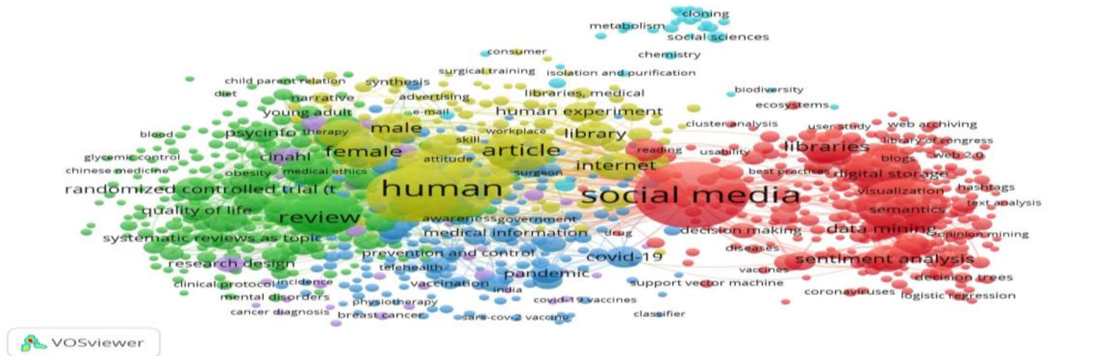

Figure 5c: Occurrence of index keywords

Citation Analysis and Co-Citation Analysis

The number of references cited by the publications on social media and libraries is provided by the citing analysis. Co-citation analysis provides a summary of publications that have been mentioned jointly in other publications, with an emphasis on the relationship or interaction between two articles. It can be considered that two papers are more similar the more times they are referenced together (Li and Hale, 2015).

6a) Document Citation

Figure-6a: This section depicts citation on documents. For this, author citation according to document has been tested by VOSviewer. Out of 3531 documents, 3531 meet the threshold. For each of 3531 documents, the number of citation links was 1113 having cluster of 40. Charnigo (2007) got 170 citations, thereafter Harrison (2017) got 59 citations.

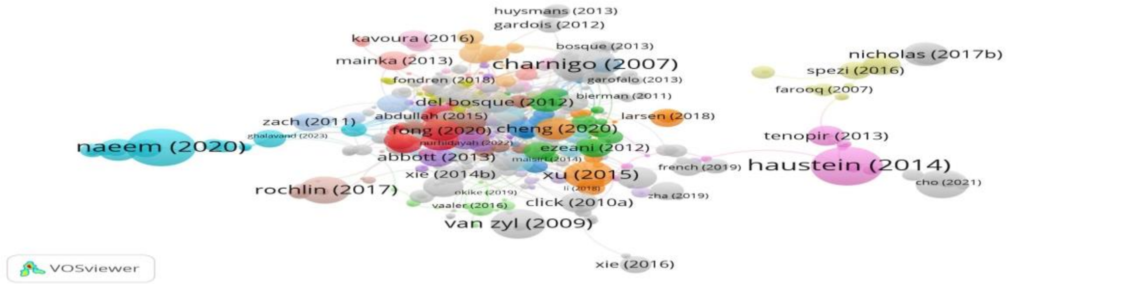

Figure 6a: Citation on documents

6b) Author Citation

Out of 9202 authors, 41 meet the thresholds. It distributed into 4 clusters, 40 links and 63 links strength. The below mentioned table 9 indicates that the authors having highest citations and it is visualized by VOSviewer by figure 6b.

Table 9: Top most authors having more citation

Author	Documents	Citations
abrizah, a.	6	137
nicholas, david	7	193
watkinson, anthony	5	185
boukacem-zeghmouri, cherifa	5	163
herman, eti	5	163

Figure 6b- Citation on authors

6c) Co-citation Analysis

The co-citations were analysed and visualised using VOSviewer. A reference needs to be utilised in the bibliography in order for it to be displayed in the co-citation map Fig. 6c displays the co-citation analysis's outcome. The circles' sizes indicate the quantity of citations; the bigger the circle, the more times an article has been cited. A closer relationship and greater similarity between two articles are indicated by a smaller space between them. Circles of the same hue indicate that these publications have comparable topics. The co-citation map, which displays the relationships between the references in social media and library publications, makes three separate clusters evident, each of which represents a subfield of social media and library study.

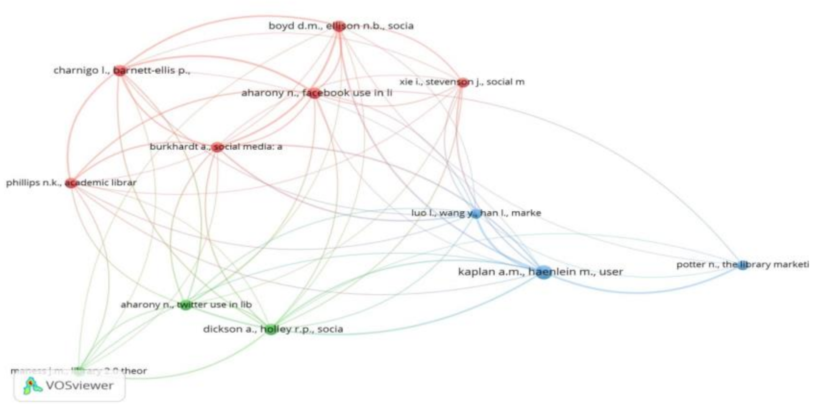

Figure 6c- Co-citation

Conclusions

This report provides an assessment of the worldwide research trends in social media and library publications from 1945 to 2023. Over the past 10 years, social media and libraries have been the subject of much research, and the amount of publications in this area has increased.

In Scopus database, more than 3000 publications have been found in total on this topic. Of all the articles published between 1945 and 2023, 414 were published in 2022, followed by 389 in 2023 and 385 in 2021. Data represented the largest number of publications among all the papers published between 1945 and 2023. The distribution of publications by document type was seen in Figure 2. According to figure (fig.-2) the Scopus database has been identified a number of journal articles are 2013. Conference Paper (664) and Review (411) come next. Table 1 showed the publication's source-wise distribution. The top ten contributors to the chosen documents have been shown in Table 2. The table that follows (Table-2) demonstrates that Chiu, D.K.W. produced more material on a specific subject. The top 10 languages have been shown in Table 3 based on the quantity of publications for each study. With 3358 publications, the "English" language is in the top spot. Spanish (67) and Chinese (29), in order, are next. Figure 3 compares the published papers based on the authors' affiliations. Researchers' analysis places the United States in first place with 1026 publications, the United Kingdom in second place with 297 publications, and India in third place with 253 publications. The top five domains have been shown in Table 4 based on how many articles each domain had. First place goes to the domain "Social Media," which has 1166 publications. "Human, Humans and Social Networking" come next.

The investigation has also been revealed that the combined authors' contributions exceeded those of the individual authors. There are 988 contributions with a single authorship overall, and 2569 with multiple authorship. Table 6 shows that in 2022, the greatest PPA is 2.225806 and the lowest AAPP is 0.449275. Conversely, 2003 shows the lowest PPA of 0.392857 and the greatest AAPP of 2.545455. Table 8 shows that the year 2005 has the highest value of CI 4.9, while the year 2022 has the lowest value of 0.55.

The bibliometric analysis may yield some beneficial results. First, it can be said that a lot of research is done in collaboration. A wide number of subject categories are ascribed to social media in relation to libraries, and numerous journals publish on the subject, indicating a vast variety of research issues and the multidisciplinary nature of such research. It is important to acknowledge certain limitations associated with this bibliometric analysis. To begin with, the search was restricted to articles that were included in Scopus. Naturally, not all papers in a given topic are included in Scopus, despite the fact that it is one of the biggest worldwide databases.

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Library Space Framework for Academic Libraries

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Abstract

The academic library is an important asset of an institution; it caters to the needs of the learning community. The advent of technology has prompted the library to redesign its facilities and services to facilitate the requirements of the user community. Library space is one phase that can be considered when revamping a library. This paper aims to propose a framework of library space that can be implemented in academic libraries to enlighten and illuminate the concept of library space and its implementation in modern academic libraries. The method employed for this paper is the exhaustive literature survey using various subject databases and open-source literature. The ideology of library space is very important, especially with the change in pedagogy and the learning behavior of the user. This paper is not the end of it but a small initiation, which will open a gateway for further exploration of the related concept for more understanding and knowledge.

Keywords: Information Commons; Learning Commons; Learning Space; Library Building Design; Green Library; Digital Space; Modern Library Services

1. INTRODUCTION

In any work activity, planning and structuring of the work necessitates the enhancement of quality work results. In libraries, before initiation of the implementation of any service and various operations, one has to plan and organize the work properly to ensure systematic workflow. Library space is one important concept in a library environment that requires proper planning and design to put the work forward. Therefore, before implementing any library space model, identifying the needs of the user, prioritizing the needs, properly understanding the concept and its attributes involved, and planning how to carry out the work in any academic library is essential. Library space framework requires cooperation and coordination of the entire library team with the support of management, building, and architecture personnel.

2. FRAMEWORK

A framework is a supporting structure around which something can be built (Cambridge Dictionary). A structure for supporting or enclosing something else, especially a skeletal support, is used as the basis for something being constructed. (The Free Dictionary. By Farlex). A framework could be defined as an application generator for one particular domain or, more to the point; it represents a skeleton of an application that includes the complete code for the basic functions of a system, which can be conformed to the needs of one specific application *Stanojevic,Vlajic and Ognjanovic (2016).* In simple terms, a framework pertains to a design, a blueprint, or a model of a particular project or work. A framework highlights the plan, the steps involved, and the resources required for a particular work. It aims to provide a pathway towards a particular work to bring systematism, quality, and structured workflow. The ideas, information, and principles that form the structure of an organization or plan or a system of rules, ideas, or beliefs that are used to plan or decide something (Cambridge Dictionary).

3. LIBRARY SPACE FRAMEWORK FOR ACADEMIC LIBRARIES

Many published research papers have come up with many designs and frameworks for library space. Designing a library requires the cooperation of architect personnel, librarians, interior designers, and the support of the management of the institution. When designing the library space, the planner has to keep in mind three important principles: functionality, usability, and attractiveness, as propounded by *Ugwuanyi et al. (2011)*. From their paper, the authors elaborated that, library, there should be adequate space for the present collection, and anticipating the future growth of the collection, they also believe that the library building has to be comfortable with comfortable seatings, good lighting, and the interior of the library should be inviting. Therefore, the library building should be attractive; it should have aesthetic properties that would draw users to the library. *Tampubolon &Kusuma (2018) also argue that* *student, for their reading space, chooses places that have both physical and social characteristics* like good ambiance, adequate lighting, comfortable seating, lounge area, coffee spot, etc. Designing a library space depends on the size, structure, and geographic location of the library, *Seal (2012).*At the end of the day, the ultimate goal of the academic library is user satisfaction, be it in terms of resources, services, or facilities provided by the library. As evident by a library space framework model propounded by the authors *Aina & Latfi (2016),* collaboration, individual, interaction, and community are the bases for their library model, and to fulfill this model, many activities were introduced under each element. A similar framework was proposed by *Choy & Goh (2016)*; here, the authors also stress collaboration, sanctuary space, interaction space, and community space as the base for their model to implement the library space model at Nanyang Technological University in Singapore.

4. NEED FOR A LIBRARY SPACE FRAMEWORK

Library space is not a new concept. The provision of reading space and resources to the users in a library has been prevalent in the past decades. But today, library space is beyond just providing books, reading space, or computer systems to the library users; instead, it is initiating supportive services and activities to the patrons to inculcate autonomous reading, independent reading, enhancing quality in teaching, learning, and research. Today, there is a need for a library space model because, in this millennial age, students are stigmatized by the thought that, with the availability of electronic resources, there is no need to go to the library. Coming to think of this point, it sounded true; even some eminent scholars also predicted the obsolesce of libraries with the introduction of electronic resources, but this is incorrect; many scholarly works have evidenced the importance of library space even today in this technology age. For this reason, there should be some model, design, or framework of the library space model that will guide library professionals to take up some initiative to introduce the library space model in academic libraries.

5. OBJECTIVES OF PROPOSED LIBRARY SPACE FRAMEWORK FOR ACADEMIC LIBRARIES

The main aim of this library space framework is to bring the culture of social life to the campus, promoting self-learning and inculcating lifelong learning habits among library users. The authors of this paper have listed out a few objectives for the proposed library space framework:

- To modernize academic libraries to meet the demand of constant change in the pedagogy system and change in the learning behavior of the user
- To meet the needs of the user in parallel with the technological advancement of tools and devices
- To enhance the quality of learning, teaching, and research
- To attract users to the library
- To meet up with the growing challenges and competition in the academic community

6. PROPOSED LIBRARY SPACE FRAMEWORK FOR ACADEMIC LIBRARIES

Having studied and reviewed many scholarly research papers on the library space model, its design, and its framework, this paper is a small initiative that aims to highlight a few learning commons activities that can be implemented in academic libraries that fall under the umbrella of library space. Library spaces attribute learning commons not only providing learning materials and computers to the patrons but much more than that; it is a model that conforms to student lifestyles by bringing student support services, resources, and technologies into the library, *Barton (2018)*. Learning commons simply means having a support service system in libraries that will optimize the usage of the library services and facilities by introducing attributes like learning space, interaction space, collaborative space, and good ambiance with great comfort facilities to the library environment. In this paper, the framework model of library space for academic libraries, the authors proposed six elements of learning commons: learning space, collaboration space, researchers' space, digital space, green library, and space for differently abled persons and highlighting different tools and attributes included in each element and guide the library professionals to initiate this library space project in academic libraries.

6.1 Learning Space

- ***Group study area:*** The concept of a quiet, silent study area in libraries has changed to a more interactive group study and group discussion mode. The learning behavior of the patrons has changed over the years and influenced the change of the pedagogy with the parallel use of many devices and tools offered by technology. The evidence from many scholarly papers shows that today, besides individual learning, many students also learn by participating in groups, group discussions, interactions, and conversations with fellow human beings. It is through these learning spaces that students indulge in problem-solving activities, brainstorming, learning, and talking. *Montgomery (2014)* found that the students highly appreciate the provision of a group study space in the Olin Library; the students can interact more with each other and gain knowledge through these discussions.

Learning is beyond the four walls of a classroom or library. Hence, a group study does not only mean a formal discussion of books or academic works but also informal discussion or any general topic conversation in a group; a person can gain immense information and knowledge. In this paper, the author asserts that group study areas are crucial in an academic library; it is in this area that a student manifests his thoughts, views, and opinions that will enrich his knowledge and understanding. So, for the successful implementation of the group study area, there should be enough space in the library to avoid congestion and overcrowding. This study space should be allocated in an area not adjacent to the individual study area to avoid distractions and disturbances. So, to functionalize a group study area in an academic library, the author highlighted the following tools that can be included in the group study area to promote learning and comfort for the library users:

- Round table to accommodate the group of users where they can discuss and interact with each other.
- Comfortable Chairs: Library furniture for comfortable sitting and reading is very important in libraries, so library chairs should be comfortable so as not to hinder the health of the student and, in turn, will motivate students to visit libraries frequently.
- Adequate charging points should be made available to ease the user whenever they need to charge devices.
- Computer systems with internet access
- Good lighting promotes learning and comfort to the group
- The group study area should not be near the individual study space; to abstain from a distressful environment for individuals who aim to study in solitude.
- The whiteboard should be provided in the group study area to increase productivity in group work.
- Sufficient space for many clusters of pupils should be made available to encourage collaboration and interaction among students.

- ***Private study area:*** While group study culture is increasing in popularity in academic libraries, some students still prefer the individual study space. Individual study space allows the user to indulge himself in his study with no distractions, *Bailin (2011).* In this paper, the author has shed some insight into how to implement or introduce an individual study space in academic libraries. Private study areas or individual carrels are also very important for researchers and scholars; most of them work individually and do not require human interaction; hence, this space is very profitable for them. Another important aspect involved in this particular space is the private study room, if the library has the means and resources to accommodate individual study rooms. Furthermore, the author opines that there should also be a provision for resting areas, napping pods, and energy pods for pupils using the library for long hours. Napping should not be mistaken with a cot and a mattress, but it is a space where a pupil can take a quick nap in the library instead of going to his hostel. So, for implementing this particular learning space, the researcher believes that the library should make provision for the following elements:

- Private study room for researchers (if feasible).
- Cubical space/carrels to provide privacy, motivate concentration, and increase focus.
- A sufficient power outlet is much needed because students bring their own devices to work on.
- Comfortable chairs and tables.
- Inclination chair, energy pods, or napping pods (for resting).
- Silence zone area.
- Good lighting for better illumination in the room.
- Internet facilities allow users to access the internet easily if they bring their own devices.
- Good ventilation promotes freshness and avoids sleeping while studying.

- ***Interaction space:*** Interaction here incorporates three aspects: firstly, interaction with resources; secondly, interaction with staff; and thirdly, interaction with technology, *Choy & Goh (2016).* Besides the above-mentioned elements of interaction, the author also believes in including the interaction of students with his peers and colleagues as well as faculty members. With this in mind, the author has proposed the following attributes that will promote the user's interaction attitude with the above-said elements:

- Adequate reading space to enhance knowledge and skills during group interaction.
- Lounge area with comfortable chairs and tables.
- Adequate resources (print & electronic) are needed to meet the demands of the user.
- Computer systems with internet access.
- Sufficient charging ports.
- Competent staff who will be able to answer users' queries.
- Café space to promote interaction and discussion among peers and colleagues.

- ***Social or collaboration space:*** Learning takes on many different occasions. Knowledge gain does not come only from books or documents, but in this project, the researcher asserted that social and intellectual growth also takes place through positive interaction and collaboration with friends, teachers, or librarians. As *Cunningham & Tabur (2012)* mentioned in their study, sociability is one of the attributes of the learning space model. This social interaction can occur as a one-to-one interaction or a fellowship of more than two people. Libraries can be the third place for the academic community, where they can serve as the social hub for the students. In this paper, the author has understood that social space is as important as the learning space in the library, so the researcher felt that there is a need to introduce the concept of social space in academic libraries as one of the elements of library space framework for the benefit of the users. With this regard, the library should have provisions for the following entities:

- Lounge area with comfortable chairs (preferably sofas, bean chairs) and newspapers and general magazines.
- Tables (not mandatory) and chairs.

- Adequate charging ports are needed to ensure comfort.
- Cafeteria and eateries space, the presence of coffee and other eateries in the library and allow it in the lounge area will motivate the students to come to the library. It creates motivation and inspiration in the minds of the users, letting them know that a library is a good place to gain knowledge and information, have a social life, and meet peers and colleagues.
- The computer system in case the users are in a group work in the social space area.

- ***Digital space:*** Information and communication technology (ICT) have created an impression in the information world. Information technology has affected the information storage, retrieval, and dissemination of information in libraries; it has transformed a static row of bookshelves into space for users and produce knowledge and interact with gadgets. Considering the importance of technology, the author in this paper attempts to argue the need to strengthen the idea of providing digital space and frame a model of digital space in academic libraries. To attract more users, the library should have devices of the latest version, and adequate space to use them. The provision of training to users related to the usage of tools and technological products provided in the library is also very important. For a digital space to be practicable, the academic library should have the following equipment:

- Sufficient computer system and laptops of the latest version to ease the work of the user.
- Internet access is very important on campus for the work of the users to go smoothly and efficiently.
- 3DPrinters
- Scanners
- Photocopier
- LCD projector
- Audiovisual equipment
- Sufficient space for interaction and discussion
- Comfortable seating should be initiated to elevate the user's spirit to visit the library.
- Round table with comfortable chairs
- Cubical or individual carrels
- Good lighting and ambiance will delight the users

- ***Researchers space:*** Researchers are very important assets of the academic community. Quality research means high visibility of work, author recognition, elevation in citations of work, and, in turn, raising the prestige of the institution. Researchers spend most of their time in the lab or the library. Comfortable chairs, tables, good illumination for study, research tools, research study space, etc., are very much needed to promote learning and writing. At times, researchers may need some recreational activities like chat point, coffee, music therapy, yoga & meditation to improve concentration, memory improvement, learning efficiency, and perception, *Balayogi Bhavanani et al. (2007),* board games or even music and dog therapy (in some western university libraries), these activities will rejuvenate the researcher and will be able to focus his work. Furthermore, the researcher requires the latest literature and research support tools to aid in writing reports and manuscripts. As pointed out earlier, researchers spend most of their time in the library; therefore, they require a place where they can rest and relax for some time or take naps in between their work to revitalize their minds and increase focus,*Fauzan Hidayatullah et al. (2022).* In light of this aspect, this paper attempts to explain a few important attributes of the researcher space that are needed in the academic library:

- Adequate working space (individual rooms or private carrels)
- Comfortable chairs and tables
- Good lighting and ventilation
- Recent literature and archives
- Research support tools (reference management tools, spelling & grammar check tools, similarity check tools, bibliographic & citation management tools)
- Sufficient computer system with internet access for easy access to resources
- Sufficient charging ports
- Relaxation is of prime importance for researchers, so inclination chairs or nap pods are highly preferable for the researcher.
- Meditation space

6.2 Facilities for Differently Abled Persons

The second law of Library Science propounded by Dr. S.R. Ranganathan, "Every Reader his/her book," implies that books or documents are for all, irrespective of age, gender, race, skin color, nationality, etc. The library's responsibility is to assist to ensure their needs are met. To optimize the use of library resources, there should be a provision for facilities like a ramp, special parking space, special reading devices like talking computers, braille books, assistance in reading sign language, etc. Some Indian Universities have taken the initiative to provide special services to this category of people *(Research Scholar et al., n.d.) Chandrakanth HG& Reddy (2019),* from this study, it is evident that library services and facilities should not be deprived for the differently abled person. As per the paper, a few selected Karnataka University libraries have provided special services for them. So, in this paper, the author aims to propose a library space model that includes facilities for differently-abled persons in every academic library. For the provision of services and facilities for these special categories of persons, the following entities are required:

- Walking ramps
- Special parking spot
- Tactile floor
- Talking computers
- Braille books
- Provision for communicating in sign language
- Special hearing headset
- Braille characters in lift buttons

6.3 Green Library

Climatic changes, natural disasters, etc., are causing humanity to think of alternatives that will save the environment. Nowadays, slogans like save water, save trees, save resources, etc., are often heard; the reason behind this is that humanity has come to the realization that the environment needs to be rescued. Because of this, many Green Library initiatives at the national and international levels felt the burden to implement the green concept in libraries both public and academic libraries**,** *Prasanth M and Vasudevan T M (2019)*. The author of this paper felt responsible for addressing this issue and has initiated a few ideas related to eco-friendly library services. The researcher felt the need to propose the concept of an enclosed-open space library or a garden library with full security of library materials to promote the green library concept. Another tool that can be implemented to save the environment is the migration of print reading to electronic reading. The concept of print on demand is a very good example that will reduce the print version, which in turn saves trees, the use of natural lighting, planting more trees on the campus for natural air conditioning, recycling of wastewater and physical objects, etc. are few of the steps that can be taken by the library alongside the support of the management. Implementing the above-mentioned green library ideas and tools is not an easy task; the library needs the full support of the management and library staff to achieve the goal.

7. LIBRARY SPACE FRAMEWORK FOR ACADEMIC LIBRARIES

The introduction of the library space model in the academic library requires patience and endurance. Implementing a library space model in academic libraries comes with a big baggage. First of all, many institutions, especially Indian institutions, give less priority to libraries, so budget constraints are an issue here. This is one of the major challenges faced by many institutions, so library personnel must master their skills and knowledge to produce an effective and efficient learning space for the users. The author has projected a few points that will aid an academic librarian in the implementation of the library space model in academic libraries:

- Identify the needs and requirements of the users
- Librarian coming forward with the library space idea to the management, justifying why it is needed and how to go about with the project
- The budget proposal for the project includes the budget for human resources to man the library activities after the completion of the project
- Co-operation and support from library staff and management
- If the proposed budget is approved, start planning, identifying, and prioritizing the project activities so it will not disturb the users in the library
- Notify the available library space framework or create a new one as per the needs of the library
- Identify the required space for the project with a brief consultation with engineers, architectures, and management
- Create the blueprint of the work with the help of engineers
- Step by step, purchase the needed requirements to fulfill the objectives of the project
- Allocate library personnel to manage many activities
- After a few months, an assessment study related to the utility and preferences of the remodeled library space and whether or not it has met the objective of the project.

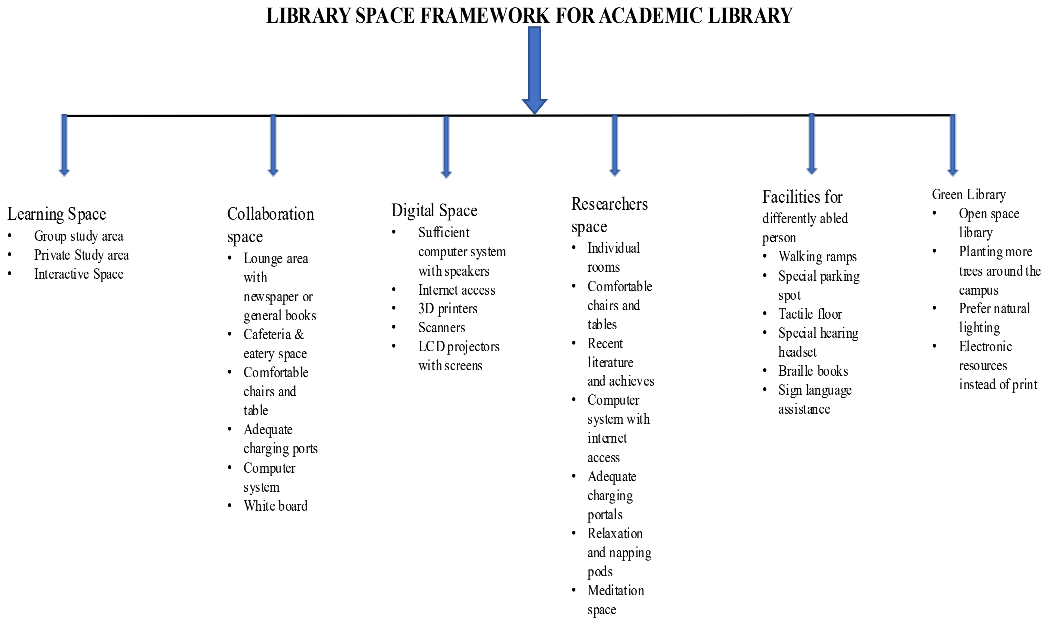

Fig 5.1 Library Space Framework for Academic Libraries

8. CHALLENGES

- ➢ As mentioned by the author earlier, budgetary constraints are one of the main obstacles to the implementation of a library space project. Academic libraries are indeed moving towards the digital library, but many scholarly articles have provided evidence that students still visit the library to use the resources, library study area (private or group study area), some come to use the technology or simply use the internet facilities, others visit the library intending to meet friends, form a community circle, creating a space of general discussion or project work, assignment, etc.
- ➢ Another important factor that triggers the mind of the author is the inability of the library personnel to cope with the changing environment. Library space is one step ahead of the old traditional library. Hence, library professionals need to update their knowledge and understand the trends occurring in the library world.
- ➢ Lack of awareness of the available facility is one important issue that is often dismissed by the library personnel; library facilities will go wasted if they are not brought to the attention of the users.
- ➢ Lack of support from the management and library staff is one factor that usually pulls down academic libraries. Without the cooperation and coordination of the various library staff, it is impossible to manage the library; therefore, various library personnel and the management needed clarification and justification regarding the urgency of library space activities in academic libraries.
- ➢ Another important challenge for library professionals is the lack of proper library infrastructure to carry out the many library operations.

9. CONCLUSION

The learning behavior of students has periodically changed over the years; more students are comfortable using electronic devices to read their content, and hence, it has raised the alarm about the actuality of requiring a physical library. Now, the library has a bigger responsibility when redesigning the library learning spaces; the librarian needs to take the initiative to provide value-added services to the library. The role of the library professional is very important when redesigning the library building; one has to have leadership skills, updated knowledge, and the ability to convince the management and provoke them to make decisions related to the library to create an aesthetic environment for learning and research. The role of the library profession is to enhance a sound library system for the present generation and anticipate the future trends and requirements of the user population. The library space concept will keep on changing in the future as the learning behavior of the user keeps on changing. Therefore, library professionals should be inclined to make these changes to create an effective learning environment for users. In a developing country like India, managing the library is challenging; one good reason is the budget constraint of the institution; thispaper is just an initiative taken by the author to frame a library space model for academic libraries and create a pathway for further study in the future. Hence the scope of the study does not have to be limited only to the academic library but opens a door for further study.

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Intellectual Property Rights in the Digital Age: Challenges and Emerging Trends

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Abstract

Intellectual Property Rights (IPR) play a fundamental role in fostering innovation, protecting creative works, and encouraging economic growth. In the digital era, where information flows seamlessly across global networks, the enforcement and protection of intellectual property have become more challenging than ever. The advent of the internet, social media, and digital marketplaces has facilitated the widespread distribution and replication of original content, often without proper authorization. As a result, copyright infringement, trademark counterfeiting, and patent violations have increased significantly, posing substantial financial and reputational risks to creators and businesses, this paper delves into the evolving landscape of IPR in the digital world, highlighting key challenges such as digital piracy, jurisdictional complexities, and the lack of effective regulatory frameworks. Furthermore, it explores emerging trends and innovative solutions, including blockchain-based copyright protection, artificial intelligence for infringement detection, and digital rights management technologies. By examining both the legal and technological dimensions of IPR, this research explores a comprehensive understanding of the measures needed to safeguard intellectual property in an increasingly interconnected and digitalized economy. Ultimately, strengthening intellectual property laws, fostering international collaboration, and leveraging cutting-edge technology will be crucial in ensuring that creative professionals and businesses continue to thrive in the digital age.

Keywords

IPR, social media, trademark, digital world

INTRODUCTION

In today's digital world, creativity and innovation have become the backbone of progress.

Whether it's an artist sharing their music online, a writer publishing an e-book, or a tech company developing groundbreaking software, intellectual property (IP) lies at the heart of these achievements. Protecting these creations is essential—not just for individuals but for society as a whole. Strong intellectual property rights encourage innovation, support economic growth, and ensure that creators receive due credit and compensation for their work.

However, digital advancements have made it easier than ever to copy, distribute, and modify original content without proper authorization. Digital piracy, trademark counterfeiting, and patent disputes pose significant challenges, making it difficult to uphold traditional legal protections. With content readily available across borders, enforcing IPR has become a complex issue requiring global cooperation, legal reforms, and technological interventions.

Digital landscape is evolving rapidly and has become more complex and challenging. As technology continues to redefine the way content is created, shared, and consumed, traditional frameworks for intellectual property rights (IPR) are being tested on multiple fronts. From music and literature to software and digital art, creators now face increased risks of unauthorized use, duplication, and infringement.

The digital age, while offering immense opportunities for innovation and global reach, also presents significant legal and ethical dilemmas. Digital content is easy to copy and share and combined with the anonymity offered by the internet, has made enforcement of IPR more difficult and less effective in some cases. This evolving landscape demands a fresh look at existing legal structures to safeguard intellectual property in the digital realm. As nations and institutions adapt to these changes, understanding the emerging trends and persistent challenges becomes essential for policymakers, creators, and consumers alike.

This paper analyses the landscape of intellectual property in the digital age, major hurdles in protecting IP rights, and practical solutions that can help strike a balance between accessibility and ownership in the modern digital economy.

DEFINITION OF IPR

Intellectual Property Rights (IPR) are legal mechanisms designed to protect the creations and innovations of individuals and organizations. These rights give creators exclusive authority over how their intellectual assets are used, shared, or reproduced by others. Intellectual property includes a range of intangible assets, such as inventions, creative works, brand symbols, and confidential business strategies.

The core objective of IPR is to motivate innovation and creativity by offering legal recognition and financial incentives to creators. By safeguarding original work, IPR helps reduce the risk of misuse or imitation, encouraging continued investment in new ideas. In a broader sense, intellectual property rights contribute to economic progress and help cultivate an environment where creativity, technological development, and cultural diversity are actively supported and protected.

IMPORTANCE OF IPR IN FOSTERING INNOVATION AND ECONOMIC GROWTH

Intellectual Property Rights (IPR) are essential for encouraging innovation, advancing technology, and supporting economic growth. By giving inventors and creators exclusive control over their work, IPR provides motivation for individuals and companies to invest in developing new ideas, knowing their efforts will be legally protected from copying or misuse.

Encouraging Innovation and Creativity

IPR provides legal recognition and financial incentives for inventors, artists, and entrepreneurs, motivating them to develop new products, technologies, and artistic works. Without these protections, innovators might be reluctant to share their ideas, fearing that others could exploit their efforts without compensation. Strong IPR frameworks promote a culture of creativity, where individuals and businesses are encouraged to push the boundaries of knowledge and technological advancement.

Boosting Economic Growth and Investment

A robust intellectual property system contributes to economic development by fostering entrepreneurship, attracting investments, and promoting job creation. Businesses and industries rely on patents, trademarks, and copyrights to secure a competitive edge, build brand value, and generate revenue through licensing and commercialization. In turn, this drives economic activity, enhances productivity, and stimulates global trade. Countries with strong IPR protection tend to experience higher levels of innovation-driven economic growth, as they attract more domestic and foreign investments.

Protecting Business Interests and Market Competition

By safeguarding proprietary technologies, brands, and creative works, IPR helps businesses maintain their unique identity and market position. Patents prevent competitors from replicating groundbreaking inventions, while trademarks ensure brand recognition and customer trust. Copyrights and trade secrets further protect valuable intellectual assets, preventing unauthorized reproduction or unfair competition. As a result, businesses can thrive in an environment where innovation is rewarded, and intellectual assets are protected.

Advancing Scientific and Technological Progress

IPR encourages knowledge-sharing and collaboration within industries and research institutions. Patent disclosures, for example, contribute to the global repository of knowledge, allowing other innovators to build upon existing technologies to develop improved solutions. This cycle of innovation leads to continuous advancements in science, healthcare, engineering, and digital technology, benefiting society as a whole.

Enhancing Cultural and Creative Industries

Beyond technology and business, IPR plays a fundamental role in protecting and promoting cultural expression. Copyright laws enable artists, writers, musicians, and filmmakers to earn a livelihood from their creative works, fostering a thriving cultural economy. The entertainment, media, and publishing industries significantly depend on strong IPR enforcement to ensure that creative professionals receive due recognition and financial rewards for their contributions.

IMPACT OF DIGITALIZATION ON IPR PROTECTION

As digital technology has quickly evolved the landscape of (IPR) protection. While digitalization has opened new opportunities for innovation, creativity, and global connectivity, it has also introduced unprecedented challenges in enforcing and safeguarding intellectual property. The ease of access, duplication, and distribution of digital content has made it increasingly difficult for creators, businesses, and legal authorities to control and protect their intellectual assets.

Digitalization has fundamentally reshaped the landscape of intellectual property rights, altering both the way creative works are produced and how they are protected. The digital environment offers immense benefits for creators, including faster dissemination, broader reach, and more efficient collaboration. However, it simultaneously presents complex challenges that strain traditional mechanisms of IPR enforcement.

One of the most significant consequences of digitalization is the increased vulnerability of intellectual property to unauthorized use. Digital content whether music, films, software, or written materials can be replicated and distributed globally with minimal effort and cost.

Moreover, the internet's borderless nature complicates enforcement efforts. A work protected under copyright in one jurisdiction may be unlawfully accessed or distributed from another where enforcement is weak or inconsistent. These jurisdictional gaps make it difficult to pursue legal action and uphold rights on a global scale, highlighting the need for stronger international cooperation and harmonization of laws.

Digital platforms and user-generated content also challenge traditional notions of ownership and fair use. The widespread sharing of content on social media, along with remixing and transformative works, often falls into legal grey areas that existing IP laws were not designed to address.

To counter these issues, digital tools like content recognition systems, blockchain-based ownership tracking, and digital watermarking are being explored to monitor and manage the use of protected works. Legal reforms are also underway in many regions to update IP laws and align them with the demands of the digital era.

In conclusion, while digitalization enhances creative possibilities and economic opportunities, it also disrupts conventional models of IP protection. Addressing these challenges requires a multifaceted approach that includes technological innovation, legal reform, and enhanced international collaboration.

EMERGING SOLUTIONS FOR DIGITAL IPR PROTECTION

Despite these challenges, technological advancements also offer new solutions for protecting intellectual property in the digital age. Some key innovations include:

Blockchain Technology: Used for secure and transparent copyright registration, tracking ownership, and preventing content manipulation.

AI-Powered Copyright Monitoring: Artificial intelligence helps detect unauthorized use of digital content across the internet.

Smart Contracts and Digital Watermarking: These technologies help automate IPR enforcement and secure content ownership.

Strengthened Legal Frameworks: Governments worldwide are working on updating IPR laws to address the complexities of the digital landscape, ensuring better protection and enforcement mechanisms.

OVERVIEW

It ensures legal safeguards to individuals, inventors, and organizations by giving them exclusive control over their creative and innovative works. These rights are designed to prevent the unauthorized use, copying, or misuse of original ideas, products, and brand elements. In a modern, innovation-focused global economy, intellectual property is a valuable asset that supports progress across technology, business, and the arts. To uphold and manage these rights, national laws and international treaties have been established, aiming to ensure that creators are fairly credited and rewarded for their efforts and contributions.

KINDS OF INTELLECTUAL PROPERTY

1. Copyright

Copyright safeguards original creative works, such as literature, music, art, films, software, and digital media. It grants creators exclusive authority over the use, reproduction, distribution, and modification of their work. The main aim of copyright is to protect the interests of authors by ensuring they have control over how their creations are accessed and shared.

2. Trademarks

Trademarks protect symbols, names, logos, slogans, and other identifiers that distinguish goods or services of a particular source. They help build brand recognition and prevent confusion in the marketplace.

3. Patents

The patent grants inventors' exclusive rights for their inventions, preventing others from making, using, selling the invention without permission for a set period of 20 years. Patents apply to new and useful inventions, including products, processes, and technical improvements.

4. Trade Secrets

It includes confidential business information such as formulas, processes, designs, practices, or any data that gives a business a competitive edge.

LEGAL FRAMEWORK:

The legal framework is structured with system of laws, rules, and international agreements that protect the rights of creators, inventors, and businesses over their intellectual creations. This framework is divided into several key categories of protection, including copyrights, patents, trademarks, industrial designs, and trade secrets. Each category is governed by specific laws that outline the rights granted, the duration of protection, and the legal remedies available in cases of infringement. At the national level, countries establish their own IPR legislation. For example, most countries have copyright acts that protect literary, musical, and artistic works, and patent laws that cover inventions and technological innovations. These national laws define what qualifies for protection, how to apply for it, and what penalties exist for violations.

As the digital world evolves, so does the legal framework. New technologies, like artificial intelligence, digital streaming, and blockchain, have introduced novel challenges that existing laws may not fully address. For instance, questions about who owns AI-generated works, how to license digital assets like NFTs, or how to manage cross-border enforcement of digital rights are pushing legal systems to adapt. Many countries are now reviewing or amending their IP laws to stay relevant in the digital era, while also striving to balance innovation, accessibility, and fair use.

Ultimately, the legal framework for IPR is essential for fostering creativity, economic development, and global trade, but it must continuously evolve to remain effective in the face of rapid technological change.

POLICY RECOMMEDATIONS:

In today's digital landscape, existing intellectual property laws often fall short because they were developed before modern digital technologies. These older frameworks struggle to address new forms of content distribution such as streaming platforms, online file sharing, and virtual products. As technology continues to evolve rapidly with innovations like artificial intelligence generating original content and virtual goods becoming mainstream traditional laws are increasingly unable to keep pace. This creates uncertainty about ownership, authorship, and rights management in the digital space. Additionally, the global nature of the internet means content can easily cross borders, but significant differences in national IP laws make international enforcement complicated and inconsistent. For instance, copyright terms that were originally designed for physical media may not suit the fast-moving, remix-oriented culture of digital content, where extended protection periods can hinder rather than help creativity and access.

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The Role of AI in Human Resource Management

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Abstract
Artificial Intelligence (AI) is transforming Human Resource Management (HRM) by automating recruitment, training, and employee engagement while enhancing decision-making, minimising biases, and optimising workforce management. However, challenges such as high implementation costs, workforce resistance, and ethical concerns persist. To address these challenges, organisations must prioritise AI awareness programs, conduct regular audits of AI algorithms, ensure data privacy and security, adopt cost-effective AI solutions, foster human-AI collaboration, promote transparency, and implement effective change management strategies.

Keywords: Artificial Intelligence, Human Resource Management, Automation, AI-driven Decision-Making.

Introduction:
Artificial Intelligence (AI) is transforming business functions by automating tasks, optimising decision-making, and enhancing overall efficiency of businesses. Its impact spans various domains, including marketing, finance, supply chain management, and Human Resource Management (HRM). Among these, HRM stands out as one of the most complex functions, where AI plays a crucial role in streamlining processes, improving efficiency, and enhancing productivity.
AI-driven innovations are revolutionising recruitment, performance evaluation, employee engagement, and workforce planning. Technologies such as machine learning, natural language processing, and predictive analytics enable organisations to automate repetitive HR tasks, make data-driven decisions, and enhance the overall employee experience. Additionally, AI contributes to cost reduction, increased productivity, and new growth opportunities across industries.
Despite its advantages, AI integration in HRM comes with challenges, including ethical concerns, bias in algorithms, and resistance to automation. Addressing these issues is essential to maximise AI's potential in HRM. This study examines the impact of AI on HRM, emphasising its benefits, challenges, and future implications while proposing measures to facilitate seamless AI adoption in the workplace.

Objectives:
1.To study the role of AI in HR functions such as recruitment, training, and employee engagement.
2.To study the benefits and challenges of AI integration in HRM.
3.To assess the ethical and legal implications of AI in human resource management.
4.To explore future trends and potential innovations in AI-driven HRM strategies.
5. To suggest measures for facing challenges of AI integration in HRM.

Hypotheses:
H_1:AI significantly enhances the effectiveness of HRM functions.
H_2: Implementingvarious measures can effectively address the challenges of AI integration in HRM.

Research Methodology:
Research method-Descriptive research method is used for the study.
Source of Data - For the study secondary data collection method is used, it includes books, research papers, google etc.

<u>Role of AI in HR Functions:</u>

- **Recruitment**
  AI-powered tools streamline the hiring process by automating resume screening, conducting initial candidate interactions, and using predictive analytics to identify suitable candidates. AI helps HR professionals to reduce the time spent on manual screening and ensures better candidate selection.
- **Training & Development**
  AI customises training programs based on employee performance and learning patterns. It enables adaptive learning by providing real-time feedback and personalised training modules, ensuring employees to receive relevant skill development opportunities.

- **Employee Engagement**
  AI enhances employee engagement by using sentiment analysis, chatbots, and virtual assistants to improve communication and satisfaction. AI-driven HR tools can analyse feedback, monitor workplace morale, and facilitate seamless interaction between employees and HR teams.
- **Enhancing Data-Driven Decisions & Reducing Bias**
  AI minimises biases in hiring and promotion decisions by analysing candidate data objectively. AI-based HR systems ensure that selection and promotion criteria are based on performance, skills, and experience rather than subjective opinions.
- **Workforce Planning & Talent Retention**
  AI helps in workforce planning by predicting trends in employee turnover and identifying retention strategies. It enables HR teams to anticipate talent gaps and implement proactive measures to retain employees.
- **Real-Time Performance Evaluation & Career Development**
  AI enables continuous performance monitoring by assessing employee productivity and providing real-time feedback. AI-driven career development tools recommend personalised training and growth opportunities based on employee performance.

Advantages of AI Integration in HRM:

- **Increases Efficiency & Reduces Manual Workload**
  AI automates repetitive HR tasks, reducing administrative burdens and improving overall efficiency.
- **Improve Accuracy in Recruitment & Employee Assessments**
  AI ensures better hiring decisions by objectively evaluating candidates based on skills and competencies.
- **Enhance Employee Experience**
  AI-powered HR support systems improve communication, provide instant responses to employee queries, and streamline HR processes leading to higher satisfaction and engagement.
- **Increases Productivity:**
  Automation of repetitive tasks frees up HR professionals to focus on more strategic initiatives.
- **Reduces Costs:**
  Streamlined processes and improved decision-making can lead to cost savings in areas like recruitment, training, and employee retention.
- **Better Decision-Making:**
  Data-driven insights from AI can help HR professionals make more informed decisions about workforce planning, talent management, and other key HR functions.
- **Reduced Bias and Discrimination:**
  AI can help to identify and mitigate biases in recruitment and other HR processes.

Challenges of AI Integration in HRM:

- **Resistance to AI Adoption**
  Employees may fear that AI-driven automation will replace jobs, leading to reluctance in AI implementation.
- **High Implementation Costs & Technical Complexities**
  Integrating AI into HR systems requires significant investment in technology, infrastructure, and training.
- **Bias in AI Algorithms**
  AI systems may inherit biases from training data, potentially leading to unfair HR decisions.
- **Data Privacy and Security:**
  Ensuring the privacy and security of employee data is crucial when using AI in HRM.
- **Bias and Discrimination:**
  AI systems can perpetuate biases if they are trained on biased data.
- **Job Displacement:**
  Some HR tasks may become automated, potentially leading to job displacement for some HR professionals.
- **Ethical Considerations:**
  It's important to address ethical concerns related to AI in HRM, such as transparency, accountability, and fairness.
- **Employee Resistance:**
  Employees may be resistant to changes in HR processes that involve AI, so it's important to address their concerns and ensure that AI is used in a way that benefits both the organization and its employees.

Future Trends & Innovations in AI-Driven HRM Strategies:

- **AI-Powered Employee Wellness Programs-**
  AI-driven tools will monitor employee well-being, assess stress levels, and recommend personalised wellness programs.

- **Hyper-Personalised HR Experiences-**
  AI will provide customised career growth plans, training programs, and job recommendations based on employees' skills and aspirations.
- **Blockchain-Integrated AI for Secure HR Processes-**
  Blockchain and AI will enhance the security and transparency of HR functions, including payroll, contracts, and employee verification.
- **AI-Driven Virtual Reality (VR) & Augmented Reality (AR) in HR-**
  AI-powered VR and AR technologies will transform training, onboarding, and skill development through immersive experiences.

<u>Suggestions to Overcome Challenges in AI Integration in HRM:</u>

It is suggested that organisations should adopt the following measures to overcome challenges in AI integration in HRM:

- **Employee Awareness and Training** – Conduct regular training programs to educate employees on AI's role in HRM, focusing on its supportive nature rather than job replacement to reduce resistance.
- **Cost-Effective Implementation** – Invest in scalable, cloud-based AI solutions to minimise costs while ensuring efficiency and adaptability to organisational needs.
- **Addressing AI Bias** – Perform regular audits to detect and correct biases in AI algorithms, ensuring fair and unbiased HR processes.
- **Data Privacy and Security** – Strengthen cybersecurity measures and adhere to data protection regulations to safeguard employee information and maintain trust.
- **Ethical AI Governance** – Establish transparent AI policies that promote ethical practices, accountability, and fairness in decision-making.
- **Workforce Transition Management** – Offer reskilling and upskilling programs to HR professionals to facilitate AI adoption and redefine HR roles effectively.
- **Employee Participation** – Involve employees in AI adoption discussions, addressing their concerns and demonstrating AI's role in reducing workload and enhancing decision-making.
- **Ethical and Inclusive HR Practices** – Use AI to foster diversity and inclusion in HR functions, aligning AI applications with organisational values for fairness and transparency.

Conclusion:

Artificial Intelligence (AI) is transforming Human Resource Management (HRM) by automating tasks, enhancing decision-making, and improving employee experiences. It streamlines recruitment, training, and workforce management, making HRM more efficient and data-driven. AI's ability to automate processes and minimise biases further strengthens its role in modern HR functions.

However, challenges such as high implementation costs, workforce resistance, and ethical concerns, including bias and privacy risks, must be addressed to fully harness AI's potential. Ensuring fairness, transparency, and compliance with legal regulations is essential for ethical AI integration. By adopting strategic measures like proper training, ethical AI frameworks, and phased implementation, organisations can effectively overcome these obstacles.

As AI continues to evolve, advanced HR strategies will play a crucial role in shaping the future workforce by offering innovative, data-driven solutions. A balanced approach to AI integration will enable organisations to optimise HRM functions and achieve long-term success.

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E-Commerce Security and Fraud: Current Trends and Future Outlook

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Abstract:
The exponential growth of e-commerce has revolutionized how businesses operate and how consumers interact with the marketplace. This shift has brought numerous benefits, including global reach, operational efficiency, and customer convenience. However, it has also exposed businesses and consumers to heightened risks, especially concerning cybersecurity and fraud. This paper explores the prevailing trends in e-commerce fraud, identifying common attack vectors such as phishing, identity theft, fake websites, account takeovers, and payment scams. It also investigates the evolution of fraud tactics in response to technological changes and the pandemic-driven acceleration in digital adoption. Drawing from an extensive literature review and qualitative analysis of secondary data between 2019 to 2024, the study evaluates the effectiveness of current fraud prevention strategies including AI-powered detection systems, blockchain integration, biometric authentication, and regulatory frameworks. The research highlights the importance of a proactive and collaborative approach involving private entities, governments, and users to combat sophisticated cyber threats. The paper concludes with strategic recommendations to enhance security, foster consumer trust, and sustain the future growth of e-commerce. The future outlook underscores a shift toward decentralized and AI-driven solutions and a more educated digital user base as essential pillars for mitigating cybercrime in e-commerce. This study contributes valuable insights for academics, policymakers, and practitioners striving to make digital commerce safer and more resilient.

Keywords: E-commerce fraud, cybersecurity, digital transactions, fraud prevention, online security

Introduction:

The digital revolution has fundamentally transformed the way we live, work, and engage in commerce. Among the most significant shifts in consumer behavior over the past two decades is the rapid adoption of e-commerce. From retail giants to small entrepreneurs, businesses have capitalized on the vast potential of online platforms to connect with customers worldwide. With mobile applications, social media integration, and seamless payment systems, shopping has become more convenient, personalized, and accessible than ever before. This digital evolution has not only enhanced consumer experience but also created new economic opportunities and efficiencies across industries.

However, the expansion of e-commerce has also introduced complex challenges, most notably in the realm of cybersecurity and online fraud. As more consumers turn to online shopping and digital payments, malicious actors have exploited vulnerabilities in these systems for financial gain. E-commerce fraud now encompasses a wide range of criminal activities, including identity theft, account takeover, phishing schemes, fake online stores, and sophisticated payment frauds. These threats compromise both consumers and businesses, leading to financial losses, reputational damage, and declining customer trust.

The importance of addressing e-commerce fraud cannot be overstated in today's hyper-connected digital economy. The rising frequency and sophistication of cyberattacks demand immediate attention and robust countermeasures. E-commerce platforms serve as a backbone for global trade, and their security is critical not only for business continuity but also for the broader goal of digital inclusion. As the number of digital transactions continues to rise, so does the potential for fraudulent exploitation, posing a significant risk to global economic stability.

Moreover, the COVID-19 pandemic accelerated the adoption of e-commerce, bringing in a new wave of users—many of whom lack cybersecurity awareness. This shift has further widened the attack surface for cybercriminals. In response, businesses have been compelled to rethink and redesign their security architectures. Technologies such as artificial intelligence, machine learning, biometric verification, and blockchain have emerged as promising tools to detect, prevent, and respond to fraudulent activities in real time.

This research seeks to explore these evolving challenges by examining the types of fraud prevalent in e-commerce, the technologies employed to combat them, and the effectiveness of existing frameworks. Through a comprehensive review of literature and analysis of industry practices, the study aims to provide insights into current trends, social implications, and future prospects of e-commerce security. By doing so, it contributes to the broader discourse on digital trust and resilience in an age where online commerce is poised to become the norm rather than the exception.

Objectives of the Study:

1. To identify the most common types of fraud occurring in e-commerce transactions.
2. To analyze the current security measures employed by e-commerce platforms.
3. To assess the impact of e-commerce fraud on consumers and businesses.
4. To propose strategies for enhancing security and minimizing fraud in future e-commerce transactions.

Methodology:

This study adopts a qualitative research approach supported by secondary data. Data were collected through literature reviews and recent publications in academic journals between 2019 and 2024. The analysis involved identifying patterns, evaluating the effectiveness of various security measures, and synthesizing expert opinions to forecast future developments in e-commerce fraud prevention. The research primarily relies on content analysis and thematic categorization to draw conclusions and recommendations. The results were synthesized to provide insights into the current state of e-commerce security, the challenges faced by different stakeholders, and potential future developments in fraud prevention.

Social Relevance of the Study:

As e-commerce becomes a dominant mode of shopping, the implications of fraud extend beyond individual losses to broader societal concerns. Fraud undermines consumer confidence, discourages digital adoption, and can destabilize trust in financial institutions. By addressing e-commerce fraud, this study contributes to enhancing public awareness, informing policy decisions, and supporting businesses in creating safer digital ecosystems. It also aligns with global goals of digital inclusion and economic growth by promoting secure and trustworthy online commerce.

Literature Review:

- Smith, R. (2019) conducted a study on the increasing trend of identity theft in online shopping platforms. The research highlighted how phishing schemes and unauthorized access to personal information are the leading causes of consumer distrust in digital transactions.
- Kumar, S. & Jain, P. (2020) explored the application of artificial intelligence and machine learning in fraud detection. Their findings emphasized the need for real-time fraud detection systems to combat the rapidly evolving nature of cyber threats.
- Li, X. (2018) investigated the potential of blockchain technology in securing e-commerce transactions. The study argued that decentralization enhances data transparency and reduces the likelihood of payment fraud.
- Thomas, M. (2021) analyzed how customer trust plays a pivotal role in reducing fraud susceptibility. The research suggested that clear privacy policies and visible security certifications help build user confidence.
- Mehta, A. & Sharma, R. (2022) focused on the risks associated with mobile payment fraud. Their analysis demonstrated that two-factor authentication and biometric logins significantly decrease fraud incidents.
- Chopra, D. (2020) reviewed various cybersecurity frameworks adopted by leading global e-commerce platforms. The study called for stronger international cooperation and information sharing to combat cross-border cybercrimes.
- Wang, H., & Zhang, L. (2019) examined the use of social engineering in e-commerce fraud. Their research provided insights into how attackers manipulate human behavior to gain unauthorized access.
- Alam, F. (2021) discussed the surge in digital fraud during the COVID-19 pandemic. The paper highlighted that inexperienced users and increased online activity were major contributors to the spike in incidents.
- Peterson, L. (2023) addressed the challenges in prosecuting cybercriminals due to inadequate legal infrastructure. The study recommended harmonized global cybercrime laws to ensure more consistent enforcement.
- Verma, K. (2022) presented case studies on Indian e-commerce platforms, identifying critical weaknesses in data protection policies and their impact on consumer trust.
- Brown, J. & Green, T. (2020) assessed user education programs and awareness campaigns. Their research found that informed users are significantly less likely to become fraud victims.
- Singh, A. (2021) investigated frauds related to online marketplaces, emphasizing the need for thorough vendor verification mechanisms to ensure platform integrity.
- Desai, N. & Rao, S. (2022) explored the role of social media in promoting e-commerce and the parallel rise in phishing attacks originating from fake social media storefronts.
- Ahmed, R. (2023) analyzed AI systems' predictive capabilities to flag suspicious behavior. The research showed high success rates in detecting anomalies while minimizing false positives.
- Oliveira, M. (2019) reviewed the effectiveness of European Union regulations in preventing e-commerce fraud. The paper concluded that regulatory compliance improves both consumer protection and corporate accountability.

Findings:

1. **Prevalence of Payment Fraud and Phishing:** Payment fraud and phishing attacks remain the most common threats across e-commerce platforms. Fraudsters frequently use fake websites, misleading emails, and cloned payment pages to deceive users.
2. **Rising Sophistication of Cybercriminals:** Cybercriminals are increasingly leveraging advanced techniques such as deepfakes, botnets, and synthetic identities to bypass security protocols.
3. **COVID-19 as a Catalyst:** The pandemic led to a spike in online shopping, attracting inexperienced users who became easy targets for fraud. Additionally, companies rushed to digitize without robust security frameworks.
4. **Insufficient Consumer Awareness:** Many consumers lack basic cybersecurity knowledge, making them susceptible to social engineering, weak passwords, and scams. This gap is a major contributor to the success of fraud attempts.
5. **Budgetary Constraints in SMEs:** Small and medium-sized enterprises often lack the financial and technical resources to implement sophisticated fraud prevention tools, making them vulnerable targets.
6. **Gaps in Global Legal Frameworks:** Disparities in international cyber laws and enforcement capabilities hinder cross-border fraud prevention and prosecution.
7. **Success of AI-Driven Solutions:** Machine learning algorithms used for pattern recognition and anomaly detection have proven effective in flagging fraudulent transactions in real-time.
8. **Importance of Multi-Factor Authentication (MFA):** MFA is one of the most effective methods for reducing account takeovers and unauthorized access.
9. **Consumer Trust as a Business Asset:** Companies investing in robust cybersecurity measures report higher consumer loyalty and reduced churn, as security becomes a deciding factor for many online shoppers.
10. **Collaborative Ecosystem Yields Better Results:** Public-private partnerships and industry collaborations have led to successful anti-fraud initiatives, data-sharing networks, and crisis response strategies.

Suggestions:

1. Develop and implement AI-based monitoring systems for real-time fraud detection.
2. Integrate biometric verification and multi-factor authentication across all e-commerce platforms.
3. Conduct regular cybersecurity audits and vulnerability assessments.
4. Launch targeted awareness campaigns to educate consumers on identifying fraud.
5. Invest in staff training to ensure internal compliance with best practices.
6. Form industry consortiums to share threat intelligence and response protocols.
7. Introduce standardized international cybersecurity regulations for cross-border e-commerce.
8. Encourage research and development into future-ready fraud prevention technologies.

Conclusion:

E-commerce has emerged as a powerful engine for global commerce, offering unmatched accessibility and economic opportunity. Nevertheless, this growth is paralleled by increasingly sophisticated fraud techniques that challenge the integrity and trustworthiness of digital platforms. This study identifies that fraud in e-commerce is not only prevalent but also rapidly evolving, with cybercriminals leveraging both technical exploits and human vulnerabilities. Through extensive literature review and qualitative analysis, the research illustrates that while AI, blockchain, and secure verification methods can bolster defenses, they must be complemented by user education and stronger regulatory frameworks. Addressing e-commerce fraud demands an ecosystem-wide response involving governments, private sector stakeholders, and end-users.

To secure the future of e-commerce, proactive security strategies, international cooperation, and continuous technological innovation are imperative. As we look to the future, we anticipate a rise in real-time fraud detection systems, greater reliance on decentralized technologies, and increased collaboration across borders to combat cybercrime effectively. Only through such collective efforts can we create a resilient digital marketplace that fosters trust, safety, and sustainable economic growth.

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A Study on the Effect of Entrepreneurship Education on Startup Success with special reference to Mumbai city

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Abstract:
This study explores the impact of entrepreneurship education on startup success, focusing specifically on Mumbai City, India's financial hub. With Mumbai's dynamic business ecosystem, which provides access to funding, mentorship, and a skilled workforce, it offers an ideal setting for evaluating how entrepreneurship education contributes to the success of startups. The study investigates various aspects of entrepreneurship education, such as curriculum design, resource access, mentorship, and experiential learning, and their correlation with startup success metrics like profitability, team growth, and longevity. Both quantitative and qualitative methods, including surveys and interviews with 120 respondents (entrepreneurs, educators, and policymakers), were employed to gather insights. The findings suggest that entrepreneurship education has a positive relationship with startup success, with educated entrepreneurs demonstrating a greater awareness of critical success factors such as business planning, mentorship, and networking opportunities. The study also highlights the importance of education quality, showing that high-quality education correlates with higher startup success rates. Hypothesis testing through Chi-square analysis confirms the significance of these relationships. The study provides valuable recommendations for improving entrepreneurship education programs in Mumbai, including enhancing curricula with real-world case studies, fostering industry-academic collaborations, and implementing policy support. The research contributes to filling a gap in the literature by focusing on the regional context of Mumbai and offers actionable insights for policymakers, educators, and entrepreneurs to enhance the effectiveness of entrepreneurship education programs, ultimately supporting economic growth, innovation, and job creation in the city.

Keywords: Entrepreneurship Education, Startup Success, Mumbai City, Business Planning

1. Introduction

In order to foster startup ecosystems and cultivate entrepreneurial abilities, entrepreneurship education is essential. In an economy that is changing quickly, like India's, this type of education is now crucial for fostering creativity and independence. Mumbai City offers a distinctive environment for analyzing this relationship because of its vibrant economic environment. Mumbai, India's financial center, provides access to money, incubators, mentorship, and a talented talent pool. Because of these characteristics, it is a perfect place to evaluate how entrepreneurship education affects startup success. The relationship between educational inputs and practical entrepreneurship outcomes is the main subject of this study. The study looks into a number of aspects of entrepreneurship education, including resource access, mentorship, experiential learning, and curriculum design. It attempts to determine which elements, as shown by metrics like lifespan, profitability, and team growth, have the most effects on startup success.

An important component of the research is examining how entrepreneurs view their schooling. Did they develop strategic thinking, take more risks, or overcome obstacles as a result of their education? The usefulness of entrepreneurial programs will be clarified by these revelations. Both quantitative and qualitative data will be gathered through surveys and interviews with startup founders. The use of statistical methods like chi-square tests will assist in identifying relationships between business performance and educational background.

Additionally, the study contrasts digital alternatives such as MOOCs and online courses with conventional classroom techniques. This will make it easier to assess the ways in which tech-enabled learning enhances entrepreneurial aptitude. The study's conclusions will provide insightful suggestions for incubation centers, educators, and policymakers. It will assist in improving courses to better suit the requirements of prospective business owners. The research can help colleges create more successful entrepreneurship programs by emphasizing the value of practical training, industry partnership, and mentorship. A significant void in the literature on regional entrepreneurship is filled by this study, which focuses on Mumbai.

The study's long-term goal is to establish entrepreneurship education as an effective instrument for promoting economic growth, job creation, and innovation. The knowledge acquired can help develop national policies that support aspiring business owners and strengthen India's startup scene.

2. Review of Literature

1. Kuratko, D. F. (2005), It gives a thorough summary of how entrepreneurship education has evolved over time and how important it is becoming. He lists the main obstacles to curriculum standardization and assessment of educational efficacy. Bridging the gap between academia and industry and incorporating experience learning are also emphasized in the article.

2. Mwasalwiba, E. S. (2010), A thorough literature analysis that defines the goals, instructional methodologies, and assessment techniques employed in entrepreneurship education worldwide is provided in this article. In his classification of various pedagogical techniques, Mwasalwiba emphasizes the value of outcome-based learning in the development of entrepreneurial competencies.
3. Pittaway, L., & Cope, J. (2007), In order to investigate the conception and delivery of entrepreneurship education, Pittaway and Cope perform a thorough assessment of the scholarly literature. The paper calls for more longitudinal research to determine long-term effects on entrepreneurial behavior and points out methodological flaws in existing studies.
4. Solomon, G. T. (2007), It investigates the scope and structure of higher education institutions in entrepreneurship in the United States. This article identifies best practices for instructional strategies, curriculum design, and institutional support structures. Also discussed are the implications for policy and the role of the government in advancing entrepreneurial education.

3. Research Gap
More research is required on the unique setting of Mumbai City, even if the corpus of literature on entrepreneurship education and startup success is expanding. The purpose of this study is to close this gap by investigating how entrepreneurship education affects mumbai city startup success.

4. Statement of the Research Problem
The purpose of this study is to look into how entrepreneurship education affects Mumbai City startup success. In order to encourage an entrepreneurial spirit and boost startup success, entrepreneurship education has become crucial. Research on the efficacy of Mumbai City's entrepreneurship education initiatives is, nevertheless, scarce. This research aims to close this information gap. To give stakeholders useful information, this study will investigate the connection between company success and entrepreneurship education.

5. Significance of the Study
This study will give educators, legislators, and business owners important information about how well entrepreneurship education initiatives support startup success. This study's results will add to the body of knowledge on startup success and entrepreneurship education. Policymakers can utilize the results to guide their decisions about entrepreneurship education. The results can be used by educators to enhance the planning and implementation of entrepreneurship education initiatives. To make well-informed selections regarding their business endeavors, entrepreneurs might utilize the results.

6. Scope of the Study
Using a mixed-methods approach, the study will combine quantitative and qualitative data to examine the different aspects of entrepreneurship education, such as curriculum design, teaching methods, and resources, as well as the key factors that influence how effective entrepreneurship education programs are at promoting startup success. The study will be limited to Mumbai City, but the findings can be generalized to other urban cities in India.

7. Objectives of the Study
1. To study the association between entrepreneurship education and startup success in Mumbai City.
2. To determine the key factors that influence the effectiveness of entrepreneurship education programs in promoting startup success.
3. To provide recommendations for improving entrepreneurship education programs in Mumbai City.

8. Hypothesis of the Study
Hypothesis 1
(H0): There is no significant relationship between entrepreneurship education and startup success in Mumbai City.
(H1): There is a significant relationship between entrepreneurship education and startup success in Mumbai City.
Hypothesis 2
(H0): There is no significant difference in the key factors influencing startup success between entrepreneurs who have received entrepreneurship education and those who have not.
(H1): There is a significant difference in the key factors influencing startup success between entrepreneurs who have received entrepreneurship education and those who have not.
Hypothesis 3
(H0): There is no significant relationship between the quality of entrepreneurship education programs and startup success in Mumbai City.
(H1): There is a significant positive relationship between the quality of entrepreneurship education programs and startup success in Mumbai City.

 ISBN No- 978-93-342-5395-5

9. Research Methodology

a) Sample Size and Respondents:

The study had been targeted 120 respondents, including entrepreneurs, educators, and policymakers in Mumbai City. The respondents had been selected using through convenience sampling method.

a) 120 Break-up of Respondents it includes:

Entrepreneurs: 60	Educators: 30	Policymakers: 30

b) Data Collection:

Primary data will be collected had been used a structure questionnaire. Secondary data had been collected from existing literature, reports, articles and websites.

c) Testing and graph it includes:

It used only Chi square test and simple bar diagram, line graph and pie chart.

10. Limitations of the Study

The study has several limitations, including:

a) Convenience sampling method may not provide a representative sample.
b) The study is limited to Mumbai City and may not be generalizable to other cities.
c) The study relies on self-reported data, which may be subject to biases.

11. Scope for Further Research

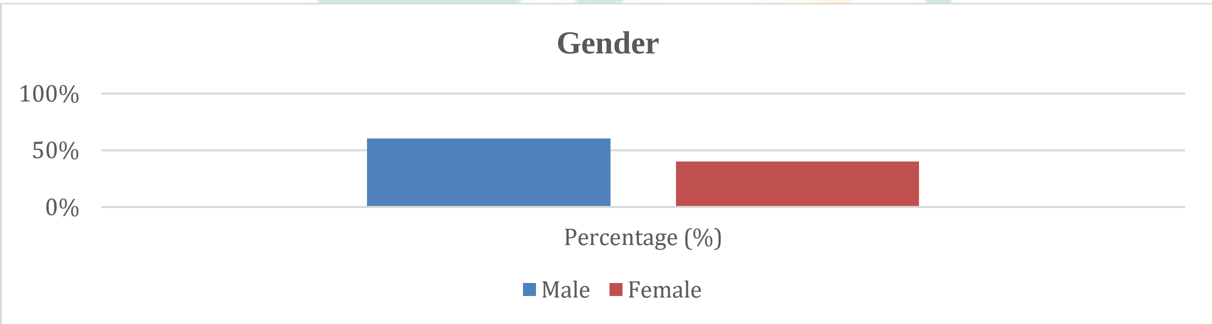
Future research might look into how entrepreneurship education affects the success of startups in other Indian cities. For deeper insights, these studies can use more sophisticated study techniques and larger sample numbers. Researchers can then determine the most effective methods for entrepreneurship education programs.

12. Data Analysis and Interpretations

A. Demographic Profile of Respondents

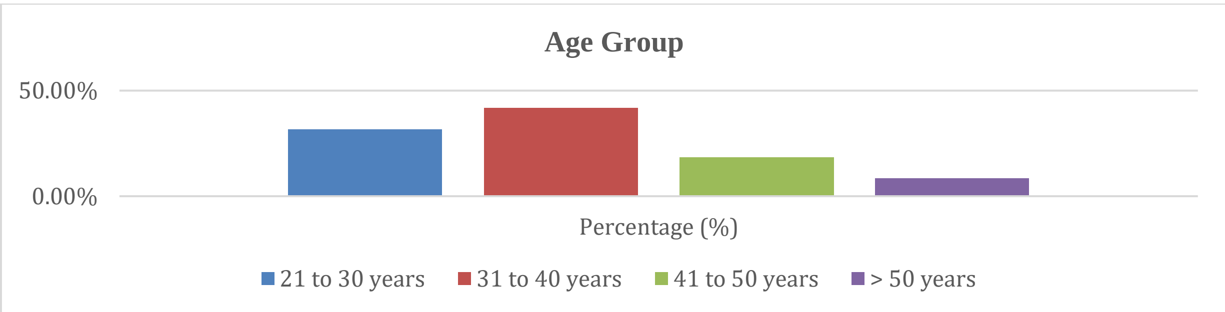
1. Gender

Gender	**Frequency**	**Percentage (%)**
Male	72	60%
Female	48	40%
	120	**100**



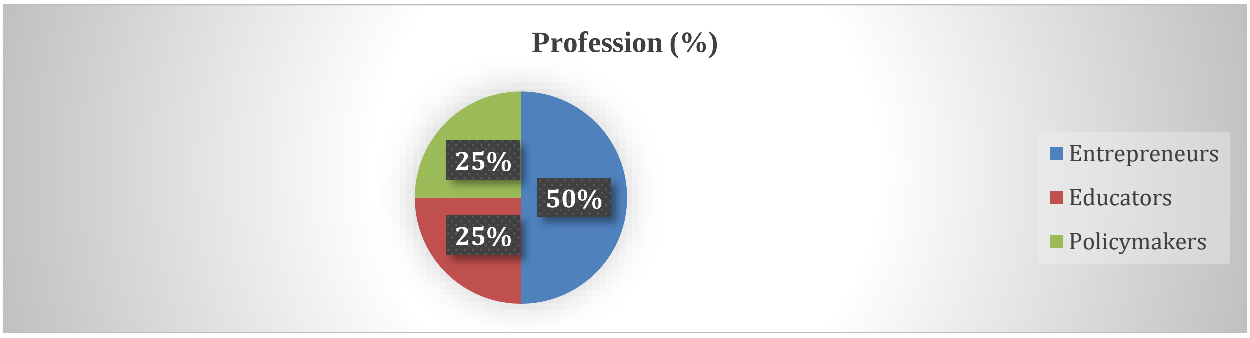
2. Age Group

Age Group	**Frequency**	**Percentage (%)**
21 to 30 years	38	31.7%
31 to 40 years	50	41.7%
41 to 50 years	22	18.3%
> 50 years	10	8.3%
	120	**100**



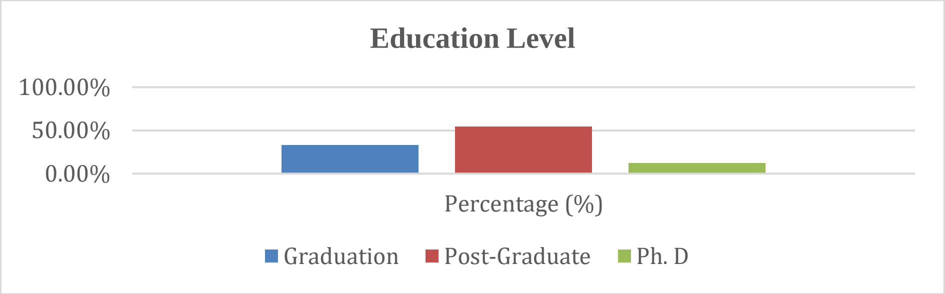
3. Profession

Profession	Frequency	Percentage (%)
Entrepreneurs	60	50%
Educators	30	25%
Policymakers	30	25%
	120	**100**



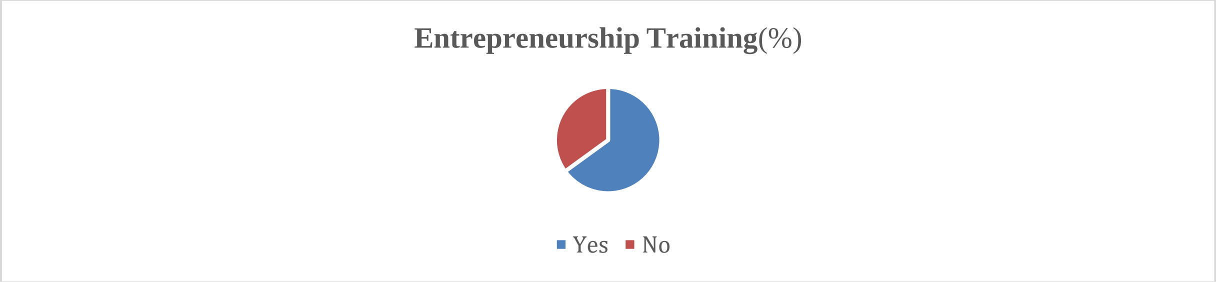
4. Education Level

Education Level	Frequency	Percentage (%)
Graduation	40	33.3%
Post-Graduate	65	54.2%
Ph. D	15	12.5%
	120	**100**



5. Entrepreneurship Training

Entrepreneurship Training	Frequency	Percentage (%)
Yes	78	65%
No	42	35%
	120	**100**



Interpretation:
Majority 60% of the responders, and 41.7% are between the ages of 31 and 40. Mostly result (54.2%) hold postgraduate degrees, and 65% have received training or instruction in entrepreneurship.

B. Based on Factors:

Q1. Have you received any formal Entrepreneurship Education?

Response	No. of Respondents	Percentage
Yes	79	65.83%
No	41	34.17%
Total	**120**	**100%**

Q2. Is your startup currently successful?

Response	No. of Respondents	Percentage
Yes	76	63.33%
No	44	36.67%
Total	**120**	**100%**

Q3. Factors Influencing Startup Success

Factor	With Education (n=79)	%	Without Education (n=41)	%	Total (n=120)	%
Access to Funding	46	58.23%	17	41.46%	63	52.50%
Networking Opportunities	53	67.09%	15	36.59%	68	56.67%
Mentorship	50	63.29%	19	46.34%	69	57.50%
Business Planning Skills	59	74.68%	24	58.54%	83	69.17%

Q4. How would you rate the quality of the entrepreneurship education you received?

Quality of Education	No. of Respondents	Percentage
High Quality	45	37.50%
Moderate	40	33.33%
Low Quality	19	15.83%
Not Applicable	16	13.33%
Total	**120**	**100%**

Q5. Quality of Education vs Startup Success

Quality of Education	Successful	Not Successful	Total	Success Rate (%)
High Quality	36	9	45	80.00%
Moderate	28	12	40	70.00%
Low Quality	11	8	19	57.89%
Not Applicable	1	15	16	6.25%
Total	**76**	**44**	**120**	**63.33%**

Interpretation:

The majority of respondents (65.83%) had formal entrepreneurship education, according to the data, and those who thought the education was of excellent quality had higher startup success rates (80% success). The beneficial effects of education on startup outcomes were demonstrated by the higher prevalence of critical success characteristics among educated entrepreneurs, such as business planning, networking, and mentorship.

❖ **Hypothesis Testing**

Hypothesis	Variables Tested	Chi-square Value (χ^2)	df	p-value	Result	Decision
H1	Education vs. Success	6.40	1	0.011	Significant	Reject Null (Accept Alternate)
H2	Factors vs. Education	7.89	3	0.048	Significant	Reject Null (Accept Alternate)
H3	Quality vs. Success	9.65	3	0.022	Significant	Reject Null (Accept Alternate)

Note: Significance level $\alpha = 0.05$

Interpretation of Hypothesis Testing

Hypothesis	Interpretation
H1	There is a statistically significant relationship between entrepreneurship education and startup success.
H2	Key success factors differ significantly between those with and without entrepreneurship education.
H3	Quality of entrepreneurship education significantly effects startup success.

11. Findings

a) Demographic Findings

- The most of respondents are Post graduates and between 31–40 years.
- 65% had been received some form of entrepreneurship education.

b) Hypothesis-Based Findings

- Entrepreneurship education is positively connection with startup success.
- Educated entrepreneurs are most aware of key enablers like funding, mentorship, and planning.
- The quality of education plays a vital role in the success rate of startups.

12. Suggestions

1. **Improve the Quality of the Curriculum**: Include startup simulations, real-world case studies, and practical mentoring.
2. **Connect Industry and Education**: Establish collaborations between academic institutions and startups/incubators.
3. **Policy Support**: Promote more focused training programs for entrepreneurs that are supported by both the public and commercial sectors.
4. **Tracking Mechanisms**: To enhance and personalize learning modules, entrepreneurship education outcomes are regularly monitored.

13. Conclusion

This study reveals the important part that entrepreneurship education plays in Mumbai City startups' success. The results show a clear relationship between the success of new enterprises and the availability and quality of such education. Strong educational support for startups is associated with improved performance, demonstrating the value of giving business owners relevant knowledge and skills. Targeted educational programs can help entrepreneurs overcome obstacles and improve their chances of success, according to the report. In order to properly prepare prospective entrepreneurs for the competitive and ever-changing business environment, entrepreneurship education should be improved. Policymakers and academic institutions can use this knowledge to inform the creation of more successful initiatives that promote innovation and development. The results highlight the necessity of ongoing development of educational materials catered to startup founders' unique requirements.

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A Study on the Emotional Intelligence of Higher Secondary School Students

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Abstract:
We inhabit a rapidly evolving world that is encountering unprecedented challenges. Recognizing their proper place and possessing a strong sense of intelligence regarding the invisible intricacies of life, high-quality education is essential in today's competitive environment, where students are expected to perform multiple tasks with efficiency and effectiveness. The primary goal of the proposed New Policy on Education was to raise the standard of education, which could be achieved primarily by developing students' emotional intelligence. Students who possess emotional intelligence perform better academically and acquire abilities for both their personal and professional lives. The objective of the current study was to investigate the Emotional Intelligence of students in higher secondary schools. The approach of random sampling was applied. Three hundred students from higher secondary schools made up the sample.
Data was gathered using the Emotional Intelligence questionnaire (Goleman's Reconstructed Mayer-Salovey Model). The data was analyzed using statistical methods such as the mean, standard deviation, and t-value. The findings indicate that Emotional Intelligence was unaffected by factors such as gender, subject, family type, and family income. The Emotional Intelligence of students in higher secondary school was mediocre. In terms of Emotional Intelligence, female students outperform male students.

Keywords: Emotional intelligence, Higher secondary school students, Adolescents, Emotion

Introduction:

According to Peter Salovey, Marc A. Brackett, and John D. Mayer (2004), Emotional Intelligence (EI) is a skill that includes the capacity to observe one's own and other people's emotions and experiences to distinguish between them and utilize the information to inform one's own decisions and actions. Emotions and learning take place in the brain. Learning involves acquiring knowledge or skills. Engaging in learning necessitates thought. Our thoughts influence our emotions, and conversely, our emotions affect our thoughts. The relationship between emotion and learning is complex and operates in both directions. Sensations serve as the intermediaries between sensory input and cognitive processes. When the input is viewed positively, we feel encouraged to take action and reach our goals. Conversely, when the input is assessed negatively, we are hindered from acting and miss out on learning.Conflicting feelings can either lead to or result from challenges in teaching (Candy Lawson, n.d.). A person's keen awareness of their educational surroundings plays as significant a role in learning as the teaching approach or classroom setting does (Flood, 2003).Although Intelligence Quotient (IQ) has traditionally been viewed as an indicator of a student's achievement, research indicates that Emotional Intelligence (EI) is a more accurate predictor of "success" as we move further into the 21st century. EI plays a crucial role in enabling students to adapt positively from one setting to another (Hettich, 2000). Skills related to emotional intelligence are essential for effective human performance and the administration of thriving educational organizations.

Problem Statement

"Every learning has an Emotional base."

It is important to understand that Emotional Intelligence is not the contrary of intelligence; it is not simply the victory of reason over emotion - it represents a distinct blend of both. Emotional intelligence refers to the capacity to utilize one's emotions, aiding in problem-solving and leading to a more fruitful life. When higher secondary school students possess Emotional Intelligence, it contributes to their health, enhances their employability, and fosters better relationships with peers. Therefore, the researcher seeks to examine the emotional intelligence of higher secondary school students to improve their emotional competency levels. Consequently, the topic of this study is clearly defined as: "**Every Learning Has an Emotional base:** A Study on the Emotional Intelligence of Higher Secondary School Students.

Operational definitions:

Emotional Intelligence- encompasses a variety of experiences, such as self-awareness, emotional regulation, intrinsic motivation, empathy, and the ability to manage relationships hence can be defined as the ability or capacity of an individual to deal with different types of emotions in oneself and others and problems arising out of them.

Emotions - pertain to the feelings, whether favorable or unfavorable, that arise in response to particular situations.

Adolescent - A young person transitioning from childhood to adulthood.

Higher Secondary Students

The term here refers to students who are enrolled in the 11th and 12th classes.

Objectives:

1. To determine the Emotional Intelligence levels of students in higher secondary schools.
2. To assess the differences in Emotional Intelligence between male and female higher secondary school students.
3. To explore the variations in Emotional Intelligence between students pursuing Arts and Commerce in higher secondary schools.
4. To examine the disparities in Emotional Intelligence between students from nuclear families and those from joint families in higher secondary schools.
5. To investigate the differences in Emotional Intelligence among higher secondary school students based on their father's occupation.
6. To assess the variations in Emotional Intelligence related to the family monthly income of higher secondary school students.

Hypotheses:

1. Higher secondary school students exhibit low levels of Emotional Intelligence.
2. There is no significant variance in Emotional Intelligence between male and female higher secondary school students.
3. There is no notable difference in Emotional Intelligence between Arts and Commerce higher secondary school students.
4. There is no significant difference in Emotional Intelligence among higher secondary school students from nuclear families compared to those from joint families.
5. There is no significant difference in Emotional Intelligence among higher secondary school students from various family income levels.

Methodology

In this study, the Descriptive approach is utilized. This approach aims to outline and explain the current state of affairs. It focuses on the existing relationships, dominant practices, prevailing beliefs, perspectives held, ongoing processes, and the effects that are currently being experienced. It is beneficial when a researcher seeks to gather data on phenomena that cannot be directly observed. This study centers around a survey conducted through a questionnaire based on Golemans' Model which is a modified version of Mayer Salovey's model. There are five components of emotional intelligence (Goleman, 1998), Self-Awareness, Self-Management, Motivation, Empathy, and Social skills. The questionnaire has a set of questions related to these five components.

Sample and Sampling

The current research focused on eleventh-grade students in a South Mumbai Junior college. Data were gathered from a random sample of 300 higher secondary students across two streams viz. Arts, and Commerce.

Data Analysis

Measures of central tendency, specifically the Mean, Median, and Mode, are widely recognized averages. The Mean also referred to as the arithmetic average, is the most prevalent measure of central tendency and can be described as the value achieved by dividing the sum of all values in a dataset by the total count of items. In the current study, the following statistical methods were applied.:

• Descriptive Analysis (Mean, Standard deviation).

• Differential Analysis (t - Values).

Hypothesis 1

‘Higher secondary school students exhibit low levels of Emotional Intelligence’.

Table 1: Mean and Standard Deviation Results for the Emotional Intelligence of Higher Secondary School Students in the Overall Sample

Sample	N	Mean (M)	Standard Deviation (SD)
Entire	300	62.1567	8.13713

Based on the table presented, it is evident that the overall group's mean and standard deviation are 62.1567 and 8.13, respectively. Therefore, it can be inferred that the average emotional intelligence of higher secondary school students is of a favorable nature.

Hypothesis 2

“There is no significant variance in emotional intelligence between male and female higher secondary school students.”

Table 2: ‘t’ value in the Average Emotional Intelligence of Male and Female Students in Higher Secondary Schools

Gender	N	Mean	S.D	“t” Value	Significance at 0.05 Level
Male	114	61.8879	8.33512	-0.454	Not Significant
Female	186	62.3261	8.02810		

According to the table presented, the calculated "t" value is -0.454, which is lower than the critical value of 1.96 at the 0.05 significance level. Therefore, there is no substantial difference in emotional intelligence between male and female higher secondary students. As a result, the null hypothesis is upheld. It can be deduced that female students excel over male students in terms of emotional intelligence.

Hypothesis 3.

“There is no notable difference in emotional intelligence between Arts and Commerce higher secondary school students”

Table 3: 't' value for the Mean Score of Emotional Intelligence among Students of Arts and Science Higher Secondary Schools

Subject	N	Mean	S.D	S.E.D.	“t” Value	Significance at 0.05 Level
Arts	83	61.67	8.48	.93108	-.656	Not Significant
Commerce	215	62.36	8.04			

The table indicates that the calculated "t" value is -0.656, which is below the critical value of 1.96 at the 0.05 significance level. Consequently, there is no significant difference in emotional intelligence between Arts and Commerce students. As a result, the null hypothesis is accepted. It is however inferred that Commerce students exhibit higher emotional intelligence compared to their counterparts in the arts.

Hypothesis 4.

“There is no significant difference in emotional intelligence among higher secondary school students from nuclear families compared to those from joint families.”

Table 4: 't' value for the Mean Score of Emotional Intelligence among Higher Secondary School Students from Nuclear and Joint Families

Subject	N	Mean	S.D	S.E.D.	“t” Value	Significance at 0.05 Level
Nuclear	151	61.2583	7.72655	.6287	-1.934	Not Significant
Joint	149	63.0671	8.4618			

The calculated 't' value from the table is -1.934, which is lower than the critical value of 1.96 at the 0.05 significance level. Consequently, there is no significant difference in emotional intelligence between higher secondary school students from nuclear families and those from joint families. As a result, the null hypothesis is accepted.

Hypothesis 5

"There is no significant difference in emotional intelligence among higher secondary school students from various family income levels."

Table 5: 't' value in the Mean Score regarding the Emotional Intelligence levels of higher secondary school students based on their separate family monthly income.

Income Group	N	Mean	S.D	S.E.D.	"t" Value	Significance at 0.05 Level
Below 15000	147	63.0068	7.64136	0.6302	1.701	Not Significant
Above15000	153	61.4145	8.50979			

The calculated 't' value, as indicated in the table, is 1.701, which is below the critical value of 1.96 at the 0.05 significance level. Consequently, there is no significant difference in the emotional intelligence of higher secondary school students based on their varying monthly incomes. Thus, the null hypothesis is upheld.

Findings

- The study indicates that the emotional intelligence of higher secondary school students is generally at an average level.
- Findings indicate that female students exhibit higher emotional intelligence compared to their male counterparts.
- Additionally, there is no notable difference in emotional intelligence between higher secondary school students in the Arts and Commerce streams.
- Moreover, there is no significant variation in emotional intelligence among higher secondary school students from nuclear families compared to those from joint families.
- Lastly, the emotional intelligence of higher secondary school students does not significantly differ according to their families' monthly income levels.

Implications

- It is therefore recommended that colleges and institutes consider the integration of Emotional Intelligence to improve the competencies of both teacher educators and students.
- Educational institutions should consider incorporating Yoga and Meditation into their programs to enhance Emotional Intelligence and hire faculty members with high emotional intelligence, which is vital for nurturing emotional skills in students.
- The current educational policy should be maintained, as it has yielded a balanced level of educational adjustment.
- Emotional Quotient programs can help institutions improve performance and foster strong learning connections. This promotes engagement, trust, and honesty, leading to a more successful and improved teaching and learning process, and excellent achievement in educating and effectively managing change.

Conclusion

An emotion can be defined as a physiological reaction to significant situations that cannot be solely addressed by intellect, such as threats, profound loss, perseverance in the face of challenges, forming relationships, and establishing a family. To foster emotional growth, it is essential to integrate the concept of emotional intelligence into school curricula. In today's competitive environment, achievement has emerged as a crucial determinant of an individual's progress in the personal, educational, and social spheres. By engaging both the emotional and rational aspects of students' brains, they can broaden their responses to new experiences and incorporate emotional memories into their decision-making processes. This approach can help students avoid the repetition of past mistakes. Given that teachers are often viewed as secondary parental figures, they play a crucial role in influencing the behavior of future generations. The contemporary understanding of emotional intelligence is relatively new, and further exploration is needed to fully comprehend its scope and the most effective ways to implement it.

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Pixels to Profit: The Commercialization of Generative AI in E-Commerce Art

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1.Abstract

This study explores the financial viability and commercialization of AI-generated art in hybrid e-commerce platforms. Using primary data from 200 consumers and insights from 10 e-commerce platforms, it examines consumer preferences, purchasing behaviors, and profitability factors.

Findings reveal that 86% of respondents are familiar with hybrid e-commerce, and 58% recognize the value of AI art in enhancing store appeal. Digital prints (60%) are the most preferred, followed by canvas prints (20%), custom AI portraits (15%), and NFTs (5%). Lower prices (50%) and customization (30%) are key drivers of financial appeal. The study concludes that AI-generated art is financially viable due to its affordability, scalability, and customization potential, offering profitable growth opportunities in e-commerce.

Keywords: Generative AI, E-Commerce Art, Commercialization, Digital Art, Financial Viability, Consumer Preferences, AI-Generated Art

2. Introduction

Where Creativity Meets Convenience: AI Transforming Hybrid Ecommerce. E-commerce has revolutionized shopping, offering convenience and accessibility at our fingertips. Yet, the brick-and-mortar experience still holds a charm, providing human interaction and tactile exploration. Hybrid e-commerce bridges this gap, seamlessly blending online and offline worlds for a richer shopping experience. Meanwhile, Artificial Intelligence (AI) is rapidly evolving, demonstrating remarkable creativity in assisting artists and pushing artistic boundaries. But its impact extends beyond the canvas, holding immense potential for the business world. So, what happens when these two innovative forces – hybrid e-commerce and AI – converge? Buckle up, because the future of shopping is set for a dramatic transformation.

3. Research Problem

While Generative AI offers creative possibilities, its financial viability in e-commerce remains underexplored. The challenge lies in assessing whether AI-generated art can generate sustainable profits, attract buyers, and compete with human-made art.

4. Research Questions

1. How has Generative AI evolved in digital art production?
2. What are consumer preferences regarding AI-generated art in e-commerce?
3. Is AI-generated art financially viable and profitable for e-commerce platforms?
4. What challenges and opportunities exist in the commercialization of AI art?

5. Literature Review: -

- Online shopping websites are utilizing advanced technology to make finding products faster and easier for users. One approach involves using pictures to recommend items. This system organizes and finds products based on the visual information in their images. Special algorithms analyze the content of these images, enabling the recommendation system to match users with relevant products. Real-world experiments demonstrate that this method effectively delivers accurate product suggestions. **[Bing Li, Jiahua Li, Xijun Ou , 2022]**
- Key areas in Generative AI for hybrid e-commerce include personalized product suggestions with recommender systems, understanding customer satisfaction through sentiment analysis, and building trust with AI-driven security and transparency. Personalization is key, with AI tailoring the shopping experience. Chinese institutions lead in AI research, publishing in computer science, AI, business, and management journals. While findings show AI's potential to improve online shopping, further research is needed to understand its full capabilities and address new challenges. **[Ransome Epie Bawack, Samuel Fosso Wamba, Shahriar Akter, 2022]**
- The hybrid e-commerce sites have become popular due to the internet and digital technologies. A smart system that uses machine learning to recommend products to users is proposed, with a lot of data being generated. This system combines clustering (grouping similar things) and XGBoost (a type of algorithm) to understand what users

might like. This system has also been tested with data from regular users on an e-commerce site to see if it works well. **[Antonio Panarese, Giuseppina Settanni, Angelo Galiano, 2023]**

6. Objectives

1. To analyze consumer purchasing behavior in hybrid commerce stores.
2. To evaluate the perceived benefits of AI-generated art for hybrid e-commerce stores.
3. To evaluate consumer preferences and purchasing behaviors regarding AI-generated art products.
4. To evaluate consumer preferences and purchasing behaviors regarding AI-generated art products.
5. To investigate the financial viability and profitability of AI-generated art in e-commerce.

7. LIMITATIONS OF THE STUDY

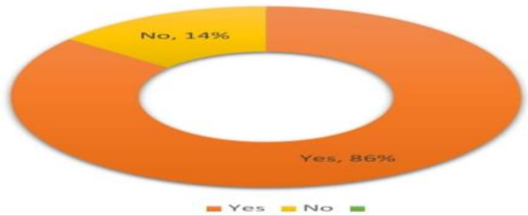
1. The study is limited toMumbai Suburban because of time constraints.
2. Sample size used for the study is small. Hence, the results cannot be taken as universal
3. The limitations of the Convenience sampling technique are applicable to this study.

8. Methodology

- **Research Design:** The study will follow a **descriptive and analytical research design**,
- **Sampling Technique**
  Population: E-commerce platforms, digital art marketplaces, and consumers of AI-generated art.
  Sampling Method: Convenience sampling
  Sample Size: Sample Size:10 e-commerce platforms offering AI-generated art.
  200 consumers purchasing or interacting with AI-generated art.
- **Data Collection Methods**
  Primary Data:
  Structured Questionnaire:
  For **Consumers:** To gather data on purchasing preferences, price sensitivity, and perceived value of AI art.
  For **Platforms/Artists:** To understand commercialization strategies, pricing models, and market challenges.
  Secondary Data:
  Industry Reports:
  Market research reports on **AI in e-commerce** and digital art trends.
  Academic and Trade Publications:
  Research papers and trade articles discussing **Generative AI's impact on the art market**.

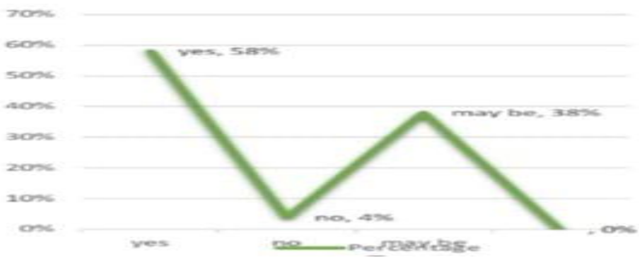
9. Data Analysis and Interpretation: -

1. Have you ever shopped at a hybrid e commerce store



Interpretation:
Based on the responses, it seems that a significant majority, 86%, have experienced shopping at a hybrid e-commerce store, while a smaller 14% have not.

2. Do you think using AI-generated art could benefit hybrid e-commerce stores



Interpretation:
AI-generated art can enhance hybrid e-commerce stores by offering unique, diverse visuals that captivate customers. The majority (58%) supporting its benefits suggests its potential value in attracting and engaging audiences.

3. What type of AI-generated art products would you be most interested in purchasing?

Particulars	Percentage
Digital prints	60
Canvas prints	20
Customized AI-generated portraits	15
NFTs (non-fungible tokens)	5
Total	**100**

Interpretation:
The distribution of digital artwork in this study reveals that **digital prints** constitute the majority at **60%**, followed by **canvas prints at 20%, customized AI-generated portraits at 15%, and NFTs**at **5%**, collectively accounting for **100%** of the sample.

4. Investigate the financial viability and profitability of AI-generated art in e-commerce.

Particulars	Percentage
Lower prices compared to traditional art	50
Customization and personalization options	30
Integration with NFTs or blockchain for ownership verification	10
Exclusive collaborations with known artists or brands	10
Total	**100**

Interpretation:
The distribution of factors influencing the appeal of digital artwork in this study shows that**lower prices compared to traditional art**account for**50%,** followed by**customization and personalization options at 30%,** while both**integration with NFTs or blockchain for ownership verification**and**exclusive collaborations with known artists or brands**contribute **10%** each, collectivelyrepresenting **100%** of the sample.

10. Findings

1. **Consumer Adoption of Hybrid E-Commerce Stores**
   - A **significant majority (86%)** of respondents have experience shopping at**hybrid e-commerce stores**, while only **14%** have not.
   - This indicates a **growing familiarity and comfort** with hybrid platforms that blend **physical and digital shopping experiences**, making them a viable market for AI-generated art.
2. **Consumer Interest in AI-Generated Art**
   - The study reveals that **58% of respondents** believe AI-generated art can enhance hybrid e-commerce stores by offering **unique and diverse visuals**.
   - This suggests that AI art has **strong potential to attract and engage audiences**, enhancing the visual appeal and marketability of hybrid e-commerce platforms.
3. **Preferred AI-Generated Art Products**

The distribution of **preferred AI art products** shows:
   - **Digital prints (60%)** dominate the market, indicating a strong preference for**affordable and easily accessible**digital artwork**.**
   - **Canvas prints (20%)** appeal tothose seeking**gallery-style home décor.**
   - **Customized AI-generated portraits (15%)** reflect a niche market for**personalized and unique art pieces.**
   - **NFTs (5%)** represent a smaller but emerging market segment, appealing to **crypto-savvy buyers** and collectors.

4. **Factors Driving Financial Viability**

The factors influencing the **financial appeal** of AI-generated art indicate:
   - **Lower prices compared to traditional art (50%)** make AI art more **accessible and affordable**, driving higher sales volumes.
   - **Customization and personalization (30%)** add perceived value, making the art more **appealing and unique** to individual buyers.
   - **Integration with NFTs or blockchain (10%)** offers **proof of ownership and exclusivity**, attracting collectors and investors.
   - **Exclusive collaborations with known artists or brands (10%)** enhance **credibility and desirability**, boosting profitability through premium pricing.

11. Recommendations

❖ **Expand Affordable Product Offerings:**
- Since 60% of consumers prefer digital prints, e-commerce platforms should focus on expanding affordable AI art collections.
- Introduce bundled offers or discounted multi-piece sets to drive larger purchases.
- Offer custom-sized digital downloads to cater to different customer preferences.

❖ **Leverage Personalization for Higher Margins:**

- With 30% of respondents valuing customization, platforms should offer:
- AI-generated portraits with personalized features (e.g., facial characteristics, styles).
- Customizable filters (color themes, backgrounds) to increase product differentiation.
- Implement dynamic pricing models, charging higher prices for more intricate personalization.

12. Conclusion

The study highlights that AI-generated art has **strong financial viability** in e-commerce due to its **affordability, customization, and accessibility**. The growing adoption of hybrid e-commerce platforms, combined with consumer interest in personalized AI art, suggests **promising profitability and market expansion opportunities.**

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Mumbai's Youth and Cryptocurrency: A Study of Social Media Influences on Investment Decisions

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Abstract:
This study investigates the expanding influence of social media on cryptocurrency investing decisions among Mumbai's youth, a fast-developing financial powerhouse in India. With the rise of digital platforms, young investors are turning to social media sites like Instagram, Twitter, YouTube, and Telegram for financial advice, market data, and peer recommendations. This study investigates how social media affects these young investors' perspectives, motivations, and risk behaviours. The study finds significant drivers of bitcoin investment through surveys, interviews, and content analysis of social media posts. These include social validation, influencer recommendations, and the fear of missing out (FOMO). Furthermore, it handles possible hazards such as disinformation, market volatility, and a lack of formal financial education among the investors. The findings highlight the need for more regulation and education to protect young investors' financial interests in the cryptocurrency field. This study contributes to our understanding of how social media influences financial behaviour in the digital economy.
Keywords: Cryptocurrency, Social Media Influence, Youth Investment, Digital Economy.

Introduction

A digital currency protected by encryption, Cryptocurrency has emerged as one of the most disruptive developments in the world financial system. Investors from all around the world have been lured to this new asset class because of its decentralized structure, lack of governmental regulation, and potential for large profits. Younger generations are especially interested in it. Mumbai, a center of financial expansion and industrial activity in India, has seen a sharp increase in interest in cryptocurrencies, particularly among its young people. Digital currencies are being used by these young investors, who are generally more receptive to financial risks and technical breakthroughs, as a way to diversify and build wealth.

But in addition to technological and financial incentives, social media plays a big role in influencing young people in Mumbai's decisions to invest in cryptocurrencies. Attitudes toward digital currencies are significantly shaped by websites such as Instagram, Twitter, YouTube, Reddit, and dedicated cryptocurrency forums. Young people's investment plans are influenced by the insights, advice, and market trends that social media influencers, cryptocurrency fans, and financial analysts frequently communicate. Social media material may both inform and increase the sense of urgency to engage in the cryptocurrency market, from tips on new coins and tokens to success stories of early investors who made big profits.

For Mumbai's digital native youth, social media is more than simply a communication tool; it is a source of information, validation, and social currency. The immediate availability of real-time market updates, along with numerous discussions in online groups, produces a dynamic atmosphere that promotes peer influence. This online conversation might result in the establishment of "crypto hype" or fear of missing out (FOMO), which drives young investors' decision-making processes.

This study intends to look more into the relationship between social media and cryptocurrency investment practices among Mumbai's youth. This study aims to provide useful insights into how social media affects investment decisions by investigating the sorts of social media material that engage with this population, the role of influencers, and how online platforms modify risk perceptions and decision-making processes. The findings may have larger implications for understanding young investors' digital financial practices, as well as providing vital information for policymakers and financial institutions managing the cryptocurrency field.

Literature Review

Kaul, V. (2022)

This paper examines how social media platforms like Twitter, YouTube, and Telegram shape cryptocurrency investment behaviors among Indian youth. Kaul highlights the role of influencers and viral trends in driving impulsive trading decisions, with a focus on Mumbai’s tech-savvy demographic. The study warns of misinformation risks but acknowledges social media’s growing dominance in financial literacy.

Patel, R., & Desai, M. (2021)
Patel and Desai analyze how peer networks on Instagram and WhatsApp impact cryptocurrency adoption. Their survey of 500 Mumbai-based investors aged 18–35 reveals that 68% rely on social media for market tips, often bypassing traditional research. The paper critiques the lack of regulatory awareness among young investors.
Sharma, S. (2023)
Sharma explores the link between "Fear of Missing Out" (FOMO) and speculative crypto trading fueled by platforms like Reddit and TikTok. The study notes Mumbai's youth are particularly susceptible to hype-driven investments, with 42% of respondents admitting to losses due to influencer-backed "pump-and-dump" schemes.
Mehta, A., & Iyer, K. (2020)
This ethnographic research delves into how meme culture on Facebook and Discord normalizes cryptocurrency trading among college students. Mehta and Iyer argue that humor and relatability in memes lower perceived risks, encouraging reckless investment behaviors despite market volatility.
Joshi, N. (2022)
Joshi's policy-oriented paper critiques the unchecked promotion of crypto assets by unverified influencers. Citing Mumbai-based case studies, it calls for stricter SEBI guidelines on financial content and advocates for investor education programs to counter social media misinformation.

Research Methodology

Research Design
This paper is mainly a Case Study to be developed based upon Descriptive through involving participants and using them in the role as users of some digital payments.

Data Collection Methods and Instruments
This research shall use primary data as well as secondary data. Primary data is mainly in quantitative form. The primary data shall be collected through Survey Method. The survey will be conducted through a Questionnaire as an instrument of data collection. Secondary information shall be collected through authentic reports, journals, books, manuals, research reports, newspapers and available online sources.

Sample Size
Primary data will be gathered from 77 respondents who will be the users of Social Media.

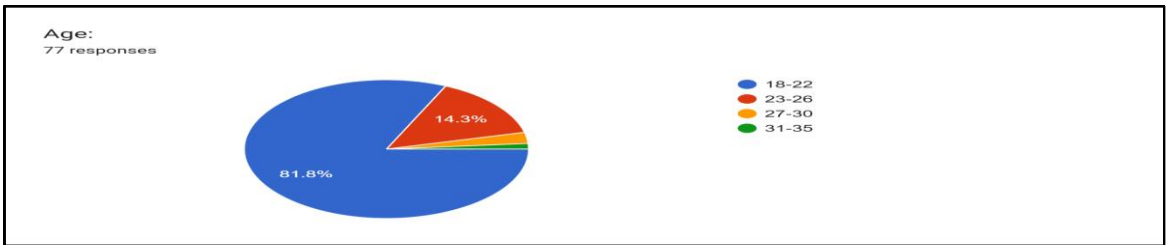
Objectives of the Study
- ✓ To examine the impact of social media on investment decisions related to cryptocurrency among Mumbai's youth.
- ✓ To Investigate the aspects that contribute to social media influencers' credibility and persuasiveness in the context of cryptocurrency investing.
- ✓ To explore the types of information and content related to cryptocurrency investments that are shared on social media platforms.
- ✓ To assess the level of financial literacy and risk awareness among young Mumbaikars who invest in cryptocurrency.

Significance of the Study
This study will contribute to the existing literature on cryptocurrency adoption, social media influences, and investment behavior. The findings will provide valuable insights for policymakers, regulatory bodies, and financial institutions seeking to understand the dynamics of cryptocurrency investments among young Indians. Furthermore, this research will inform the development of targeted interventions aimed at promoting financial literacy and responsible investment practices among Mumbai's youth.

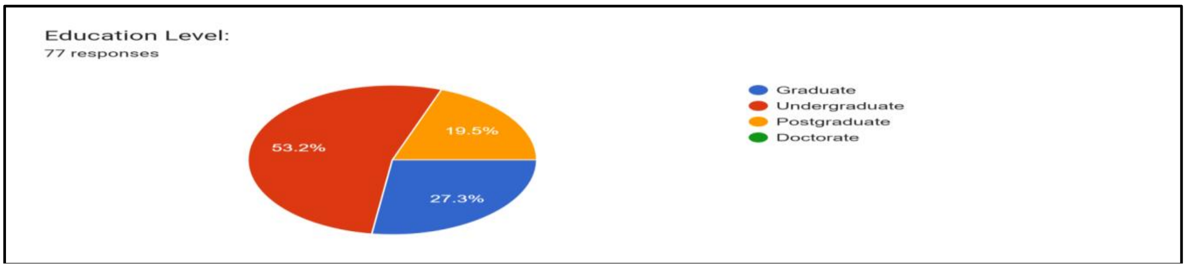
Scope and Limitations
This study will focus on young Mumbaikars aged between 18 and 35 years, who have invested in cryptocurrency or are interested in doing so. The research will employ a mixed-methods approach, combining both qualitative and quantitative data collection and analysis methods. While this study aims to provide a comprehensive understanding of social media influences on investment decisions, it is limited to the Mumbai context and may not be generalizable to other regions or demographics.

Data Analysis and Interpretation
Data collected from 77 respondents has been analysed and visually represented using pie charts and bar graphs.

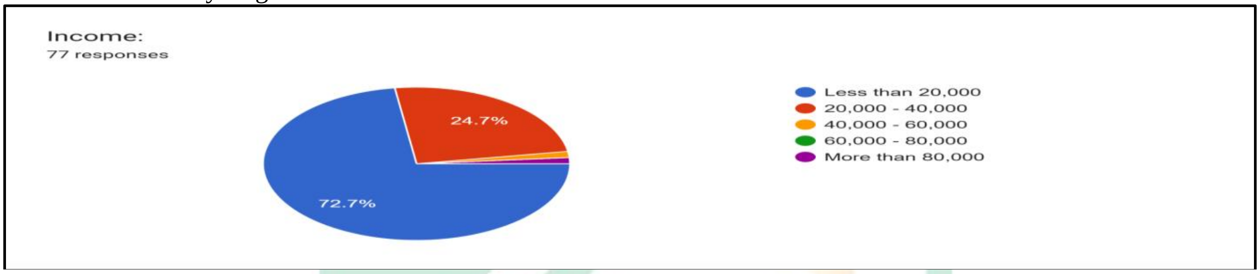
 ISBN No- 978-93-342-5395-5



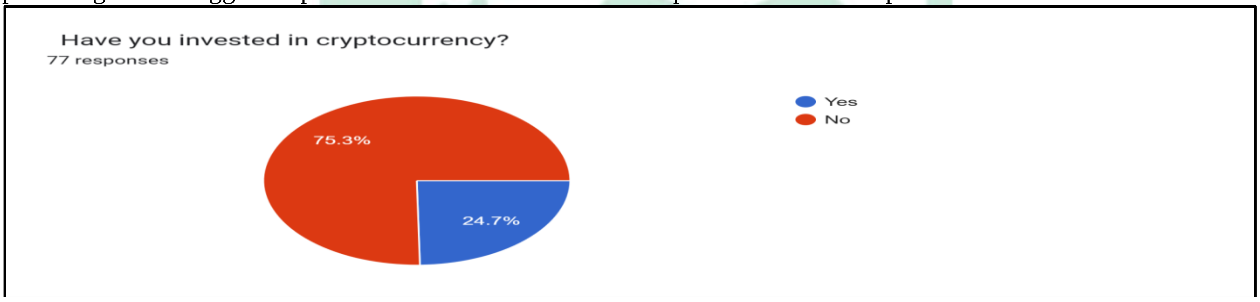
81.8% of people were from the age of 18-22 years.14.3% of the people from the age of 23-26 years Whereas very few people were from the age group 27-35 years. Since **over 80%** of respondents are between **18-22 years**, this confirms that cryptocurrency adoption among Mumbai's youth is largely **driven by the youngest investors**.



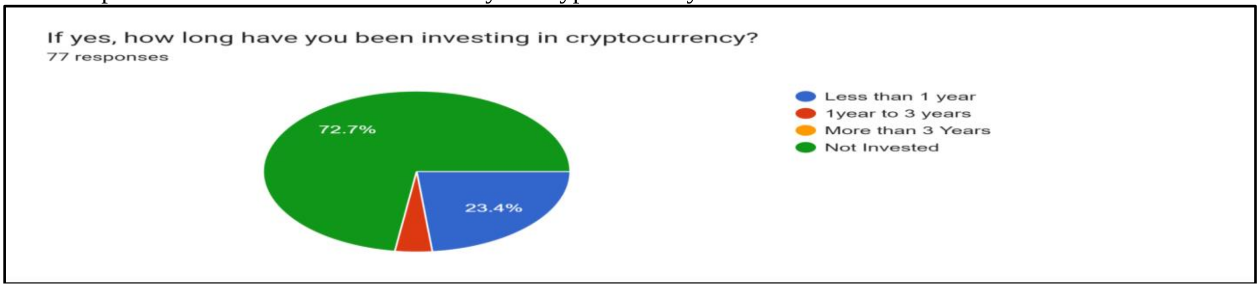
The majority (53.2%) of respondents are undergraduates, followed by graduates (27.3%) and postgraduates (19.5%). This indicates that Mumbai's youth engaging with cryptocurrency on social media are primarily students, with a lesser proportion of highly educated individuals. This suggests that social media may play a crucial role in shaping financial decisions at an early stage of education and career**.**



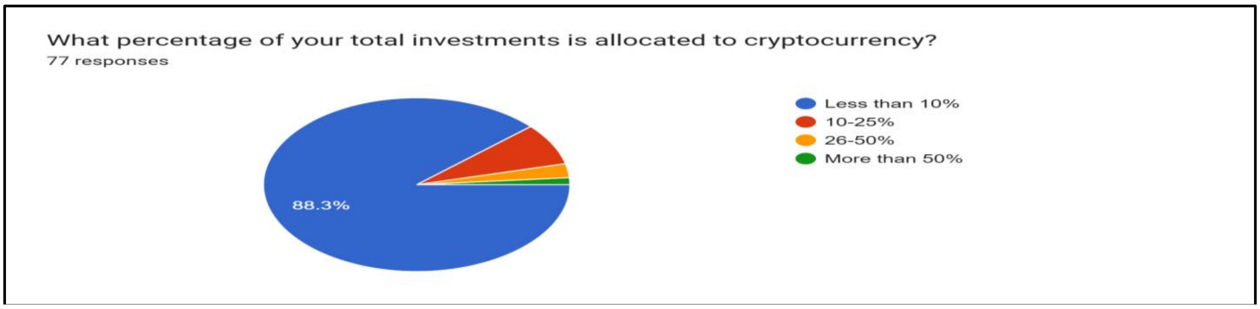
The pie chart represents income distribution among 77 respondents. The majority (72.7%) earn less than 20,000, while 24.7% fall within the 20,000–40,000 range. Higher income brackets (40,000 and above) constitute a very small percentage. This suggests a predominance of lower-income respondents in the sample.



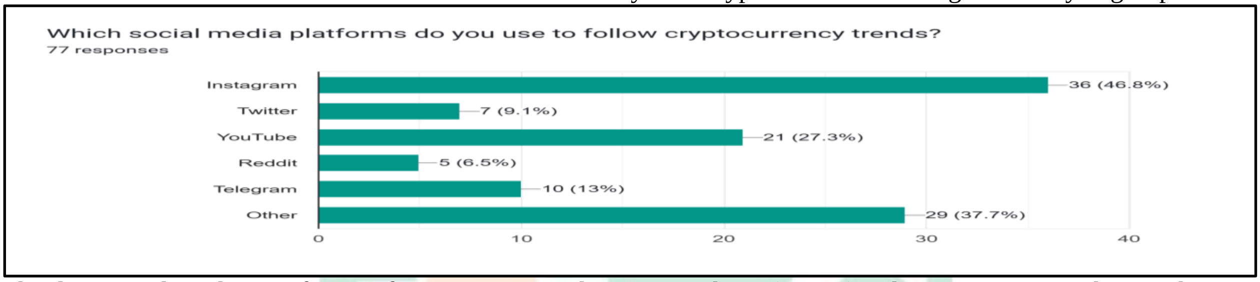
According to the above Graph the study shows that 75.3% of the respondents invested in Cryptocurrency and 24.7 % of the respondents does not invest their money in Cryptocurrency.



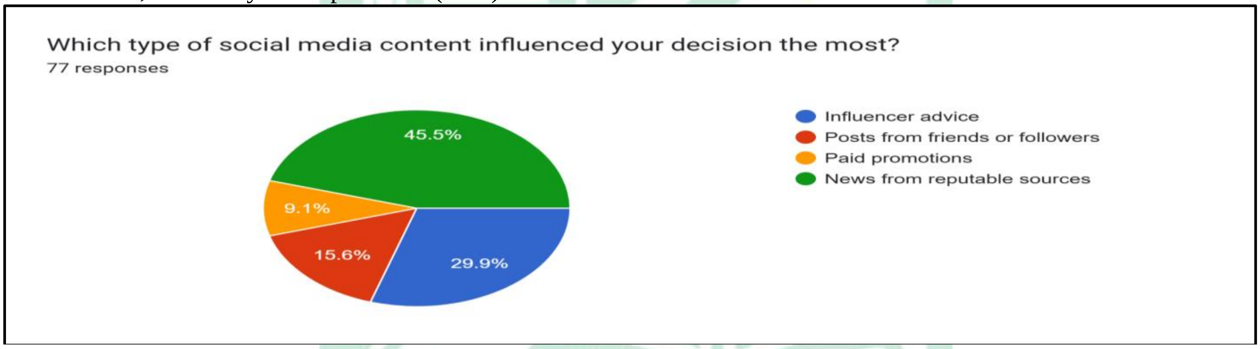
The pie chart shows that 72.7% of respondents have not invested in cryptocurrency, indicating a lack of participation in the crypto market. Among investors, 23.4% have been investing for less than a year, while a small proportion has invested for longer. This suggests that cryptocurrency adoption remains limited among the surveyed group.



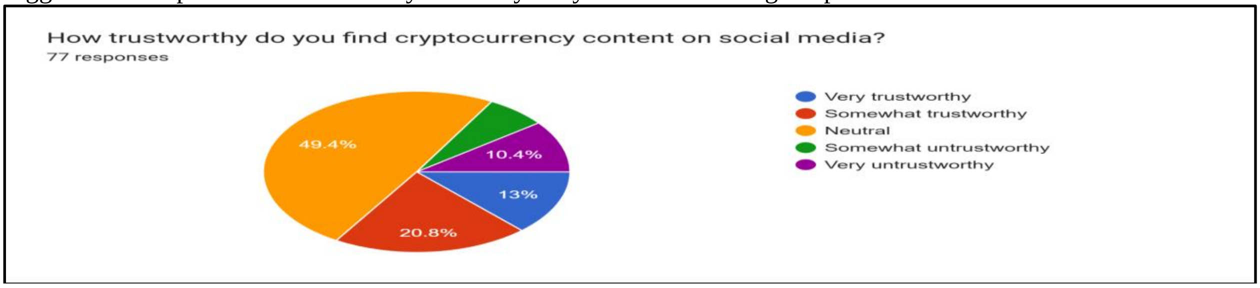
The pie chart indicates that 88.3% of respondents allocate less than 10% of their total investments to cryptocurrency, suggesting a low level of commitment to crypto assets. Only a small fraction invests more significantly, highlighting cautious investment behavior and limited trust or familiarity with cryptocurrencies among the surveyed group.



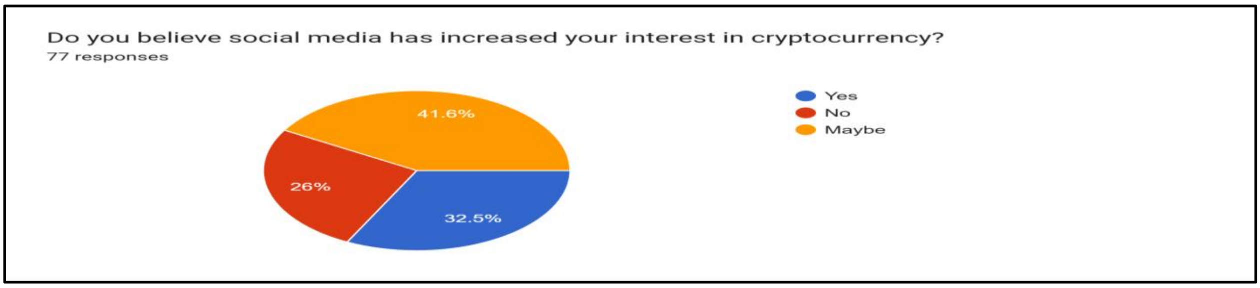
The data reveals a clear preference for Instagram, with 36 respondents (46.8%) indicating its use, making it the most popular platform. YouTube follows as the second most preferred platform, cited by 21 respondents (27.3%).A notable portion of the respondents, 29 individuals (37.7%), reported using platforms categorized as "Other," suggesting a wide array of alternative social media sources beyond the listed options. Traditional platforms like Twitter (9.1%) and Reddit (6.5%) show relatively low usage in this context. Telegram, a messaging platform often associated with crypto communities, is used by 10 respondents (13%).



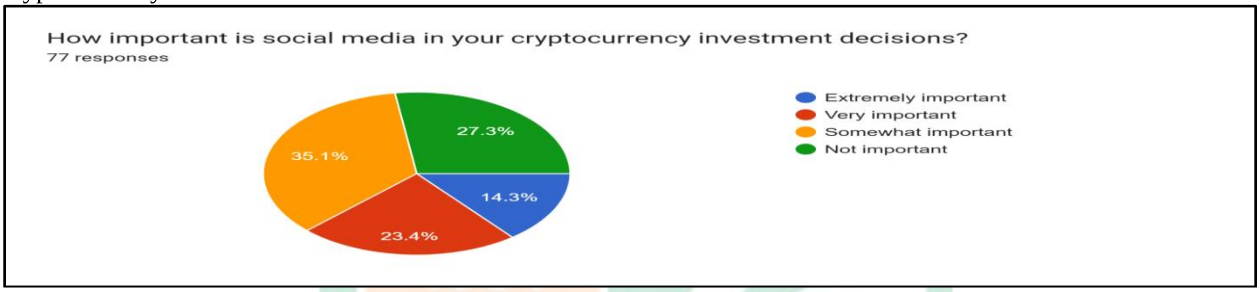
The pie chart illustrates the distribution of influence from different types of social media content on decision-making, based on 77 responses. The most significant influence comes from **"News from reputable sources,"** accounting for 45.5% of the responses. This indicates a strong reliance on credible and trustworthy information when making decisions. Following this, **"Influencer advice"**holds the second-largest share, with 29.9% of respondents citing it as influential. This suggests that opinions and recommendations from influencers play a substantial role in shaping decisions, although less so than reputable news sources.**"Posts from friends or followers"** represent 15.6% of the influence, indicating that personal connections and social circles have a moderate impact on decision-making. Lastly, **"Paid promotions"** have the least influence, with only 9.1% of respondents acknowledging their impact. This suggests that respondents are relatively less swayed by direct advertising or sponsored content.



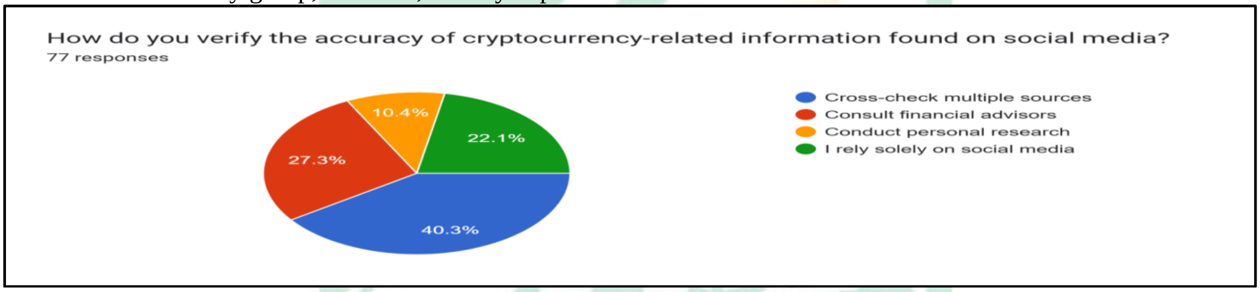
Most respondents are neutral(49.4%) about the trustworthiness of cryptocurrency content on social media, with significant portions leaning towards both somewhat trustworthy and somewhat untrustworthy. Very trustworthy and very untrustworthy responses are minimal.



The largest segment, representing 41.6% of respondents (32 individuals), selected **"Maybe"**. This indicates a significant degree of uncertainty or ambivalence regarding the direct impact of social media on their cryptocurrency interest. It suggests that while social media might play a role, it's not a definitive or sole factor. The **"Yes"** category, with 32.5% of respondents (approximately 25 individuals), indicates that a substantial portion acknowledges social media's positive influence on their cryptocurrency interest. The **"No"** category, with 26% of respondents (approximately 20 individuals), represents those who believe social media has not increased their interest in cryptocurrency.



35.1% of respondents find social media "somewhat important" for crypto investments, while 27.3% say it's "not important." 23.4% find it "very important," and 14.3% find it "extremely important. The data indicates a mixed perception of social media's importance in cryptocurrency investment decisions. While a significant portion sees it as moderately influential, a substantial number disregard it entirely, suggesting a reliance on diverse information sources. A noteworthy group, however, heavily depends on social media for investment cues.



The most prevalent method, used by 40.3% of respondents, is to **"Cross-check multiple sources"**. This indicates a strong inclination towards validating information by comparing it across different platforms and outlets, reflecting a cautious approach to social media content. The second most common method, used by 27.3% of respondents, is to **"Consult financial advisors"**. This suggests that a significant portion of individuals seek professional financial guidance to verify the accuracy of cryptocurrency-related information found on social media. Following closely, 22.1% of respondents **"Conduct personal research"**. This highlights a proactive approach where individuals independently investigate and analyze information to determine its accuracy, suggesting a degree of self-reliance and critical thinking. Lastly, 10.4% of respondents admit to **"Relying solely on social media"** for verification. This indicates a lack of critical evaluation and a potential vulnerability to misinformation or biased content.

Findings

- ✓ Majority of crypto users are young (18–22) and students.
- ✓ Most have low income and invest less than 10% in crypto.
- ✓ Instagram is the top source for crypto info, followed by YouTube.
- ✓ News sources and influencers influence decisions more than ads.
- ✓ Trust in social media content is mixed.
- ✓ Social media has a moderate positive impact on crypto interest.
- ✓ Most users verify info before investing; few rely solely on social media.
- ✓ FOMO and social hype drive impulsive investments.

Conclusion

The study highlights the significant role social media plays in influencing cryptocurrency investment decisions among Mumbai's youth. While digital platforms like Instagram, YouTube, and Telegram serve as primary sources of financial information, they also expose young investors to risks such as misinformation, market volatility, and impulsive trading driven by social validation and FOMO (Fear of Missing Out). The data reveals that although social media is an essential factor in investment decision-making, many young investors exhibit cautious behavior, with a preference for cross-verifying information through multiple sources. The findings emphasize the need for greater financial literacy and awareness to navigate the crypto market effectively.

Many young investors rely on influencer recommendations and community trends rather than performing extensive research or consulting with financial advisors. Although some respondents take a cautious approach by cross-checking information, a significant number continue to rely on unverified sources, exposing them to financial dangers such as pump-and-dump schemes and market manipulation. The study indicates that, while social media may be an effective instrument for financial education and market insights, it must be utilized responsibly and in conjunction with regulatory measures and investor awareness programs.

Suggestions & Recommendation

- ✓ **Stricter Regulations on Social Media Finance Content**: SEBI should require influencers to disclose credentials and sponsorships when promoting cryptocurrencies to prevent misleading information.
- ✓ **Crypto Education in Schools**: Integrate financial literacy, including crypto risks and strategies, into college curricula to build informed investors.
- ✓ **Verified Crypto Info Hub**: Create a government-backed platform for accurate, real-time crypto market data to aid investment decisions.
- ✓ **Promote Responsible Investing**: Launch campaigns to highlight the risks of volatile assets like crypto and the importance of diversification.
- ✓ **Peer-to-Peer Financial Education**: Engage with social media communities to provide factual insights and counter misinformation.
- ✓ **Cybersecurity Awareness**: Educate investors on securing digital wallets and protecting against cyber threats like hacking and phishing.
- ✓ **Expert-Initiated Influencer Partnerships**: Encourage collaborations between financial experts and influencers to share verified, research-based content.
- ✓ **Long-Term Investment Focus**: Shift the focus from speculative trading to long-term wealth-building strategies in crypto and other assets.

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Study on scope and issues in sustainable clothing industry

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Abstract:
The textile industry faces a monumental challenge: delivering essential products to a growing global population while minimizing its environmental footprint. This pressure for sustainability is no longer a distant threat, but a critical present concern. Consumers are demanding eco-friendly options, regulations are tightening, and resource scarcity looms on the horizon.
This ground-breaking research paper delves into the heart of this complex issue. It goes beyond simply outlining the environmental impact of the industry. Instead, it offers a comprehensive roadmap for navigating the path towards a more sustainable future.

Key words: Clothing Industry, Sustainability, Environment, Recycle.

Introduction:
Imagine a world where your morning coffee doesn't come at the cost of a depleted rainforest. Or where your favourite cleaning products don't pollute the water ways used by your community. Did you know that the global clothing industry generates over 200 million tons of plastic waste annually? Did you know that the global population is projected to reach nearly 10 billion by 2050, placing immense strain on our planet's resources? While these everyday products bring convenience to our lives, their production and consumption have a significant environmental and social impact. Consumers are increasingly demanding transparency and eco-friendly practices, making sustainability a strategic imperative for businesses in the clothings ector. These are just some of the considerations encompassed by the term "sustainability," a concept that's increasingly raising critical questions for businesses across industries, particularly the Clothing (CLOTHING) sector.
Businesses, as significant players in the global economy, have a critical role to play in adopting sustainable practices. This comprehensive guide will equip businesses, entrepreneurs, and managers with the knowledge and tools needed to implement actionable sustainability plans at all levels of their organization, fostering a more responsible future for the clothing sector.

Objectives of Research
1) Quantify the Environmental Impact: This research seeks to assess the environmental burden attributable to the clothing industry thing sector, focusing on waste generation, carbon footprint, and resource depletion.
2) Evaluate Sustainability Frameworks: This research will explore the effectiveness of Product Life Cycle Assessment (LCA) and the principles of the circular economy and environment, social and governance (ESG) in guiding sustainable practices within the clothing industry.

Literature Review:
Understanding ESG and its Relevance.
ESG stands for Environmental, Social, and Governance. It's a framework used to assess a company's commitment to operating in a sustainable and responsible manner. The goal of ESG is to capture all the non-financial risks and opportunities in hereto a company's day to day activities.
It encompasses three key pillars.

- Environmental: This dimension focuses on a company's impact on the planet, considering factors such as resource consumption, waste generation, greenhouse gas emissions, and pollution control measures. Companies also report on positive sustainability impacts they might have, which may translate into long-term business advantage. From a reporting perspective this is the most complex pillar.
- Social: The social pillar evaluates a company's relationship with its stakeholders, including employees, communities, and suppliers. It considers aspects like labour practices, diversity and inclusion within the workforce, ethical sourcing practices, and responsible supply chain management. Relevant companies are expected to report on how they provide access to their products and services to underprivileged social groups.
- Governance: This component examines a company's leadership, transparency, and accountability. Strong ESG governance involves setting clear sustainability goals, implementing effective policies, and maintaining transparentreportingpracticestobuildtrustwithinvestorsandstakeholders.

Riseof ESG:
ESG has become a permanent fixture in the business world, driven by a confluence of challenges and opportunities. On one hand, our planet faces critical issues like climate change and social inequality. Investors, regulators, and consumers are demanding that companies become responsible stewards, not just financially, butals of or the

environment and society. ESG provides a framework for businesses to address these issues and contribute to a more sustainable future.
On the other hand, strong ESG practices are increasingly seen as a path to success. Investors recognize the long-term benefits associated with ESG, leading to increased investment in companies with robust sustainability strategies. Consumers are also making purchasing decisions based on a company's values, rewarding brands that prioritize responsible practices. Finally, strict erregulations on environmental and social issues make ESG compliance crucial for navigating the evolving legal landscape.
In essence, ESG is gaining attention because it tackles critical challenges while simultaneously offering a pathway to long-term financial success and a more sustainable future.

RESEARCH METHODOLOGY
The methodologies section will include areas such as the Research design, Area of Study, Research Approach and Types and Sources of Data.This study uses descriptive and explanatory research design as a research method to study the topics covered within the case study. A qualitative approach was used for this research and using secondary data. Secondary data was used in this study. Secondary data was obtained from Published articles, books a

Exploring the Relevanceof ESG:
This research will explore how the CLOTHING industry can leverage ESG principles to:
- Minimize environmental impact: By focusing on eco-friendly packaging solutions, optimizing production processes to reduce waste and emissions, and sourcing materials from sustainable sources.
- Enhance social responsibility**:** Through fair labour practices, responsible sourcing through out the supply chain, and promoting diversity and inclusion within the workforce.
- Strengthen corporate governance**:** By establishing clear ESG goals, implementing transparent reporting practices, and holding leadership accountable for sustainability initiatives.

By adopting a comprehensive ESG approach, CLOTHING companies can navigate the evolving sustainability landscape, gain a competitive advantage, and contribute to a more responsible future.
Business and Environment: A Symbiotic but Strained Relationship
Businesses and the environment are intricately linked, existing in a dynamic and often strained relationship. Here, we'll explore the ways businesses interact with the environment, explore the roles and responsibilities businesses hold towards sustainability, and examine the specific environmental impact of the CLOTHING sector.
Interdependence and Impact:
Resource Reliance: Businesses depend heavily on the environment for their very existence. Raw materials, water, and energy – all critical for production – are extracted or generated from natural ecosystems. This dependence creates a responsibility for businesses to ensure the long-term health and sustainability of these resources.
Environmental Footprint: Unfortunately, business activities can significantly impact the environment. Manufacturing processes often generate pollution, releasing harmful chemicals and greenhouse gases into the air and water. Additionally, resourceextraction can lead to deforestation, soil degradation, and water depletion. Waste generation, a major issue in today's consumer society, is further exacerbated by the vast amount of packaging used in the CLOTHING sector.

Business Responsibility and Leadership:
Sustainability as a Core Value: Moving beyond mere compliance with environmental regulations, leading businesses are integrating sustainability principles into their core values and long-term strategies. This means actively minimizing environmental impact, promoting responsible sourcing practices, and fostering a culture of environmental awareness throughout the organization.
Boardroom Oversight: Boards of directors play a crucial role in driving sustainability efforts. They can set clear environmental performance expectations, establish measurable goals, and allocate resources for green initiatives. By providing strong leadership and oversight, boards can ensure sustainability remains a core focus for the company.
Analysis and Findings
CE Strategies for the Clothing Industry
The CE offers a toolbox of strategies that clothing companies can leverage to create a more sustainable future:
Reduce:
Minimize packaging: This can involve using concentrated product formulas, opting for reusable packaging formats, or implementing lightweight packaging designs. A study by McKinsey & Company: found that CLOTHING companies can reduce plastic packaging by up to 50% through innovative design and material choices.
Eco-design: Designing products for durability, reparability, and ease of disassembly extends their lifespan and reduces the need for frequent replacements.
Reuse:
Refill and reuse systems: Implementing refill stations or designing products with refillable containers allows

consumers to reuse packaging and reduce waste. Refill and reuse systems can reduce plastic packaging waste by up to 70%.
Durable products: Designing products with high quality materials and reparability features encourages consumers to keep and use them for longer.
Recycle:
Recyclable packaging: Using recyclable materials like aluminium, paper, or glass for packaging allows for efficientre cycling and reduces reliance on virgin resources.
According to the World Business Council for Sustainable Development (WBCSD): Designing packaging for recyclability can increase recycling rates by up to 20%.
Collaboration with waste management systems: Collaboration between CLOTHING companies and waste management systems is crucial to ensure proper collection, sorting, and recycling of packaging waste.
Recover:
Composting organic waste: Food waste and compostable packaging materials can be diverted from landfills and transformed into valuable fertilizer through compostinginitiatives.
Chemical recycling: Technologies for chemical recycling of plastic waste are emerging, offering possibilities to turn used plastic back into its raw materials and create new products.
Key Actions:
Track Regulations: Maintain a comprehensive inventory of relevant environmental regulations across all jurisdictions.
Measure Environmental Footprint: Develop life-cycle models to assess the environmental impact of products and services.
Track Trends: Monitor legislative developments, consumer behaviour shifts, and emerging trends in civil society.
Shift Managerial Sensibility: Increase environmental awareness among company leaders and employees through training and performance metrics.
Prepare for the Future: Equip employees and managers with the knowledge and skills to navigate potential future environmental scrutiny.
Implementation:

- Createa Sustainability Council to centralize efforts and coordinate across departments.
- Utilize G4 guidelines and reporting frameworks to guide sustainability initiatives.

Benefits:

- Proactive approach to potential future challenges.
- Increased awareness of environmental issues with in the company.
  Improved preparedness for future regulations and consumer demands.

Conclusion

This research paper has delved into the intricate relationship between the Clothing (CLOTHING) industry and environmental sustainability. We began by establishing a clear definition of sustainability, highlighting its multi faceted nature and its critical role in ensuring a healthy planet for future generations. We then explored the concept of ESG (Environmental, Social, and Governance) factors, emphasizing their increasing importance in business strategy and stakeholder value creation.

Theanalysisoftheclothingindustry'senvironmentalimpactrevealedacomplexpicture. While providing essential goods, this sector also generates significant waste through packaging, resource consumption, and production processes. The introduction of Life Cycle Assessment (LCA)asavaluabletoolforevaluatingenvironmentalimpactacross a product's entire life cycle was discussed, along with the potential of the circular economy model in minimizing waste and promoting resource recovery.

The identification of five key strategic issues facing the clothing industry in its quest for sustainability set the stage for exploring various strategic options. These options encompassed innovative packaging solutions, product reformulation for eco- friendliness, responsible sourcing practices, and energy and resource efficiency measures. Furthermore, the paper outlined a framework for developing a comprehensive sustainability strategy, one that integrates environmental considerations with core business objectives. This framework emphasized stakeholder engagement, clear target setting, and continuous evaluation of progress.

Moving from strategy to action, we examined the implementation of sustainability practices at different levels within an clothing organization. This included integrating sustainability into product design and development, responsible supply chain management, and engaging employees insustainability initiatives. Finally, thecritical role of sustainable packaging solutions, encompassing reuse, refillable systems, and sustainable materials, was explored in detail.

The path towards a sustainable future for the clothing industry requires a collective effort, one where businesses, consumers, and policymakers work together to ensure a healthy planet and a thriving future for generations to come. This research serves as aspring board for further exploration and innovation, paving the way for a more sustainable and responsible textile industry.

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The Role of Digital Payments in E-Commerce: A Case Study of Google Pay in India

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Abstract

The rise of digital payment systems has significantly fuelled the rapid expansion of e-commerce in India. Among these, Google Pay has emerged as a leading platform, revolutionizing the way consumers and businesses conduct financial transactions. Examining the function of digital payments in e-commerce is the goal of this study, focusing on Google Pay as a case study in the Indian market. The research explores the impact of digital payment solutions on consumer behaviour, merchant adoption, transaction security, and overall economic growth.

The Indian government is pushing for a cashless economy with initiatives like Digital Indiaand UPI (Unified Payments Interface), digital payment platforms have gained widespread acceptance. Google Pay, leveraging UPI, has simplified peer-to-peer transactions, bill payments, and online shopping experiences, offering convenience, security, and efficiency. This study analyses how Google Pay enhances transaction speed, reduces dependency on cash, and fosters access to financing for small and medium-sized businesses (SMEs). Additionally, the study assesses consumer trust in digital payment security and the challenges faced in digital transactions, such as cyber threats and technical disruptions.

A combination of qualitative and quantitative data collection techniques is used in the research process. Primary data is gathered through surveys and interviews with e-commerce users and merchants, while secondary data includes reports from government and financial institutions. Findings from this study will shed light on the evolving landscape of digital payments, their benefits, and challenges, offering recommendations for policymakers, businesses, and consumers to optimize the use of digital payment platforms in e-commerce.

Keywords: Digital Payments, E-Commerce, Google Pay, UPI, Financial Inclusion

Introduction

In the last decade, India has witnessed a remarkable transformation in its digital economy, driven by advancements in technology, increasing internet penetration, and the widespread adoption of smartphones. One of the most significant developments in this space has been the surge in digital payments, which has reshaped how financial transactions are conducted across various sectors. E-commerce, being one of the most rapidly expanding industries in India, has particularly benefited from the emergence of seamless and secure digital payment solutions.

The Indian government has been instrumental in advancing a cashless economy through programs like Digital India and the Unified Payments Interface (UPI). Digital systems such as Google Pay have been made possible by these innovations. which has rapidly gained popularity as a preferred payment mode for online and offline transactions. By offering fast, reliable, and user-friendly services, Google Pay has enabled millions of users to transact conveniently, fostering trust and reliability among consumers and merchants alike.

This research explores how Google Pay, as a digital payment platform, has impacted the e-commerce ecosystem in India. The study examines its role in enhancing consumer behavior, improving transaction efficiency, promoting merchant participation, and supporting financial inclusion. It also investigates user perceptions regarding the security and trustworthiness of the platform, along with identifying the challenges faced in digital transactions such as fraud risks, transaction failures, and technical glitches

Objectives

1. To evaluate how digital payments will improve Indian e-commerce transactions.
2. To investigate how Google Pay affects consumer behavior and trends in online purchasing.
3. To evaluate the security, efficiency, and convenience of Google Pay in e-commerce transactions.
4. To assess the challenges faced by users while using Google Pay for online purchases.

Review of Literature

The landscape of digital payments has undergone a radical transformation globally, with India emerging as a key player in the digital revolution. Scholars and industry experts have widely examined the interface between digital payment systems and e-commerce, uncovering several dimensions of this evolving ecosystem.

1. Digital Payments and Economic Acceleration

Raghuram & Ghosh (2018) observed that digital payment systems significantly reduce transaction friction and contribute to the velocity of money in a digital economy. Their findings suggest that platforms like Google Pay can act as microeconomic catalysts, especially in developing countries like India where traditional banking has limited reach.

2. Consumer Behavior in a Cashless World

 ISBN No- 978-93-342-5395-5

A unique behavioral shift has been identified by Sharma & Dey (2020), where convenience, instant gratification, and rewards have begun to drive consumers more than price alone. Their research emphasized that platforms offering cashback, gamification (such as Google Pay's 'scratch cards'), and seamless integration into lifestyle apps can subconsciously condition user habits.

3. E-Commerce Synergy with UPI

Patel & Bansal (2021) explored the synergy between India's UPI system and e-commerce platforms, suggesting that UPI-enabled apps like Google Pay provide a competitive edge by reducing cart abandonment rates due to faster and hassle-free checkout processes. The study found that integrating such platforms into the buyer journey increases conversion rates for digital marketplaces.

4. Trust and Security: The Hidden Currency

Research by Gupta & Verma (2019) highlighted that perceived security and data protection are among the top psychological barriers for digital payment adoption. Interestingly, users are more likely to trust global tech players like Google due to brand reputation, although any breach (real or rumored) can significantly impact user confidence.

5. Financial Inclusion and SMEs

World Bank reports and studies by Mehta (2022) emphasized the democratizing role of digital wallets in bringing small and medium enterprises into the digital economy. Google Pay, with its low entry barrier and wide accessibility, enables micro-entrepreneurs and even local kirana stores to tap into digital commerce.

6. The Evolution of Payment Habits Post-Pandemic

Post-COVID-19 literature reflects a dramatic shift in payment preferences. According to a 2021 report by NPCI, digital transactions surged as consumers avoided cash for safety. This "pandemic push" opened a window for long-term behavioural change, accelerating the adoption of platforms like Google Pay among hesitant users.

Hypothesis

The research will be guided by the following hypotheses:

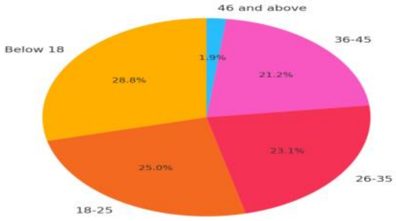
- **The null hypothesis** (H_0) states that Google Pay has no discernible effect on Indian consumers' e-commerce transaction behaviour.
- **Alternative Hypothesis** (H_1): Google Pay significantly influences Indian consumers' e-commerce transaction behaviour.

  In order to ascertain whether digital payments made with Google Pay have a substantial impact on online purchasing, customer trust, and transaction patterns, these

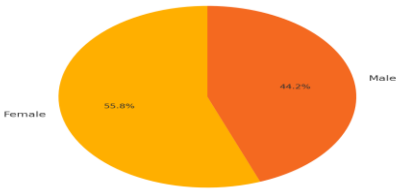
Data Findings

What is your age group?

Below 18: 15 responses (28.85%)
18-25: 13 responses (25.00%)
26-35: 12 responses (23.08%)
36-45: 11 responses (21.15%)
46 and above: 1 responses (1.92%)

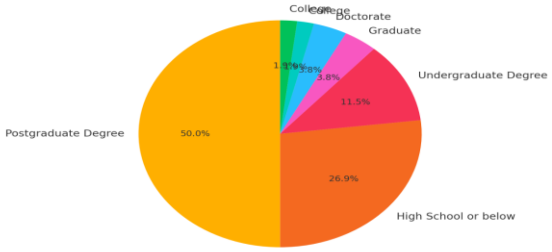


Gender: Female: 29 responses (55.77%)
Male: 23 responses (44.23%)



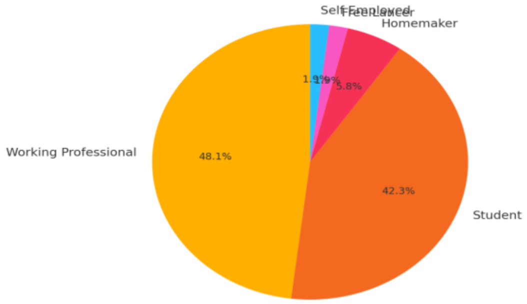
What is your highest level of education?

Postgraduate Degree: 26 responses (50.00%)
High School or below: 14 responses (26.92%)
Undergraduate Degree: 6 responses (11.54%)
Graduate : 2 responses (3.85%)
Doctorate: 2 responses (3.85%)
College: 1 responses (1.92%)
College : 1 responses (1.92%)



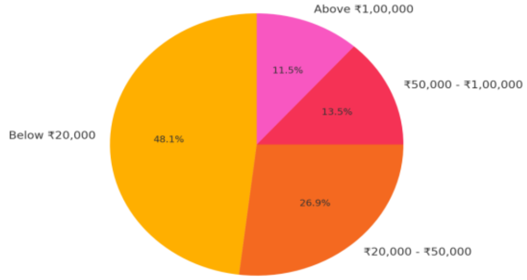
What is your occupation?

Working Professional: 25 responses (48.08%)
Student: 22 responses (42.31%)
Homemaker: 3 responses (5.77%)
Free Lancer : 1 responses (1.92%)
Self Employed: 1 responses (1.92%)



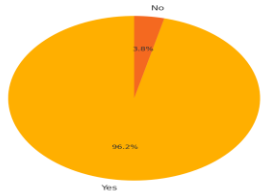
What is your average monthly income?

Below ₹20,000: 25 responses (48.08%)
₹20,000 - ₹50,000: 14 responses (26.92%)
₹50,000 - ₹1,00,000: 7 responses (13.46%)
Above ₹1,00,000: 6 responses (11.54%)



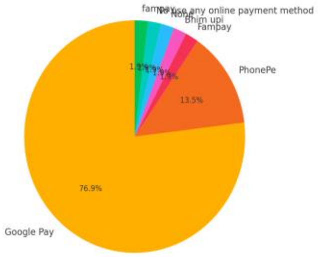
Are you aware of Google Pay as a digital payment platform?

Yes: 50 responses (96.15%)
No: 2 responses (3.85%)



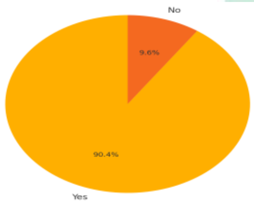
Which digital payment method do you use the most for online shopping?

Google Pay: 40 responses (76.92%)
PhonePe: 7 responses (13.46%)
Fampay: 1 responses (1.92%)
Bhim upi: 1 responses (1.92%)
None: 1 responses (1.92%)
No use any online payment method : 1 responses (1.92%)
fampay : 1 responses (1.92%)

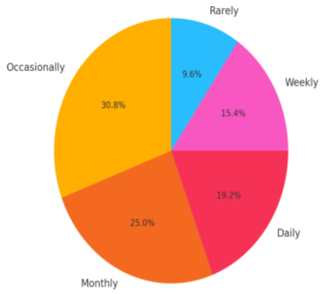


Do you use digital payment platforms for online shopping?

Yes: 47 responses (90.38%)
No: 5 responses (9.62%)

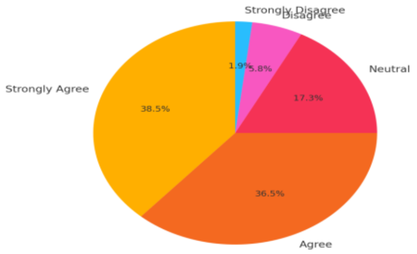


How frequently do you shop online?
Occasionally: 16 responses (30.77%)
Monthly: 13 responses (25.00%)
Daily: 10 responses (19.23%)
Weekly: 8 responses (15.38%)
Rarely: 5 responses (9.62%)



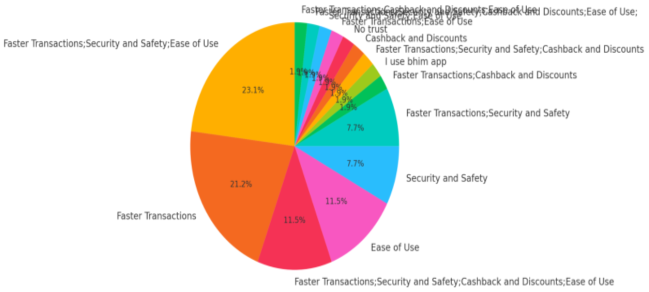
Has Google Pay influenced how frequently you shop online?

Strongly Agree: 20 responses (38.46%)
Agree: 19 responses (36.54%)
Neutral: 9 responses (17.31%)
Disagree: 3 responses (5.77%)
Strongly Disagree: 1 responses (1.92%)



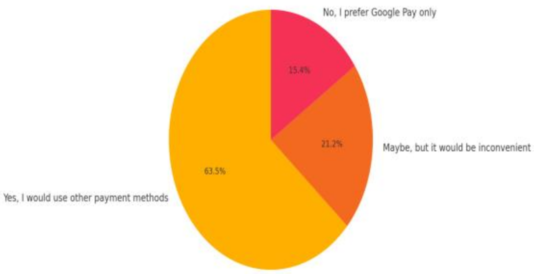
What are the key reasons you prefer Google Pay for online shopping?

Faster Transactions;Security and Safety;Ease of Use: 12 responses (23.08%)
Faster Transactions: 11 responses (21.15%)
Faster Transactions;Security and Safety;Cashback and Discounts;Ease of Use: 6 responses (11.54%)
Ease of Use: 6 responses (11.54%)
Security and Safety: 4 responses (7.69%)
Faster Transactions;Security and Safety: 4 responses (7.69%)
Faster Transactions;Cashback and Discounts: 1 responses (1.92%)
I use bhim app: 1 responses (1.92%)
Faster Transactions;Security and Safety;Cashback and Discounts: 1 responses (1.92%)
Cashback and Discounts: 1 responses (1.92%)
No trust : 1 responses (1.92%)
Faster Transactions;Ease of Use: 1 responses (1.92%)
Security and Safety;Ease of Use: 1 responses (1.92%)
Faster Transactions;Security and Safety;Cashback and Discounts;Ease of Use;: 1 responses (1.92%)
Faster Transactions;Cashback and Discounts;Ease of Use: 1 responses (1.92%)



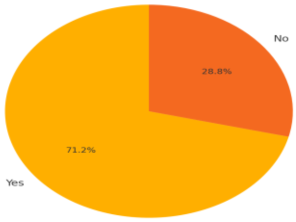
Would you still shop online if Google Pay was not available?

Yes, I would use other payment methods: 33 responses (63.46%)
Maybe, but it would be inconvenient: 11 responses (21.15%)
No, I prefer Google Pay only: 8 responses (15.38%)



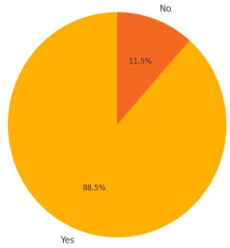
Do you feel more comfortable making larger online purchases because of Google Pay?

Yes: 37 responses (71.15%)
No: 15 responses (28.85%)



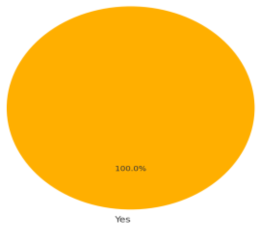
Has Google Pay made your online shopping experience easier?

Yes: 46 responses (88.46%)
No: 6 responses (11.54%)



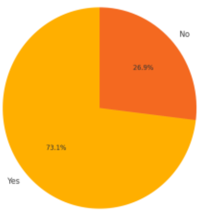
Do you believe Google Pay has improved the speed of online transactions?

Yes: 52 responses (100.00%)



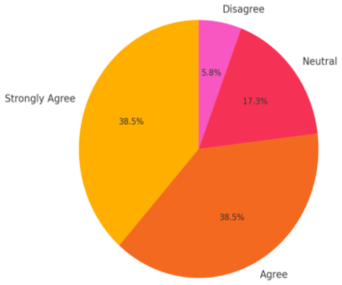
Has Google Pay influenced your spending habits (e.g., spending more due to ease of transactions?

Yes: 38 responses (73.08%)
No: 14 responses (26.92%)



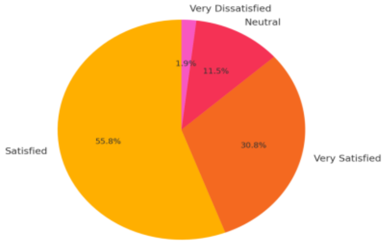
Do you find it easier to shop on e-commerce platforms that accept Google Pay?

Strongly Agree: 20 responses (38.46%)
Agree: 20 responses (38.46%)
Neutral: 9 responses (17.31%)
Disagree: 3 responses (5.77%)



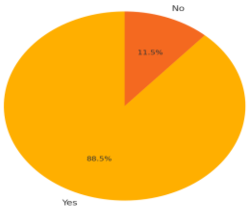
How satisfied are you with Google Pay's transaction success rate?

Satisfied: 29 responses (55.77%)
Very Satisfied: 16 responses (30.77%)
Neutral: 6 responses (11.54%)
Very Dissatisfied: 1 responses (1.92%)



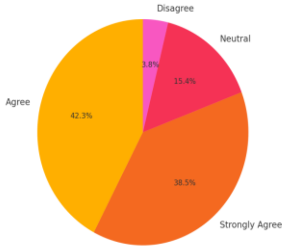
Would you recommend Google Pay to others for online shopping?

Yes: 46 responses (88.46%)
No: 6 responses (11.54%)



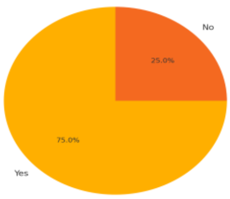
Do you trust Google Pay for secure transactions?

Agree: 22 responses (42.31%)
Strongly Agree: 20 responses (38.46%)
Neutral: 8 responses (15.38%)
Disagree: 2 responses (3.85%)



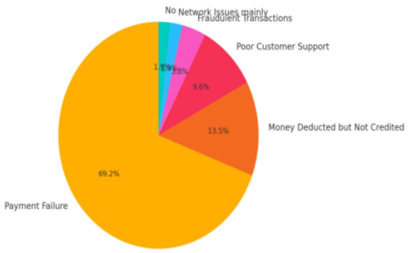
Have you ever faced transaction failures or security issues while using Google Pay?

Yes: 39 responses (75.00%)
No: 13 responses (25.00%)



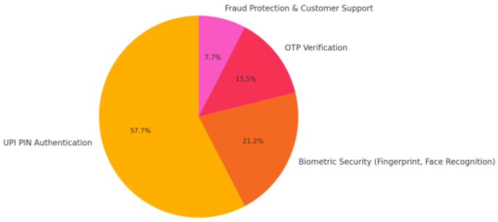
If yes, what type of issues have you faced? (Select all that apply)

Payment Failure: 36 responses (69.23%)
Money Deducted but Not Credited: 7 responses (13.46%)
Poor Customer Support: 5 responses (9.62%)
Fraudulent Transactions: 2 responses (3.85%)
Network Issues mainly : 1 responses (1.92%)
No : 1 responses (1.92%)



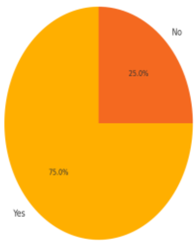
What security features of Google Pay make you feel safe? (Select all that apply)

UPI PIN Authentication: 30 responses (57.69%)
Biometric Security (Fingerprint, Face Recognition): 11 responses (21.15%)
OTP Verification: 7 responses (13.46%)
Fraud Protection & Customer Support:4 responses (7.69%)



Would security concerns make you stop using Google Pay?

Yes: 39 responses (75.00%)
No: 13 responses (25.00%)



Hypothesis Testing Result:

- **Chi-Square Value (χ^2)** = 11.08
- **p-value** = 0.00087
- **Significance Level (α)** = 0.05

Interpretation:
Since **p-value (0.00087) < 0.05**, we **reject the Null Hypothesis (H_0)**.

- **Rejected**:
  H_0: *"The use of Google Pay has no significant impact on consumer behavior and e-commerce transactions in India."*
- **Accepted**:
  H_1: *"The use of Google Pay has a significant positive impact on consumer behavior and e-commerce transactions in India."*

Hypothesis Testing – Analysis and Findings:

- To assess whether Google Pay has a significant impact on consumer behavior and e-commerce transactions in India, a hypothesis test was conducted. The test focused on the responses to the question: *"Has Google Pay influenced your spending habits (e.g., spending more due to ease of transactions)?"* Using the Chi-Square Goodness-of-Fit test, the observed data was compared with expected values assuming equal likelihood of 'Yes' and 'No' responses.
- The results yielded a **Chi-Square value of 11.08** with a **p-value of 0.00087**, which is significantly lower than the standard significance level of **0.05**. Based on this, the **null hypothesis (H_0)**—which states that Google Pay has no discernible effect on Indian consumers' e-commerce transaction behaviour. —was **rejected**. Consequently, the

alternative hypothesis (H_1) was **accepted**, affirming that the use of Google Pay has a **statistically significant and positive impact** on consumer behavior in the Indian e-commerce space.

- This finding highlights that ease of transactions, enhanced convenience, and the digital-first experience offered by platforms like Google Pay have notably influenced consumers' purchasing patterns, promoting increased spending and digital adoption.

Recommendation

1. **Enhance Digital Literacy and Awareness Campaigns**
   The government and digital payment platforms should collaborate to increase awareness and digital literacy among consumers and small merchants, particularly in semi-urban and rural regions. Awareness campaigns and training initiatives can boost self-esteem and increase the user base.
2. **Strengthen Security Features and Fraud Detection Mechanisms**
   Despite high adoption, concerns about security and fraud remain. Google Pay and similar platforms should continue investing in AI-based fraud detection, biometric authentication, and user education on safe digital practices to improve trust.
3. **Promote Small Business Onboarding**
   Google Pay should create more tailored offerings and incentives for small and medium-sized enterprises (SMEs) to join the digital payment ecosystem. Offering free onboarding, low transaction fees, and business insights could boost merchant participation.
4. **Integrate More Value-Added Services**
   To increase engagement, platforms can integrate loyalty programs, cashbacks, budgeting tools, or personalized financial recommendations. This adds more value to users and encourages continued usage.
5. **Improve Offline Transaction Experience**
   While online payments are seamless, offline QR-based transactions can still be slow or fail due to network issues. Enhancing offline functionality (like UPI Lite or NFC support) can bridge this gap and improve reliability.
6. **Support Multi-Language Accessibility**
   Enabling regional language support within apps can drive adoption among non-English speaking users. This promotes inclusivity and accessibility across India's diverse population.
7. **Leverage Data Analytics for User Experience Optimization**
   Google Pay can utilize transaction patterns and user behavior data to personalize the user experience, predict needs, and offer tailored offers, thus deepening user engagement.
8. **Work with E-Commerce Platforms for Seamless Checkout Integration**
   Collaborating with major e-commerce websites and apps to offer faster, one-tap payments can enhance the overall online shopping experience and further boost digital adoption.

Conclusion

Using Google Pay as a case study, the paper examines the crucial role that digital payment have played in the expansion of e-commerce in India. The analysis reveals that the convenience, speed, and security offered by Google Pay have significantly influenced consumer behaviour, encouraging more frequent and higher-value transactions in the digital space. With initiatives like UPI and Digital India promoting a cashless economy, platforms such as Google Pay have become central to India's evolving payment landscape.

The hypothesis testing strongly supports the alternative hypothesis, indicating that Google Pay has a statistically significant positive impact on both consumer behavior and e-commerce transactions. Consumers increasingly rely on digital payment methods for their shopping needs, and businesses—especially small and medium enterprises—are adapting quickly to accommodate this shift.

However, challenges such as cyber security concerns, lack of awareness in rural areas, and occasional technical disruptions persist. Therefore, continued efforts toward digital literacy, infrastructure enhancement, and user trust-building are essential for sustaining the momentum of digital payments in India's commerce sector.

This research provides meaningful perspective for policymakers, financial institutions, and digital payment providers to design more inclusive, secure, and user-centric payment ecosystems that support India's broader economic digitalization goals.

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Opportunities And Challenges Faced By Women Entrepreneurs

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Abstract
Women entrepreneurs play a important role in economic growth and innovation, but they face a Distinct blend of prospects and obstacles. In this paper researcher give importance to find out various opportunities and challenges faced by "women as an entrepreneur". In this study researcher took sample of individual and use Observational study.

Keywords: Challenges, opportunities, women entrepreneur, skill-based education

Introduction
Female entrepreneurs play a Pivotal role in the economic development of a nation by creating employment, promoting creativity and new ideas, and contributing to overall growth. Encouraging inventive and forward-thinking approaches, there has been a significant increase in the number of women starting and managing businesses across various sectors. Despite challenges such as limited access to capital, societal norms, and gender biases, many women have demonstrated resilience and leadership in the Business landscape. This paper explores the factors contributing to the rise of women entrepreneurs, The challenges they encounter, and the support systems essential for their success. Empowering women through entrepreneurship not only enhances their socio-economic status but also drives Equitable and Enduring worldwide progress.

Objectives:
1) To explore how women as an entrepreneur became economically independent.
2) To study challenges and difficulties faced by women entrepreneur.
3) To examine how women entrepreneur maintain balance between family life and work life.

Literature review:
1) **Challenges faced by women entrepreneurs, Ms. P. Jeevitha, Mrs. R. Kenya Priya, Dr. G. Anitha Rathna, Dr. R. Tamilselvi, Jan 2023.** The principal aim of the study is to identify major problems faced by women entrepreneurs. For women entrepreneurs, major problems are shortage of raw materials, legal formalities, financial problems, and balance between family life and work.

2) **Challenges and opportunities of women entrepreneurs in the e-commerce sector, M. Suganya, Thenmozhi Purakala, UGC Care Journal,** 2020. With the help of e-commerce, women entrepreneurs work; however, the business skills of women entrepreneurs have not been encouraged due to the lower status of women in society. Major challenges women entrepreneurs may face include lack of technology skills, financial assistance, and privacy/security. This research paper is conceptual and discusses various challenges and opportunities for women entrepreneurs in e-commerce and solutions to overcome these challenges.

3) **Female Entrepreneurship and Employability in the Digital Era**, A.S. Drigas, *Journal of Open Source*, 2018.The purpose of the study is to investigate the impact of ICT on women's employability and entrepreneurship, as well as on current managerial positions in Greece, in order to map the existing situation, identify needs, and suggest training routes as revealed by the findings. Although women believe that ICT skills are among the most crucial factors for success in the 21st century.

4) **Analysis of Barriers to Women Entrepreneurship**, J. Raghuvanshi, R. Agarwal, 2017. In this study, the cause-and-effect relationships among barriers are examined, and the Decision-Making Trial and Evaluation Laboratory technique was applied. The identified barriers include lack of education, experience, training opportunities, institutional support, adequate financial support, and family support.

5) **Study of Work-Life Balance of Women Entrepreneurs**, Sucheta Agarwal, Usha Lenka, 2015. The purpose of this paper is to review and conceptually explain the work-life balance of women entrepreneurs. By using secondary data, the researchers observe that women entrepreneurs experience significant pressure to balance between family responsibilities and office life.

Research Gap
While existing literature provides valuable insights into the various challenges faced by women entrepreneurs—such as Limited funding and inadequate organizational backing, limited ICT skills, work-life balance issues, and societal

biases—mThe majority of research emphasizes isolated or industry-specific issues. and often rely on conceptual or secondary data. However, Empirical evidence is limited, survey-based research that offers a holistic understanding of these challenges across multiple dimensions (social, technological, financial, and psychological), particularly among young women entrepreneurs in the early stages of their careers. Additionally, although digital transformation is Recognized as a potential advantage, few studies explore how women actually perceive and utilize digital tools in their entrepreneurial journeys. Therefore, this study fills an important gap by combining first-hand perspectives from young respondents with analysis of both barriers and emerging enablers such as Local encouragement, government initiatives, and digital platforms.

Research Methodology

To study this data researcher took demographic variables and took a sample of 70 individual, this data has collected from major women from different age groups like 18-25, 26-35, 35-45,46-60 & 60 above. In this paper researcher use questionnaire method of primary and secondary data collection by using 5 grade Likert scale which results in strongly disagree, disagree, neutral, agree, strongly agree. Following questions includes in questionnaire.

1) Women entrepreneurs face more societal pressure compared to their male counterparts.
2) Lack of access to funding is a major barrier for women entrepreneurs.
3) Women have equal access to business mentorship and training opportunities.
4) Family responsibilities are a significant challenge for women trying to start a business.
5) Government policies and schemes adequately support women entrepreneurship.
6) Social attitudes in my community encourage women to become entrepreneurs.
7) Technology and digital platforms have created more opportunities for women entrepreneurs.
8) Women entrepreneurs are often not taken as seriously as men in the business world.
9) More awareness programs are needed to promote women entrepreneurship.
10) In the future, women will play an equal role as men in business leadership.
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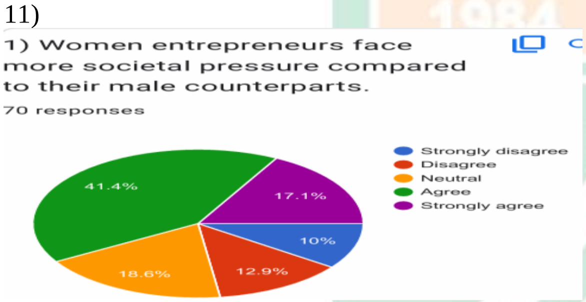

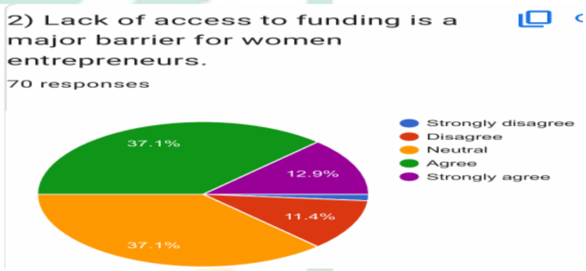

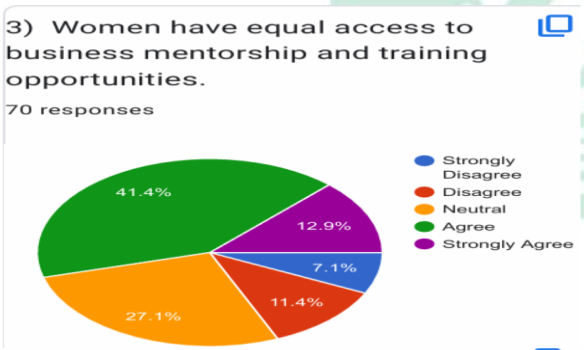

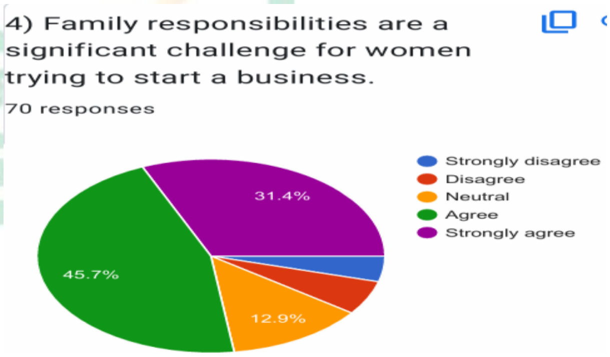

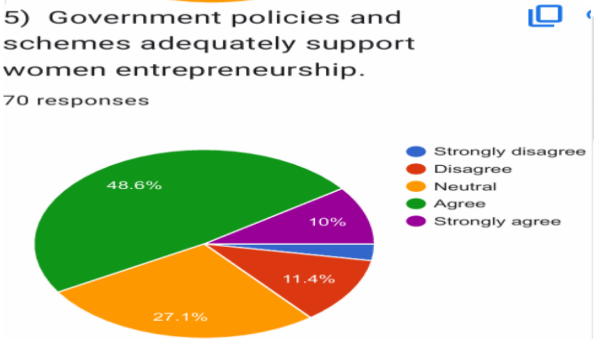

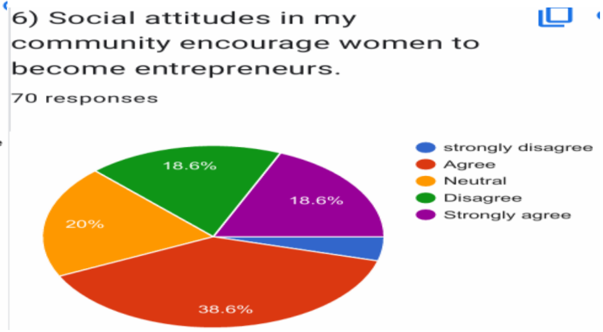

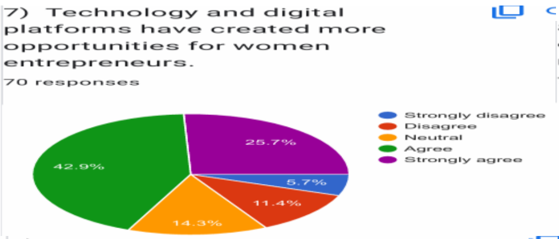

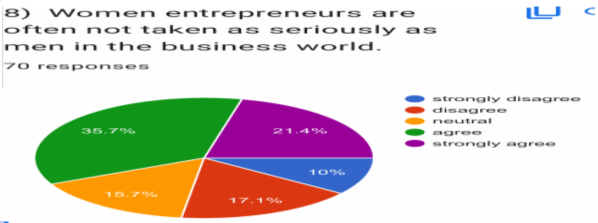

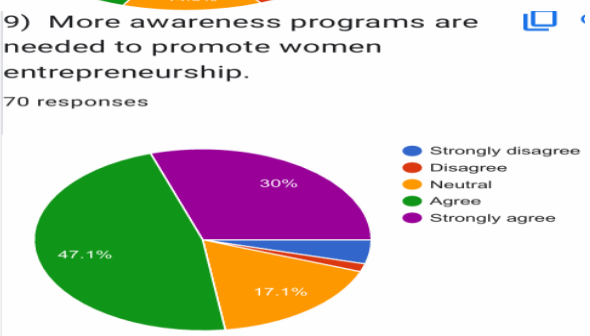

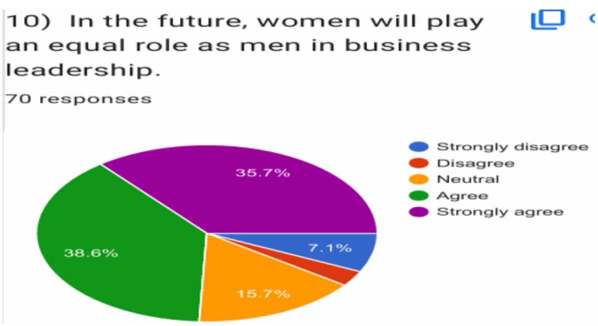

Research findings-

Women entrepreneurs significantly contribute to Economic advancement and technological progress. However, they face distinct challenges, such as societal expectations, lack of support, and funding barriers. This research explores these challenges and also highlights emerging opportunities. A descriptive study was conducted based on responses from **70 individuals**. The majority of respondents (71.4%) were aged 26–35, followed by 24.3% in the 18–25 age group, with minimal representation from those aged 36 and above. This indicates the majority of insights come from younger demographic, especially those likely at the early or mid-stages of their careers or entrepreneurial journeys.

1. Interest in Entrepreneurship:

A recent survey reveals a significant inclination toward entrepreneurship among women. Approximately **38.6%** of respondents have either already started a business or are seriously considering doing so. Additionally, **35.7%** expressed plans to start a business in the future, indicating a strong pipeline of aspiring female entrepreneurs. However, **25.7%** of the women surveyed responded with a definitive "No," showing no current interest in entrepreneurship. These figures highlight a growing enthusiasm and ambition among women to engage in entrepreneurial ventures. The combined 74.3% who have either started, are considering, or are planning to start a business point to a promising trend of female-led innovation and enterprise. Nonetheless, the 25.7% who are not interested suggest that there are still barriers—such as lack of access to capital, mentorship, confidence, or societal expectations—that may be discouraging some women from pursuing entrepreneurial paths. Responding tothese challenges could help unlock even more Capabilitywithin this demographic.

2. Societal Pressure:

The findings indicate that a substantial proportion of respondents believe women entrepreneurs experience greater societal pressure compared to their male equivalents. Specifically, **41.4%** of participants agreed, and an additional **18.6%** strongly agreed with this sentiment. In contrast, only **10%** strongly disagreed, suggesting that Disbeliefabout this issue is relatively low. This data underscores the persistent impact of gender-based societal pressure on women in entrepreneurship. The perception of heightened scrutiny and expectations for women may be rooted in cultural norms and traditional gender roles, which can hinder their confidence, visibility, and decision-making freedom in business. These insights point to the need for targeted support systems and Transformations in social normsto create a more equitable entrepreneurial environment.

3. Funding Barriers:

A combined **74.2%** of respondents agree that access to funding is a major challenge for women entrepreneurs, while only **11.4%** strongly disagreed. This highlights the critical financial barriers women face, emphasizing the urgent need for more inclusive funding opportunities and increased investor support tailored to women-led ventures.

4. Mentorship & Training Access:

Only **27.1%** of respondents strongly agree that women have equal access to mentorship and skill development opportunities, while a combined **18.5%** disagree or strongly disagree. This suggests a noticeable disparity in the availability of such resources for women. Limited access to mentorship and training can significantly impact the growth, confidence, and long-term success of female entrepreneurs. Addressing this gap is essential for fostering an inclusive entrepreneurial ecosystem that empowers women to thrive in their ventures.

5. Family Responsibilities:

A significant **77.1%** of respondents (45.7% agree and 31.4% strongly agree) acknowledge that family responsibilities create challenges for women entrepreneurs, while only **12.9%** disagreed. This indicates that balancing professional ambitions with domestic duties remains a substantial barrier for many women. The pressure to manage both spheres can limit time, energy, and resources for business pursuits, highlighting the ongoing need for supportive policies, flexible structures, and cultural shifts to help women achieve better work-life balance in entrepreneurship.

6. Government Support:

Responses regarding government support for women entrepreneurs were mixed. Only **27.1%** agreed that government schemes are supportive, while a majority of **48.6%** remained neutral. Additionally, **21.4%** either disagreed or strongly disagreed. This suggests a level of uncertainty or limited awareness about the effectiveness and accessibility of government initiatives for women entrepreneurship. It may reflect a gap in outreach, communication, or the practical impact of these schemes, indicating the need for better visibility and implementation.

7. Community Support:

About **38.6%** of respondents agree that social attitudes are becoming more supportive of women entrepreneurs, indicating a positive shift in community perspectives. However, **18.6%** still disagree or strongly disagree, suggesting that traditional biases and gender norms continue to pose challenges in certain areas. While progress is evident, these mixed responses highlight the uneven nature of societal acceptance. Continued efforts are needed to foster inclusive mindsets and create a more consistently encouraging environment for women in entrepreneurship.

8. Technology as an Opportunity:

A combined **57.2%** of respondents (42.9% agree and 14.3% strongly agree) believe that digital platforms have positively impacted women entrepreneurs, while only **5.7%** strongly disagreed. This indicates a strong perception that digital tools and online platforms have played a key role in empowering women by lowering entry barriers, expanding market access, and enabling business scalability. The digital shift is widely seen as a valuable enabler for women looking to establish and grow their entrepreneurial ventures.

9. Perceptions in Business:

While **31.4%** agreed or strongly agreed that women are taken less seriously as entrepreneurs, **35.7%** remained neutral, and only **10%** strongly disagreed. This suggests that gender bias continues to affect women's credibility and recognition in business, though perceptions on the issue vary, reflecting differing experiences and awareness.

10. Need for Awareness Programs:

A strong **77.1%** of respondents agreed or strongly agreed on the need for more awareness programs to promote women’s entrepreneurship. This overwhelming support highlights a widespread recognition of the importance of education, outreach, and visibility to encourage more women to pursue entrepreneurial ventures. Awareness initiatives can help break down stereotypes, inform women about available resources, and inspire confidence by showcasing successful role models. These programs also play a critical role in building supportive ecosystems, enhancing access to opportunities, and addressing socio-cultural barriers. The data suggests a clear demand for sustained efforts in promoting entrepreneurial knowledge and empowerment for women.

11. Future Outlook:

While **15.7%** of respondents strongly agreed that women will play equal roles in business leadership, a significant **35.7%** disagreed, and **38.6%** remained neutral. This reflects considerable skepticism about achieving full gender parity in leadership positions. The data suggests that despite ongoing progress, many believe true equality remains distant without substantial structural reforms and shifts in societal attitudes. The mixed outlook highlights the need for targeted efforts to break leadership barriers and promote inclusive business environments.

Conclusion

This research highlights the growing entrepreneurial interest among women, especially young adults, while also revealing the persistent barriers they face. Societal expectations, limited access to funding, mentorship, and the burden of family responsibilities are significant challenges. Though digital platforms and community attitudes are improving, gender biases still impact recognition and leadership opportunities. The study underscores the importance of targeted support systems to empower women entrepreneurs and create a more equitable and inclusive business environment.

Implication

The findings imply an urgent need for structural and cultural reforms to support women entrepreneurs effectively. Policymakers, investors, and support organizations must recognize the barriers women face and tailor initiatives accordingly—especially in funding, training, and work-life balance. Additionally, better communication and implementation of government schemes are crucial. Building awareness and inclusive ecosystems can help women transition from entrepreneurial interest to sustained success, ultimately contributing to national economic development and gender equity in business leadership.

Future Directions & Final Thoughts

Future efforts should focus on expanding mentorship networks, increasing the visibility of successful women entrepreneurs, and designing inclusive funding opportunities. Programs promoting entrepreneurship must address gender biases and encourage broader societal support. Leveraging digital platforms can further empower women to innovate and grow. Finally, for true gender parity in business leadership, continuous advocacy, education, and systemic reforms are necessary. A supportive environment—backed by policy and culture—is key to realizing the full potential of women entrepreneurs.

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Navigating the Challenges of Implementing Information and Communication Technologies in Academic Libraries

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Abstract:
Modern technology has altered academic libraries' conventional character while improving their capacity to support research, teaching, and learning. These technologies have profoundlychanged the way academic institutions handle, distribute, and access information. This encompasses everything from digital resources to the newest technologies. This article analyzes several applications of modern technologies in academic libraries. The transformation of academic libraries reflects broader changes in the educational landscape. By embracing new technologies, promoting collaborative and open learning, and supporting research and data management, libraries are redefining their roles and enhancing their contribution to modern education. This evolution ensures that academic libraries remain vital, relevant, andindispensable to the learning and research needs of the 21st century.

Keywords: Academic Libraries, Information and Communication Technology, Library Services, Challenges

Introduction

Academic libraries have been compelled to adapt their traditional services by integrating emerging technologies since users are growing more tech-savvy and demanding remote, quick access to scholarly knowledge. Innovative technology adoption is a current trend in academic libraries. Particularlyashigher educationrapidlyembracesonline and remotelearning, advanced technologies offer the potential to improve the provision ofservices by academic libraries and to support the environment of distance learning. Hence, it is essential to look into how effectively academic libraries are implementing innovative services and what challenges they are facing while providing smart services.

Transforming Academic Libraries: New Roles in Modern Education

Academic libraries are undergoing a significant transformation as a result of their adoption of technological advances in all print-to-digital environment activities. For example, computerized OPACsystemswitharangeofweb-basedgraphicaluser interface(GUI) functions havereplaced printed library card catalogues, and additionally there are now many electronic databases, journals, information resources, and client services available. Academic libraries will face even more opportunities and challenges to serve students, faculty, researchscholars and other users in the face of the new information explosion. These users will have high expectations, which willbe increased by the increasing adoption of cutting-edge and emerging technologies in academic learning environments. Because of the ever-changing nature of information due to information and communication technology, libraries are likewise undergoing changes to their collection, facilities, and services.

The role of academic libraries in promoting open education resources (OER) is becoming increasingly active. The cost of textbooks and other course materials is being lowered bylibraries through the collection and promotion of freely available educational resources, which makes education more accessible and identical. Ensuring that scholarly research is accessible to everyone, irrespective of institutional affiliation or geographic location, is part of a larger commitment to promoting open access to information.

Areas of ICT Application in Academic Library Operation

With the support of ICT, operations that were previously carried out manually in libraries with great challengesand suffering are now completed more successfully and smoothly. Organization, management, and other technological tasks in libraries are getting easier, allowing for better efficiency in a more relaxed setting.

Digital Resources: Academic libraries are able to provide digital resources such as e-books, e- journals, online databases, and digital archives with the help of ICT.This has significantly
broadened the scope of library holdings and facilitated users' access to information at any time and from any location.

Online Catalogues: ICT has enabled libraries to offer online catalogs, allowing patrons to search and locate books, journals, and other resources in the library's collection. This has greatly improved the efficiency of library operations and made it easier for patrons to find the resources they need.

Automation: ICT has made it possible for libraries to automate a variety of administrative duties, including inventory management, circulation, and cataloguing. This has freed up librarians' time to focus more on serving patrons and providing assistance infinding information.

Information literacy: ICT has played a crucialrole in promoting information literacy. Libraries can provide access to online tutorials, webinars, and other resources that teach patrons how to find, evaluate, and use information effectively.
Virtual reference service: ICT has made it achievable for libraries to deliver virtual reference services like chat, email, and video conferencing, enabling their patrons remote access to library staff for support and assistance.

Advantages of Information and Communication Technology in Academic Libraries Time Saver - With the use of information technology, locating information in libraries is quite simple. In addition to saving the user time, it is also highly beneficial for users who are located far away. There are no time restrictions, and you can obtain information fromremote areas.
Quick Access - When compared to human labor, the use of technology in libraries speeds up work drastically. Users may quicklyaccess all the information they need on their ownIT device, such as a computer, laptop, smartphone, tablet, etc.
Multiple Accesses - Technology allows multiple users to have access to the same information simultaneously.
Attract the Users - Information can be made visually appealing with the aid of various presentationtechniques, whichwill assist indrawing inusers. Allofthis is made possible byIT.
Remote Access - In the present world, time is much more important for everyone. The users, though they have not much time in today's environment, time is crucial for everyone. Users can access information outside of libraries at any time by using network technology, even though theydon't have much time to visit the library. For this kind ofuser, IT makes things verysimple and helps them save time. Through information and technology, patrons can access library resources outside of the library's campus around the clock, every day of the year.
Preservation and Conservation - Without sacrificing quality, an exact replica of the original can be produced as many times as needed.
Up-to-date Information - A library will be updated by IT. Sometimes, the library may acquire information from other websites or other paid sources and then deliver it to users via email or instant messaging at the user's request. This process is carried out electronically, and no human resourcesareneededto manage it regularly. WiththeuseofIT, a librarycouldgeneratethe most recent data that every user demands.
Efficiency - Everyone is aware that using technologyminimizes the chances of making anerror. Everyone is aware that technology is far more efficient than humans. Therefore, optimizing the efficiency of library workers is quite beneficial.

Challenges of Academic Libraries in Implementing ICT
Academic libraries are places where a limitless amount of information is produced and accessibleto everyone, wherever, atanytime. The wayusersreadand learninacademic libraries has altered as a result of the rapid advancement of information technology. However, there are still several kinds of issues and challenges in effectively integrating new technologies. The following are some challenges to implementing new technologies:
Financial Constraints: Getting the required funding is the biggest obstacle to introducing new technologies in the library. Most institutions and organizations are unable to afford the cost of implementing new technologies. Sound financial assistance is necessary for the purchase of hardware, software, and other essential ICT devices in order to incorporate cutting-edge technology in the library.
Technical and Infrastructure Issues: The main obstacle to implementing modern technologyin libraries is a lack of knowledge about hardware and software problems. The breadth and capacity of the application software that will be chosen must be evaluated in order to decide whether it will be appropriate for achieving the academic library's objective.
Human Resource Challenges: Libraries need competent staff with an array of technological skillsto implement new and advanced technologies. The staff's levelofproficiencywithICTisa key element in achieving effective implementation of ICT. This skill enables library professionals to make optimal use of their expertise in managing a variety of library operations. It is crucial to have enough experts with in-depth ICT knowledge in order to fully utilize this potential in library administration.
Inadequate Digital Infrastructure: The integration of information and communication technologies (ICTs) in academic libraries is hampered by inadequate digital infrastructure. Lack of internet connectivity is a major problem since it makes it difficult to collaborate online and access digital information. Lack ofa national ICT policy causes libraries to use technology in an irregular and disorganized manner. The lack of personal computers (PCs) restricts the use of digital content by researchers and students. Furthermore, the operation of electronic devices can frequently be interrupted by inconsistent electrical power supplies.
Digital Safeguarding: In order to protect sensitive data and system integrity, digital safeguarding is a prerequisite for ICT implementation in academic libraries. It is imperative to have strong cyber security measures, such as firewalls, encryption, and frequent software updates. Secure access procedures and appropriate data management guidelines improvesecurity significantly. A secure online environment is ensured by educating employees and users on best practices, suchas identifying phishing and creating strong passwords. Making digitalsafetyatop priority ensures that ICT systems perform smoothly, promoting scholarly research and education.

Conclusion:
Information and communication technologies are essential for enhancing the development of academic library operations' efficiency. The work that libraries and information centers perform is being altered by ICT. To satisfy the evolving needs of users, librarians, library users,
supporters, and developers of ICT-based libraries have to collaborate together. Changes in the format, contents, and methods of creating and transmitting information products; the internet's emergence as the global repository of knowledge and information; the change in the role of LIS professionals from intermediaries to facilitators. The emergence of new tools for information dissemination, the transition from a physical to a virtual service environment, the decline ofsome traditional information services, and the emergence of new and innovative web-based library and information services are some of the ways that ICT has impacted information services.

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A Study on The Impact of Hyper-Personalization in Digital Marketing and Data Privacy Concerns on Consumer Buying Behaviour

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Abstract:
The evolution of digital marketing has brought hyper-personalization to the forefront, enabling companies to offer tailored experiences to consumers using advanced data analytics and AI. However, this personalization often comes at the cost of consumer data privacy, leading to growing concerns and scepticism. This research paper explores the dual impact of hyper-personalization and data privacy concerns on consumer buying behaviour. Using a descriptive research methodology, the study analyses how consumers respond to highly personalized marketing strategies, and how privacy anxieties influence their trust, loyalty, and purchasing decisions. The findings indicate a complex interplay between the of personalized services and the discomfort of data concerns, suggesting the need for a balanced approach by marketers.

Keywords: Personalization, targeting, Digital marketing, data privacy, consent, security, Consumer decision.

1. Introduction

The 21st Century has seen the verge on technological shift and advancement. All sectors of the economy have adopted this shift to ease the work and to enhance the customer satisfaction level. Sectors like banking, healthcare, education etc have been revolutionized like never before. Customer experiences have been better. The effect of this revolution has not left in the marketing industry any less. Digital marketing refers to the use of digital channels, platforms, and technologies to promote products, services, or brands to consumers. Unlike traditional marketing, which relies on mediums such as print, radio, and television, digital marketing leverages the internet, mobile devices, social media, search engines, email, and other online tools to connect with target audiences.

With the rapid growth of internet users worldwide and the widespread adoption of smartphones and social media, digital marketing has become an essential strategy for businesses of all sizes. It allows for precise targeting, real-time engagement, measurable outcomes, and cost-effective campaigns. Key components of digital marketing include search engine optimization (SEO), content marketing, social media marketing, email marketing, pay-per-click (PPC) advertising, and influencer marketing.

Digital marketing not only enhances brand visibility but also offers valuable insights into consumer behaviour, enabling marketers to make data-driven decisions. As technology continues to evolve, digital marketing is becoming more personalized, interactive, and integrated—reshaping the way brands communicate and engage with their customers. It has increased the efficiency, precision and targeting and in this digital ecosystem hyper-personalization has become a key strategy for businesses aiming to enhance customer experiences and drive sales. This technique leverages big data, machine learning, and predictive analytics to deliver customized product recommendations, content, and services in real time. While personalization can significantly improve customer satisfaction and conversion rates, it also raises critical questions about data security and privacy. Consumers are increasingly aware of how their personal information is being collected, stored, and utilized, often without explicit consent. This study aims to understand how these opposing forces—hyper-personalization and data privacy concerns—affect consumer buying behaviour.

2. Objectives of the Study

- To examine the influence of hyper-personalized marketing on consumer purchase decisions.
- To assess the extent of consumer concern regarding data privacy.
- To explore the relationship between data privacy concerns and consumer trust.
- To analyse consumer preferences regarding the trade-off between personalization and privacy.

3. Hypothesis

H1: Hyper-personalization in digital marketing has a positive impact on consumer buying behaviour.
H2: Data privacy concerns negatively influence consumer buying behaviour.
H3: The positive effect of hyper-personalization on consumer buying behaviour is moderated by consumers' data privacy concerns.

4. Research Methodology:

This study adopts a mixed approach of data collection which focuses on:

- **Primary data:** it will be collected through a descriptive research design to gather quantitative data about consumer perceptions
- **Secondary data**: it will be collected from review of literature, articles etc.

Population: Online shoppers and social media users.
Sample Size: 51 respondents across different age groups, geographies, and demographics.
Sampling Technique: Stratified random sampling.
Data Collection Tools: Structured questionnaires.

5. Review of Literature

Several studies have highlighted the effectiveness of personalization in boosting customer engagement. However, as noted Hyper-personalization, driven by AI and big data, has become a key trend in digital marketing. According to Kumar et al. (2022), it significantly influences customer buying behaviour by delivering highly tailored experiences through real-time data and predictive analytics. Their study highlights the use of advanced algorithms like Hierarchical Recurrent Neural Networks (HRNNs) to enhance customer engagement and drive purchase decisions.

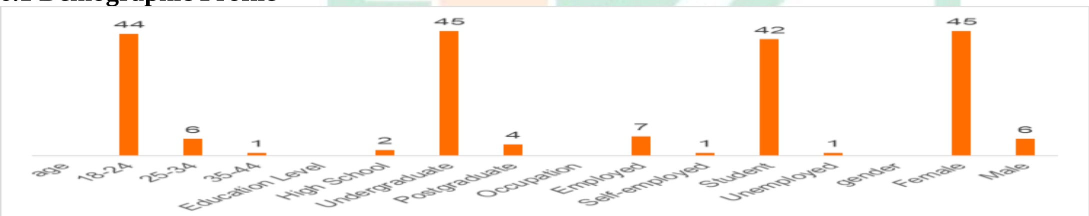
Other researchers (Smith & Kumar, 2021; Gupta & Sharma, 2021) note that while hyper-personalization boosts satisfaction and loyalty, it also raises concerns around data privacy. Consumer trust plays a critical role—personalized marketing is more effective when users believe their data is handled responsibly. Thus, the literature suggests a balance between personalization and ethical data use is essential for sustainable marketing impact.

Mehta, B., & Shah, N. (2021). Hyper-Personalization in Indian Digital Marketing: A Study on Consumer Perceptions. International Journal of Marketing and Technology, 11(3), 25–35.

Mehta and Shah (2021) explore the growing role of **hyper-personalization** in Indian digital marketing, emphasizing how businesses leverage consumer data and AI-driven tools to tailor content and recommendations. The study defines hyper-personalization as a **step beyond traditional personalization**, incorporating real-time behavioural data, browsing history, and predictive analytics to create individual-level targeting.

6. Data Analysis and Interpretation

6.1 Demographic Profile



The demographic analysis of the respondents presents a concentrated and relatively homogenous sample:

- **Age Group:**

A significant majority of respondents (44 out of 51) fall within the **18–24** age bracket, with a small number in the **25–34** group (6), and only **1** respondent in the **35–44** range. This suggests that the data primarily reflects the perspectives of younger individuals, particularly those in their early adulthood. The age group which highly uses the online mode of shopping.

- **Education Level:**

The educational background of participants shows that most respondents (45) are **postgraduate students**, while **2** are **undergraduates** and **1** has completed **high school**. This indicates a highly educated sample, likely with greater exposure to digital technologies and an understanding of personalisation mechanisms.

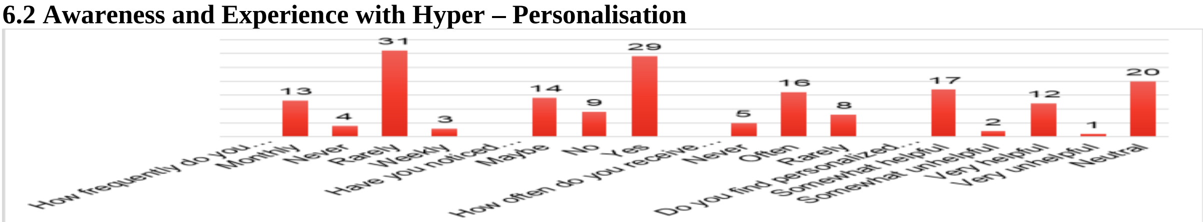
- **Occupation:**

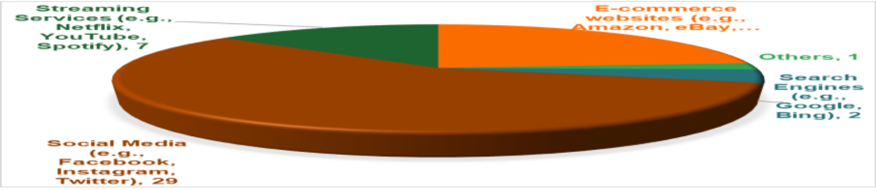
The majority of participants (42) identified as **students**, followed by **7** who are **employed**, **1self-employed**, and **1unemployed**. This aligns with the age and education data, confirming that the sample is largely composed of full-time students.

- **Gender:**

There is a strong gender imbalance in the sample, with **45** respondents identifying as **female**and only **6** as **male**. This skew may influence the overall results and should be considered when generalising findings.

6.2 Awareness and Experience with Hyper – Personalisation

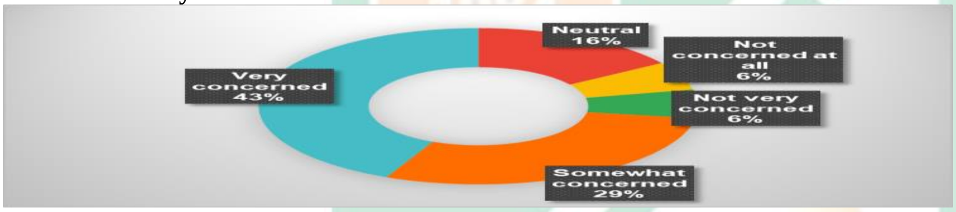




The bar chart reveals insightful patterns regarding users' awareness and interaction with hyper-personalisation technologies:

- **Frequency of Use:** A significant number of respondents (31) interact with personalised content only rarely, while only a few (3) experience it weekly. This suggests that although hyper-personalisation is prevalent in the digital space, its penetration into users' daily online activities remains limited for many.
- **User Awareness:** 14 participants responded “maybe” when asked if they’ve noticed hyper-personalised content, and 9 responded with “no”. This indicates a considerable portion of users either do not recognise or are unsure about such content, reflecting potential gaps in awareness or subtlety in delivery.
- **Reception Frequency:** 29 respondents confirmed they do receive personalised recommendations, affirming the existence of hyper-personalised systems in platforms they engage with.
- **Perceived Helpfulness:** Opinions on usefulness are split — 17 found content somewhat unhelpful, while 16 found it somewhat helpful. Very few (2) found it very helpful, and 12 found it very unhelpful. This signals that current hyper-personalisation may not be finely tuned to users' true preferences.
- **Platform-wise Breakdown:** According to the pie chart, **social media platforms** are the leading sources of hyper-personalised content (29 responses), followed by **e-commerce websites** (approx. 10–11), and **streaming services** (7). This confirms that personalisation is more aggressively employed in social environments than in other sectors

6.3 Data Privacy concerns:

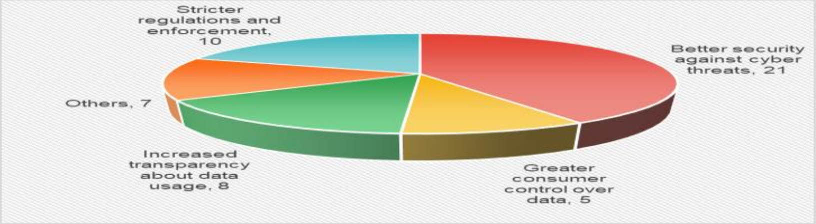


The donut chart provides a clear overview of user sentiment regarding data privacy:

- **High Concern:** A large portion — **43%** — of participants are very concerned about their data privacy, while another **29%** are somewhat concerned. This means **over 70%** of users express varying degrees of worry.
- **Lower Concern:** Only **6%** are not concerned at all, and another **6%** are not very concerned, indicating a minority that feels relatively secure.
- **Neutral:** 16% hold a neutral stance, which may imply confusion or lack of understanding about how their data is handled.

This reflects an underlying tension: while users enjoy personalised content, they are simultaneously uneasy about how their data is collected and used.

6.4 **Balancing Personalization and Privacy:**



The final pie chart captures respondents’ preferences for managing the trade-off between personalisation and privacy:

- **Top Priority – Security:** The highest number of respondents (21) emphasized the need for **better security against cyber threats**, highlighting a demand for robust digital protection measures.
- **Regulatory Support:** 10 respondents called for **stricter regulations**, while 8 supported **increased transparency** in data usage — pointing to a desire for both legal safeguards and clarity.
- **User Empowerment:** A smaller group (5) wanted **greater consumer control** over their data, suggesting some users prefer taking direct charge of privacy.
- **Others:** 7 respondents provided other ideas, which, if specified, could add further dimensions to policy and platform improvements.

Overall, the data suggests a strong preference for responsible, transparent, and secure handling of personal information while delivering personalised digital experiences.

7. Discussion:

The analysis reveals a complex dynamic between user awareness, engagement with hyper-personalisation, and concerns over data privacy. While a majority of users are exposed to personalised content—particularly through social media platforms—many interact with it only occasionally, and perceptions of its usefulness remain mixed. This suggests that current hyper-personalisation strategies may not be fully aligned with individual preferences or needs.

Notably, although users benefit from these tailored experiences, there is a clear and significant apprehension regarding the security and use of their personal data. With over 70% of respondents expressing concern, it is evident that privacy remains a major issue in the digital environment. Users are calling for more robust cybersecurity, stricter regulatory frameworks, and increased transparency to strike a balance between personalisation and protection.

In essence, while hyper-personalisation has the potential to enhance user engagement, its success hinges on building trust through ethical data practices, user empowerment, and secure digital infrastructures. Future implementations should prioritise both user relevance and privacy to ensure a sustainable and user-centric digital ecosystem.

8. Implications for Marketers and Businesses:

Adopt a transparent data usage policy and communicate it clearly to consumers

Offer opt-in mechanisms for data collection and personalized content.

Educate users about how their data enhances their shopping experience.

Regularly update privacy protocols in compliance with data protection laws like GDPR and India's Digital Personal Data Protection Act, 2023.

9. Limitations of the Study:

1. The sample size, while diverse, is limited to online users.
2. Self-reported data may be subject to bias.
3. Regional and cultural differences in privacy expectations were not deeply explored.

10. Conclusion:

Hyper-personalization significantly influences consumer buying behaviour, offering convenience and enhanced user experience. However, the accompanying data privacy concerns cannot be overlooked. As digital consumers become more aware and cautious, businesses must evolve to create personalization strategies that are ethical, transparent, and privacy-conscious. A consumer-centric approach that prioritizes both personalization and privacy is key to long-term success.

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Role of Government Initiatives like Make in India on Mumbai-Based Enterprises

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1. Abstract

Government initiatives play a crucial role in shaping the business landscape of a country. One such initiative, "**Make in India**," was launched in 2014 to boost domestic manufacturing, attract foreign investments, and position India as a global manufacturing hub. This research paper explores the impact of the Make in India initiative on **Mumbai-based enterprises**, analysing its contributions to various sectors, employment generation, infrastructural development, and challenges faced by businesses. Additionally, this study provides a deeper examination of specific industry case studies, policy implications, and future growth prospects.

2. Introduction

Mumbai, the financial capital of India, is home to a diverse range of industries, including manufacturing, pharmaceuticals, IT, textiles, financial services, and logistics. The Make in India initiative aimed to stimulate industrial growth, encourage ease of doing business, and enhance the global competitiveness of Indian enterprises. This paper evaluates how Mumbai-based businesses have responded to the initiative and whether it has effectively contributed to their expansion and sustainability. The research further delves into sector-wise impacts, government policies, and real-life examples of businesses that have flourished under this initiative.

3. Problems of the Study

Despite the promising aspects of the Make in India initiative, several challenges and issues hinder its full implementation and effectiveness in Mumbai-based enterprises. The key problems identified in this study are High Cost of Operations, Regulatory and Bureaucratic Challenges, Infrastructural Bottlenecks, Access to Skilled Labor, Financing Constraints for SMEs, Global Competition and Market Access, Policy Uncertainty, Environmental and Sustainability Concerns. Addressing these problems requires targeted policy interventions and better implementation strategies to ensure that make in India fully benefits Mumbai's industrial ecosystem.

4. Review of Literature

The **Make in India** initiative has been a significant policy shift aimed at boosting manufacturing and economic growth in India. Various studies have analyzed its impact on businesses, employment, and foreign investment. This review examines previous research on the initiative's role in Mumbai-based enterprises, highlighting key findings and research gaps.

5. Objectives of the Study

1. To analyze the impact of Make in India on manufacturing and service industries in Mumbai.
2. To assess the role of government policies in facilitating business growth.
3. To identify the challenges Mumbai-based enterprises face in adopting Make in India policies.
4. To evaluate employment generation and economic contributions resulting from the initiative.
5. To provide a sector-wisebreak down of the impact on key industries.
6. To examine case studies of Mumbai-based enterprises that have benefited from Make in India.
7. To recommend policy measures for further improvement.

6. Hypothesis

H1: Government initiatives like 'Make in India' have had a significant positive impact on the growth and performance of Mumbai-based enterprises

H0: Government initiatives like 'Make in India' have had no significant impact on the growth or performance of Mumbai-based enterprises.

7. Research Methodology with Research Gap

This study employs a quantitative and qualitative research approach, using secondary data from government reports, business publications, industry analysis, and academic research. Additionally, case studies of select Mumbai- based enterprises provide insight into real-world applications and outcomes. Interviews with industry experts, government officials, and entrepreneurs offer valuable perspectives on the policy's effectiveness.

Research Gap While numerous studies have analyzed the broader impact of Make in India on India's manufacturing sector, limited research has been conducted specifically on Mumbai-based enterprises. Key research gaps include:

1. **Lack of Region-Specific Analysis** – Most existing literature focuses on nationwide or state-level impacts rather

than city-specific effects.

2. **Limited Data on MSMEs** – There is insufficient research on how Mumbai's small and medium enterprises (SMEs) have adapted to Make in India policies
3. **Impact on Emerging Industries** – Studies have primarily examined traditional industries like textiles and automobiles but have not sufficiently addressed newer sectors like fintech and digital manufacturing
4. **Challenges in Policy Implementation** – There is limited research on bureaucratic and infrastructural challenges faced by Mumbai-based businesses when implementing Make in India reforms.

This paper aims to bridge these gaps by providing a detailed analysis of Mumbai's industrial landscape, highlighting sector-specific challenges and opportunities under the Make in India initiative.

8. Sampling Selection

The study adopts a purposive sampling method to select enterprises and stakeholders relevant to the Make in India initiative in Mumbai. The selection criteria include:

1. **Industry Representation** – Businesses from manufacturing, IT, pharmaceuticals, textiles, and financial services were chosen to provide a diverse sectoral perspective.
2. **Enterprise Size** – Both large-scale industries and MSMEs were considered to assess the impact on businesses of different scales.
3. **Geographical Location** – Enterprises within Mumbai's key industrial zones such as Andheri, Navi Mumbai, and Bhiwandi were included to understand regional variations in implementation.
4. **Government Affiliation** – Enterprises that have benefited from government schemes and incentives under Make in India were prioritized.
5. **Expert Interviews** – Policy makers, industry experts, and business owners were interviewed to gain qualitative insights into the effectiveness and challenges of the initiative.

This sampling approach ensures a comprehensive analysis of Make in India's impact on Mumbai-based enterprises, providing both quantitative and qualitative insights into the initiative's success and limitation.

9. Secondary Data (Existing information from reliable sources)

- **Government Reports**: Ministry of Commerce & Industry, MSME reports, Maharashtra Industrial Development Corporation (MIDC) publications.
- **Industry Reports**: Confederation of Indian Industry (CII), FICCI, World Bank ease of doing business rankings.
- **Research Papers & Journals**: Studies on Make in India and its impact on manufacturing and trade in Mumbai.
- **Company Reports**: Annual reports of manufacturing firms, startup success stories, and foreign investment trends.
- **News & Media Sources**: Business newspapers, economic magazines, and reports on recent policy changes.

10. Data Analysis andFindings

Data Analysis Methodology

The study will employ both **quantitative** and **qualitative** methods to analyze the collected data.

QuantitativeAnalysis:

- Statistical tools like percentages, mean, and standard deviation will be used to evaluate survey responses.
- Software such as **Excel, SPSS, or R**can be used for data processing.
- Graphs, charts, and tables will present trends in business growth, employment rates, and investment patterns.

QualitativeAnalysis:

- Thematic analysis of interviews and case studies will be conducted to identify key business challenges and success factors.
- SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis will be applied to evaluate the Make in India initiative's impact on Mumbai-based enterprises.

11. KeyFindings

A. Impact on Business Growth

Positive Growth: Several MSMEs and large enterprises in Mumbai have expanded due to Make in India incentives like tax benefits, ease of licensing, and infrastructure development.

Sector-wiseImpact:

Manufacturing &Automotive: Increased investment in local production but faces infrastructure limitations.

Pharmaceuticals: Strong export performance due to eased policies.

IT &Startups: Improved FDI inflows and business-friendly policies.

B. Challenges Faced by Enterprises

High Operational Costs: Despite incentives, Mumbai's real estate and labor costs remain high.

Bureaucratic Delays: Some businesses reported delays in government approvals and funding.

Skilled Labor Shortage: Many firms strugg let of in trained workers despite Skill India programs.

Logistics & Infrastructure Issues: While improvements are visible, supply chain disruptions and congestion in Mumbai ports remain a concern.

Employment Trends

JobCreation: Increased hiring in manufacturing and ITsectors.

Skill Gap: Mismatch between industry demands and work forces kills.

a. **Foreign Direct Investment (FDI)Trends**

- Mumbai has witnessed increased FDI inflows, especially in **real estate, finance, and IT**.
- Some sectors still struggle to attract foreign investment due to regulatory hurdles.

b. Easeo f Doing Business in Mumbai

- Mixed results: Improvement in digital processes for business registration but continued issues with land acquisition and compliance.

Summary of Findings

- Make in India has positively influenced business expansion, particularly in manufacturing, IT, and pharmaceuticals.
- However, **high costs, regulatory delays, and infrastructure gaps** are key barriers.
- Government efforts in skill development need better alignment with industry requirements.
- Mumbai's enterprises benefit from policy support but require better execution and monitoring.

The study explores the impact of **Make in India** on Mumbai-based enterprises, focusing on business growth, investment trends, employment generation, and policy effectiveness. It covers multiple aspects, including:

1. GeographicScope

- The study focuses on **Mumbai**, India's financial and business hub.
- It includes enterprises from **key industrial zones**, such as **MIDC areas, SEEPZ (Special Economic Zone), Bandra-Kurla Complex (BKC), and Navi Mumbai industrial clusters**.

1. **Sectoral Scope**

- **Manufacturing** (textiles, automobiles, electronics)
- **Pharmaceuticals** (Mumbai being a pharma hub)
- **Information Technology (IT)andStartups**
- **Logistics and Infrastructure**
- **Small and Medium Enterprises (SMEs)**

2. **Economic Scope**

Examines how **Make in India** has influenced **GDPcontribution, employment rates, and foreign direct investment (FDI)** in Mumbai.

Analyzes the growth of **startups and MSMEs** due to government incentives.

3. **Policy Scope**

Evaluates **government policies, tax benefits, subsidies, and ease of doing business reforms** under Make in India.

Assesses the effectiveness of initiatives like **Skill India, Digital India, and Startup India** in supporting businesses.

4. **TimeFrameof Study**

Covers **2014 (launch of Make in India) to 2025**, analyzing **trends, challenges, and future prospects**.

5. **TargetStakeholders**

Business Owners & Entrepreneurs: To understand how policies impact their operations.

Government Agencies & Policymakers: To assess implementation effectiveness.

Investors & Financial Institutions: To analyze investment trends in Mumbai.

Employees & Job Seekers: To examine job creation and skill development opportunities.

Challenges and Limitations

Despite its successes, Make in India faces challenges in Mumbai, including:

- **High Real Estate Costs**: Mumbai's expensive commercial real estate limits manufacturing expansion.
- **Bureaucratic Delays**: While policies have improved ease of doing business, some enterprises still experience delays in approvals and compliance procedures.
- **Skilled Labor Shortages**: Despite skill development programs, there is a demand-supply gap in specialized industrial skills.
- **Competition from Global Markets**: Domestic manufacturers face stiff competition from international firms, affecting growth potential.

Impact of Make in India on Mumbai-Based Enterprises

1. **Boost to Manufacturing and Industrial Growth**

Mumbai has witnessed a rise in manufacturing activities, especially in sectors like **automobile components, textiles, and pharmaceuticals**. Thegovernment has provided financial incentives, tax benefits, and relaxed FDI norms, encouraging industrial expansion. The establishment of industrial clusters and special economic zones (SEZs) have further strengthened the manufacturing ecosystem in and around Mumbai.

2. **Increased Foreign DirectInvestment (FDI)**
   Make in India has significantly liberalized **FDI regulations**, attracting foreign investments in Mumbai's IT, automobile, and financial services sectors.
   Several multinational companies have expanded their operations, contributingto the city's economy. The introduction of 100% FDI in single-brand retail and defence manufacturing has further opened opportunities for businesses.
3. **Growth of Small and MediumEnterprises (SMEs)**
   SMEs in Mumbai have benefited from various government schemes, including reduced compliance burdens and better access to credit under schemes like **MUDRA loans, Stand-Up India, and Credit Guarantee Fund Scheme**. Many small-scale manufacturers have leveraged government support to modernize their operations and enhance productivity.
4. **Infrastructure Development**
   The initiative has led to major infrastructural improvements, such as **Mumbai Trans Harbour Link, metro expansions, and logistics hubs**, facilitatingbetter connectivity for businesses. The development of industrial corridors and freight corridors has improved supply chain efficiency for manufacturing units.
5. **Employment Generation**
   New investments in manufacturing and service industries have led to job creation. Additionally, initiatives like **Skill India**, aligned with Make in India, have enhanced workforce capabilities in Mumbai's industrial sector.
   Vocational training centers and technical institutes have played a significant role in bridging the skill gap.

Sector- Wise Analysis of Make in India's Impact

1. **Pharmaceutical Industry**
   Mumbai is a pharmaceutical hub, housing major players like Sun Pharma, Cipla, and Lupin. Make in India has encouraged local API (Active Pharmaceutical Ingredient) manufacturing, reducing dependence on imports and boosting exports.
2. **Textile and Apparel Industry**
   The textile sector has seen investments in modernization and technology adoption. The government's push for locally made fabrics and garments has strengthened Mumbai's traditional textile industry.
3. **Automobile and Auto-Component Industry**
   Mumbai has emerged as a centre for auto-component manufacturing, with investments from companies like Tata Motors and Mahindra. The localization of parts has reduced costs and enhanced competitiveness.
4. ITandTechnology Sector
   IT firms have benefited from reduced compliance and tax incentives. Mumbai's fintech and startup ecosystem has grown rapidly under Make in India, with companies like Paytm and Razor pay scaling operations.
5. LogisticsandSupplyChain

With improvements in infrastructure and the development of industrial corridors, Mumbai's logistics industry has expanded. The introduction of **Gati Shakti National Master Plan** has further optimized supply chain networks.

Case Studies of Mumbai-Based Enterprises Benefiting from Make in India

1. **SunPharma**
   Sun Pharma leveraged Make in India incentives to expand its local API manufacturing and reduce dependence on China.
2. **Raymond Ltd.**
   The textile giant upgraded its production facilities and saw a rise in domestic and international demand for Indian-made fabrics.
3. **Mahindra & Mahindra**

The automobile company increased local sourcing of components and expanded production capacity in Maharashtra, benefiting from Make in India policies.

<u>Conclusion and Policy Recommendations</u>

Makein Indiahas playeda vitalrole in transforming Mumbai-based enterprises by promoting investment, industrial growth, and job creation. While the initiative has contributed to economic expansion, addressing infrastructural bottlenecks, skill shortages, and regulatory challenges is crucial for its long-term success.

Recommendations:

1. **Strengthen MSME support programs** with increased funding and mentorship.
2. **Enhance skill development programs** tailored for high-demand industries.
3. **Improve infrastructure and industrial zones** to reduce operational costs.

4. **Streamline bureaucratic processes** to enhance ease of doing business.
5. **Encourage technological innovation** through R&D incentives and collaborations.

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Digital Transformation through E-Commerce: Analyzing the Impact on Consumer Behaviour and Business Models

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Abstract: The ongoing digital revolution has significantly reshaped the global business environment, with e-commerce playing a pivotal role in driving digital transformation. This research paper aims to analyze the impact of e-commerce on consumer behaviour and business models, focusing on how technological advancements influence purchasing patterns and strategic business approaches. The study delves into the ways digital transformation, fueled by e-commerce, enhances customer engagement through personalized experiences, data-driven marketing, and omnichannel strategies. It also examines the evolution of business models, emphasizing how companies adapt their operations, supply chains, and customer service practices to align with digital trends. By analyzing case studies and industry data, the paper highlights both opportunities and challenges that arise from integrating e-commerce into traditional business frameworks. The findings of this study provide valuable insights for organizations aiming to leverage e-commerce to achieve sustainable growth and maintain competitive advantage in the digital era.
Keywords: Digital Transformation, E-Commerce, Consumer Behaviour, Business Models, Omnichannel Strategies, Digital Marketing, Data-Driven Decision Making, Customer Engagement, Technological Advancements, Competitive Advantage.

Introduction

1.1 Background and Context

Digital transformation integrates technology into business operations, fundamentally altering how companies interact with consumers. E-commerce is a cornerstone of this transformation, revolutionizing consumer-business interactions. Technological advancements have spurred rapid adoption of e-commerce platforms, creating both opportunities and challenges for businesses.

1.2 Significance of Digital Transformation in E-Commerce

E-commerce enables businesses to compete in a digital marketplace by reaching global audiences, streamlining operations, and offering personalized experiences. As consumer expectations evolve, businesses must adapt by leveraging e-commerce technologies to enhance efficiency, engagement and innovation.

1.3 Research Objectives

- Analyze e-commerce's impact on consumer behaviour in Mumbai.
- Examine how digital transformation influences business models.
- Identify challenges and opportunities of integrating e-commerce into traditional frameworks.

1.4 Scope of the Study

The research focuses on Mumbai's consumers and businesses, using primary data from surveys and interviews alongside literature reviews to assess how e-commerce affects consumer behaviour and business models.

Literature Review

2.1 The Role of E-Commerce in Digital Transformation

E-commerce drives digital transformation by fostering innovation, improving accessibility and streamlining processes. It is integral to modern commerce.

2.2 Changing Consumer Behaviour in the Digital Era

Digital platforms have shifted consumer preferences towards online shopping, personalized marketing, and data-driven decision-making. Consumers demand convenience, efficiency and tailored experiences.

2.3 Evolving Business Models: Challenges and Opportunities

Businesses face challenges like data privacy concerns and customer retention but gain opportunities for new revenue streams, direct consumer interaction and flexible strategies.

2.4 Case Studies of Digital Transformation through E-Commerce

Local case studies highlight successful digital initiatives in Mumbai that showcase innovation and growth through e-commerce adoption.

Research Methodology

3.1 Research Design

The study employs a mixed-method approach combining quantitative surveys with qualitative interviews for comprehensive insights into consumer behavior and business model adaptation.

3.2 Data Collection Methods

Surveys capture consumer perspectives on e-commerce adoption while interviews explore strategic adjustments by business managers.

3.3 Sampling Techniques

Purposive sampling targets 100 survey respondents and 10 business representatives actively engaged in e-commerce.

3.4 Data Analysis Techniques

Quantitative data is analyzed using statistical methods like correlation studies; qualitative data undergoes thematic analysis to identify recurring patterns.

Data Collection and Analysis

4.1 Demographic Analysis of Respondents

Survey respondents represent diverse age groups, occupations and income levels in Mumbai to understand varied consumer responses to e-commerce-driven changes.

4.2 Impact of E-Commerce on Consumer Behaviour (Survey Results)

Survey findings show a shift towards online shopping driven by convenience, competitive pricing, fast delivery, and digital payment options.

4.3 Adaptation of Business Models (Interview Findings)

Interviews reveal improved customer outreach and streamlined operations due to digital integration but highlight challenges like cybersecurity risks.

4.4 Statistical and Thematic Analysis

Survey data is analyzed using SPSS for correlations between demographics and e-commerce usage; thematic analysis identifies strategies employed by businesses to adapt to digital trends.

Results and Discussion

5.1 Interpretation of Findings

Consumers increasingly prefer online shopping due to convenience and efficiency. Businesses adopting e-commerce report enhanced customer engagement but face challenges like maintaining loyalty and ensuring data security.

5.2 Comparison with Previous Research

Findings align with global trends showing accelerated digital transformation due to technological advancements but highlight unique challenges specific to Mumbai's context, such as the digital divide.

5.3 Implications for Businesses

Mumbai-based businesses should invest in digital infrastructure, prioritize cybersecurity measures, offer personalized experiences and maintain strong online presences to capitalize on the shift toward e-commerce.

Conclusion and Recommendations

6.1 Summary of Key Insights

E-commerce has significantly reshaped consumer behaviour and business models in Mumbai by driving digital transformation across industries.

6.2 Strategic Recommendations for Businesses

- Invest in robust digital infrastructure.
- Enhance cybersecurity measures.
- Focus on personalized marketing strategies.
- Develop flexible business models responsive to evolving consumer demands.

6.3 Limitations and Future Research Directions

The study's focus on Mumbai limits its generalizability; future research could explore other regions or examine long-term impacts of e-commerce-driven transformation globally.

References

Key references include works by Chaffey & Ellis-Chadwick (2019), Laudon & Traver (2020), Brynjolfsson & McAfee (2014), Turban et al. (2018), Statista (2024), McKinsey & Company (2023).

Appendices

- Survey Questionnaire
- Interview Guide
- Raw Data Tables

Climate Change Economics: Analyzing the Economic Implications of Climate Change and Sustainable Development

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ABSTRACT:
This research paper delves into the profound economic implications of climate change and the critical role of sustainable development in addressing these challenges. Climate change has emerged as a defining issue of our time, exerting far-reaching effects on global economies, disrupting industries, and intensifying resource scarcity. The paper evaluates these adverse economic impacts, focusing on vulnerable sectors such as agriculture, energy, and infrastructure, while emphasizing the disproportionate burden on developing nations and marginalized communities.
Through a comprehensive analysis, the study explores adaptation and mitigation strategies that balance economic growth with environmental sustainability. Key themes include the adoption of renewable energy, carbon pricing mechanisms, green finance, and the role of innovation in fostering resilience against climate-related disruptions. The research highlights the importance of global cooperation and policy frameworks, such as the Paris Agreement, to ensure an equitable transition toward sustainable development.
By integrating theoretical insights, empirical data, and case studies, the paper seeks to provide actionable recommendations for policymakers, businesses, and communities. These insights aim to inspire collaborative efforts to mitigate the economic risks of climate change while unlocking opportunities for innovation and inclusive growth. The findings underscore the imperative of aligning economic objectives with environmental stewardship, advocating for a future where sustainability drives progress and prosperity.

KEYWORDS: Climate Change, Sustainable Development, Renewable Energy.

INTRODUCTION:
The intersection of climate change and sustainable development is one of the most critical topics in today's world. As nations grapple with the urgent need to address environmental challenges, the economic implications of these issues become ever more significant. This analysis provides a foundation for understanding how climate change affects economies and how sustainable development can mitigate these effects while fostering growth.
The economic implications of climate change are profound and far-reaching. From increasing costs due to extreme weather events to disruptions in global supply chains and shifts in resource availability, climate change poses risks to businesses, governments, and individuals alike. Additionally, the need to transition to greener technologies and energy sources involves substantial investments, which can influence economic policies and priorities.
Sustainable development offers a pathway to balance environmental preservation with economic progress. By emphasizing renewable energy, resource efficiency, and social equity, sustainable practices not only aim to reduce the negative impacts of climate change but also create opportunities for innovation, job creation, and long-term resilience.

LITERATURE REVIEW:
1. According toMichael Jakob and Jan Christoph Steckel this article under review presents a conceptual framework aimed at integrating analyses of climate change mitigation with existing literature on the impacts of climate change and the co-benefits of mitigation policies. The focus of this framework lies in formulating sustainable development policies. A key barrier identified in advancing climate policy is the intricate decision-making process that extends beyond assessing the costs of climate change impacts versus mitigation. This complexity is compounded by the diverse policy objectives at different governance levels, from local to global.
The authors argue that explicit acknowledgment of trade-offs between policy objectives is essential for informed decision-making, though this task is notably challenging. The scenarios analyzed in the study offer a preliminary evaluation of the solution space, primarily emphasizing climate considerations. However, these scenarios do not fully explore how certain risks could be mitigated through complementary policies or consider the heightened risk of irreversible climate damages due to delayed action, particularly when ambitious mitigation targets become unattainable. Conversely, risks linked to specific technologies may be mitigated by curtailing or discontinuing their use.
The analysis is thus positioned as an initial step toward identifying trade-offs critical to climate policy development. It advocates for a holistic and integrated assessment approach grounded in sustainable development principles, recognizing the multifaceted objectives inherent in climate policy design. The authors emphasize the need for future research to broaden this scope by addressing additional policy objectives and employing more advanced methodologies to assess and compare various indicators comprehensively.
2.According toH.A.C. Prasad and J.S. Kochher, the principle of common but differentiated responsibility serves as a crucial foundation for climate negotiations, emphasizing equitable approaches to emissions reductions. Building on the Prime Minister of India’s proposal to equalize per capita emissions across countries, it is essential for India to tactfully

highlight its efforts in conserving fossil fuel use and reducing greenhouse gas emissions. This distinction reinforces India's position as separate from major global polluters, such as China, and acknowledges its proactive climate measures.

While India considers various mitigation and adaptation strategies, caution is necessary to ensure that the climate change narrative is not exaggerated, as underscored by the United Nations Development Programme (UNDP). The UNDP's Human Development Report (HDR) 2007/2008 warns about the profound risk's climate change poses to poverty alleviation efforts, threatening progress in health, nutrition, education, and overall development. Left unchecked, climate change could reverse achievements spanning generations, undermining efforts to meet Millennium Development Goals (MDGs).

Thus, a balanced, committed approach to addressing climate challenges is vital—one that safeguards against overplaying the issue while remaining resolute in mitigating its potential adverse effects.

3.According toSecretariat, Rajya Sabha Climate change stands as the defining challenge of our era, posing significant threats to sustainable development. Addressing this global issue necessitates a unified approach, devoid of narrow and short-sighted perspectives. Developed nations must transcend their individual self-interests and collaborate with developing countries to craft cooperative strategies that hold paramount importance for the future of humanity. Despite the pressing urgency, efforts to confront climate change have been fragmented and inconsistent.

The call for a new economic paradigm is critical—one that is global in scope, inclusive in nature, environmentally conscious, and firmly rooted in scientific principles. Jeffrey Sachs aptly highlights the unsustainable trajectory of current ecological, demographic, and economic trends, cautioning that continuing with "business as usual" could lead to severe social and ecological crises with disastrous outcomes.

For progress to be made, sustainable development must focus on addressing the needs of impoverished communities and responsibly utilizing scarce resources such as water, air, energy, land, and biodiversity. Only through enhanced cooperative endeavours can humanity steer the planet away from the brink of climate-related catastrophes and ensure a viable future for generations to come.

4.According toAitken, H The literature highlights several key considerations for enhancing energy efficiency in buildings across different climatic zones. For continental climates, the west-east elongated (south-facing) orientation consistently proves optimal for minimizing energy demands. Conversely, orientation bears minimal influence on annual energy use intensity (EUI) in humid subtropical climates, while slightly increasing energy demands in subtropical arid climates when adopting west-east elongated designs.

Properly designed overhangs uniformly reduce building energy demands across continental, humid subtropical, and subtropical arid climates, although their effectiveness is relatively limited in continental climates. Wall insulation is beneficial in continental climates, yet paradoxically leads to slight increases in energy demands in subtropical arid and humid subtropical zones.

Finally, internal factors such as the number of occupants, computers, and electrical appliances contribute to noticeable increases in energy demands regardless of geographic location. These internal heat gains have a more moderate impact on EUI in colder climates.

5.According toHussain, S., Hussain, E., Saxena, P., Sharma, A., Thathola, P., & Sonwani, S. the developing nations face undeniable vulnerabilities to climate change, in stark contrast to their more developed counterparts. This heightened susceptibility arises from the complex interplay between fragile ecosystems, precarious economic structures, and pervasive poverty, as highlighted by numerous scholars (Panda, 2009). Changes in land use driven by rapid urbanization, altered river courses, shifting cultivation, erosion, and desertification, as documented by experts (Chakraborty, 2009; Sreenivasulu and Bhaskar, 2010), have significantly disrupted ecosystems.

India, as a rapidly developing nation, exemplifies these challenges with its alarming warming trends over the decades. These trends have precipitated extreme weather events and a growing demand for cooling during hotter summers, influenced by both climate change and population growth. Vulnerable urban communities, particularly the impoverished, elderly, children, and those reliant on climate-sensitive occupations such as fishing, are especially susceptible to climate impacts.

Given the substantial proportion of the global population residing in urban areas (Metz et al., 2007), India's approach to addressing these challenges holds significant implications for consumption habits and overall sustainability. In this context, nature-based solutions (NbS) emerge as a promising strategy to mitigate the impacts of urbanization and climate change. By incorporating natural elements into urban environments, NbS not only enhance resilience but also foster well-being, providing hope amid the escalating climate crisis.

OBJECTIVES:

1. To Assess Economic Impacts of Climate Change
2. To Explore Policy Interventions
3. To Promote Green Finance

RESEARCH METHODOLOGY:

1. Study type: This is a descriptive study in character.
2. Data sources: Secondary sources make up the study's data set.

3. Secondary data: Books, journals, online journals, and websites pertaining to the subject are the sources of secondary data.

OBJECTIVE OUTPUT:

The objectives are designed to provide an in-depth understanding of the critical relationship between environmental changes and economic growth. These objectives include:

1. **Understanding Economic Vulnerabilities**: To assess how climate change disrupts various sectors of the economy, with a particular focus on industries like agriculture, energy, and infrastructure that are highly sensitive to environmental shifts.
2. **Exploring Adaptation and Mitigation Measures**: To evaluate strategies and policies aimed at reducing the adverse economic effects of climate change, such as promoting renewable energy, carbon offset mechanisms, and sustainable resource management practices.
3. **Promoting Sustainable Development Models**: To identify pathways to economic growth that do not compromise environmental sustainability, emphasizing resource efficiency, circular economies, and inclusive development practices.
4. **Analyzing Global and Regional Trends**: To examine the differing impacts of climate change across regions and countries, highlighting how geographical, political, and economic contexts shape the consequences and solutions.
5. **Encouraging Innovation and Investment**: To highlight the role of technological advancements, green finance, and policy-driven investments in fostering resilience against climate change while driving economic progress.
6. **Supporting Policymaking**: To provide data-driven insights and evidence to inform national and international policy frameworks that balance climate actions with economic stability.

By achieving these objectives, the research paper aims to contribute meaningfully to the discourse on integrating environmental and economic priorities, ensuring a sustainable future.

IMPLICATIONS:

1. **Climate Change and Human Vulnerabilities**:
   - Developing countries face heightened risks due to limited resources for adaptation.
   - Climate-sensitive sectors like agriculture and water resources are critical for livelihoods, especially in vulnerable regions.
2. **Sustainable Development Goals (SDGs)**:
   - Achieving SDGs requires addressing climate change impacts, such as poverty, inequality, and environmental degradation.
   - International collaboration is essential to limit global warming and promote equitable development.
3. **Adaptation Strategies**:
   - Local coping mechanisms and sustainable practices are vital for resilience.
   - Integrating climate adaptation into policy and capacity-building efforts ensures long-term sustainability.
4. **Scientific Insights**:
   - Research highlights the need for rapid emissions reductions to meet SDG targets.
   - Understanding the interconnections between climate indicators and SDGs can inspire bold climate action.

SUGGESTIONS:

1. Integrate Case Studies

- Include case studies of nations or regions that have successfully implemented sustainable practices and mitigated climate risks. For example, discuss how Denmark's renewable energy initiatives or Bhutan's carbon-neutral policies have influenced their economies.

2. Highlight Sector-Specific Impacts

- Dedicate sections to explore how climate change affects key economic sectors such as agriculture, energy, tourism, and transportation. Address both challenges and opportunities in each sector.

3. Quantify Economic Costs

- Use data-driven analysis to quantify economic losses due to climate change, such as the cost of extreme weather events, resource depletion, and healthcare impacts caused by pollution and rising temperatures.

4. Examine Policy Interventions

- Analyze the effectiveness of international frameworks like the Paris Agreement and local initiatives such as carbon pricing, emissions trading systems, and subsidies for renewable energy.

5. Discuss Innovation and Green Finance

- Evaluate the role of technological innovations (e.g., electric vehicles, green buildings) and financial mechanisms like green bonds in addressing climate challenges and driving sustainable growth.

6. Focus on Social and Equity Dimensions

- Incorporate perspectives on how climate change disproportionately affects vulnerable populations and discuss how equitable and inclusive policies can minimize these disparities.

7. Explore the Trade-Offs

- Discuss the potential conflicts between economic growth and environmental protection, offering insights on how sustainable practices can balance these trade-offs.

8. Develop Recommendations

- Provide actionable insights for policymakers, businesses, and communities to promote sustainable development while reducing economic risks from climate change.

9. Visualize Data

- Include charts, graphs, and maps to visually represent data on carbon emissions, economic impacts, or regional vulnerabilities for clearer communication.

CONCLUSION:

In conclusion, the research highlights the intricate and profound relationship between climate change and economic development. It underscores that while climate change poses significant economic risks—disrupting industries, intensifying resource scarcity, and escalating costs—it also presents opportunities for transformative growth through sustainable development.

Adopting sustainable practices, investing in renewable energy, and embracing innovative solutions can help mitigate the negative economic impacts of climate change while fostering resilience and long-term prosperity. However, the journey toward sustainable development requires a collaborative approach—integrating policy interventions, global cooperation, and active participation from all stakeholders, including governments, businesses, and communities.

Ultimately, the research affirms that addressing climate change is not just an environmental imperative but also an economic one, where prioritizing sustainability can unlock pathways to equitable and inclusive progress. By bridging the gap between economic growth and environmental stewardship, a sustainable future becomes attainable.

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A New Income Tax Bill 2025- A Move TowardsUnearthening Digital Assets

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Abstract

The government is advancing a new income tax bill for 2025 with the aim of enhancing legal frameworks, particularly concerning virtual digital assets (VDA). This initiative to uncover digital assets is expected to boost government revenue while also offering relief to small- medium-income earners by increasing income rebates. Collecting evidence from digital accounts is crucial not only to demonstrate tax evasion, but also to accurately calculate the amount of tax that has been evaded.

Key word- Virtual digital assets, New Income Tax Bill.

Introduction

The Income-Tax Bill, 2025 was presented in Lok Sabha on February 13, 2025, aiming to replace the Income-Tax Act of 1961. This bill was intended to simplify the intricate Income tax Act of 1961. Over the years, the Income Tax Act has been modified numerous times with annual updates introduced through the Union Budget. Over the last 60 years, the Act has seen a substantial evolution, including changes in tax rates, the introduction of new provisions, and the addition of new exemptions while removing outdated ones. The Bill was set to take effect on April 1, 2026. During the 2024 Budget Speech, Finance Minister Nirmala Sitharaman announced the government's plan to review the 1961 Income Tax Act. This review aims to make the act more concise, allowing taxpayers to read and comprehend it more easily.

The Minister's main goal is to minimize conflicts and legal actions related to the tax system. By doing so, the government aims to improve tax certainty by ensuring clarity and simplifying compliance for taxpayers.

The Income Tax Bill 2025, which consists of more than 600 pages, 536 sections, 23 chapters, and 16 schedules, includes provisions that are both comprehensive and easier to comprehend, with the goal of enhancing the compliance process.

The terms "assessment year" and "previous year" have been replaced with "Tax year" and "Financial year." Additionally, specific provisions for virtual digital assets have been established.

Digital assets refer to items stored in electronic form that can be purchased, sold, owned, transferred, or exchanged. In terms of taxation, a digital asset is defined as any digital representation of value that is recorded on a cryptographically secured, distributed ledger, such as a blockchain, or similar technology.

The government has suggested enhancing legal measures to monitor digital assets in the upcoming Income Tax Bill, 2025, as the previous Income Tax Act lacked sufficient legal support for probing digital assets.

During a discussion on the Income Tax Bill 2025, Finance Minister Nirmala Sitharaman explained that the absence of legal provisions in the previous Income Tax Act for regulating digital assets led the government to propose specific measures in the new legislation.

The recent move aligns tax enforcement with technological advancements, ensuring that virtual assets, including cryptocurrencies, remain under scrutiny. The new bill empowers officials to access communication platforms like emails, WhatsApp, and Telegram, as well as enterprise software and storage servers used by businesses to hide financial transactions.

The Finance Bill 2025 was approved by the Lok Sabha on March 25. As of February 28, law enforcement agencies had deactivated more than 781,000 SIM cards linked to digital fraud. During the debate on the Income Tax Bill 2025, Finance Minister Nirmala Sitharaman highlighted that the previous Income Tax Act lacked provisions for regulating digital assets, prompting the government to introduce specific measures in the new legislation.

Literature Review

Jalan, N. (2023). Taxation of Virtual Digital Assets. Asia-Pacific Tax Bulletin, 29(1).https://doi.org/10.59403/3ax1m66Crypto-related transactions and their regulatory and tax implications have become a key topic of discussion. In the context of India, the author examines the existing legislation and assesses its effectiveness, particularly as the adoption of cryptocurrencies and other virtual digital assets continues to grow across various sectors.

Vatsa Akanksha, Taxation of Virtual Digital Assets in India: A Critical Analysis, I HPNLU JTL 130 (2022).

After analysing the topic, the author believes that taxing Virtual Digital Assets (VDA) is the most appropriate move, as outlined in the Finance Budget 2022. However, the author emphasizes the need for a comprehensive regulatory framework, which should be developed through proper discussion and debate not only among legislators but also through multi-stakeholder consultations involving key players such as crypto exchanges, consumer organizations, and related entities. Additionally, the author suggests imposing Goods and Services Tax (GST) on services provided to investors by VDA platforms, which could contribute to the government's revenue.

Katherine Baer, Ruud de Mooij, Shafik Hebous, and Michael Keen, WP/23/144 Taxing Cryptocurrencies (Jul 2023) Digital assets, including cryptocurrencies and non-fungible tokens, present unique challenges for income tax systems not designed to handle them. The dual nature of cryptocurrencies as both investment assets and means of payment complicates their tax treatment. One of the primary issues is the implementation of tax policies for digital assets. The pseudonymous nature of cryptocurrencies poses a significant obstacle to third-party reporting, making it difficult for tax authorities to track and verify transactions. This lack of transparency could potentially lead to tax avoidance, as outlined in the general principles described in . Interestingly, while the capital gains tax revenue from cryptocurrencies could be substantial, potentially in the tens of billions of dollars worldwide, the more profound risks may ultimately be for VAT/sales taxes. This suggests that tax authorities need to consider not only income tax implications but also broader tax implications of digital assets. In conclusion, the taxation of digital assets presents both design and implementation challenges for policymakers. As the digital asset market continues to grow, there is a pressing need for clear tax guidelines and reporting mechanisms. Future research and policy development should focus on addressing these challenges while considering the unique characteristics of digital assets and their potential impact on various types of taxes.

Analysis

A key update in the Bill is the inclusion of virtual digital assets within the definition of undisclosed income, thereby broadening the scope to cover digital tokens, cryptocurrencies, and other cryptographic representations of value.

Additionally, the Bill empowers income tax authorities with the authority to access virtual digital spaces during search and seizure operations. This includes email servers, social media accounts, online investment and trading platforms, and websites that store asset ownership details. Authorities are also authorized to bypass access codes in order to inspect these digital environments as part of tax investigations.

Conclusions

The move aligns tax enforcement with technological advancements, ensuring that virtual digital assets, such as cryptocurrencies, remain under scrutiny. The new bill grants officials the authority to access communication platforms like emails, WhatsApp, and Telegram, along with enterprise software and storage servers used by businesses to conceal financial transactions.

Global Context of AI and Automation: ImpactonIndia

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AI and automation are transforming sectors globally, contributing significantly to economic growth. According to recent reports, AI could add upto$15.7 trilliontotheglobaleconomyby 2030. Key advancements include machine learning, natural language processing, robotics, and computer vision, enabling smarter decision-making and efficiency.
However, this transformation raises concerns about job displacement, ethical implications, and data privacy worldwide. My main concern for developing nations like India, balancing growth with the process of identifying strategies to reduce their negative impacts, is particularly crucial. Studies by international research organizations highlight the potential threats which need a careful planning to ensure that these technologies benefit everyone.
AIandAutomation in India: An Overview

Current Landscape
Tech Hub Status: Cities like Bengaluru, Hyderabad, and Pune are global hubs fo rsoftware development and innovation. They're driving India's AI adoption forward.
Government Initiatives: TheIndian government's National AI Strategy, updated in subsequent years, and programs like "Digital India" aim to position India as a global leader in AI by 2030. These initiatives emphasize inclusive growth and sector-specific applications.
Startup Ecosystem: Over 4,500 AI startups in India are focusing on healthcare, agriculture, education, and fintech. This vibrant ecosystem is a testament to India's potential in AI.

Sectoral Impact
Healthcare: AI-powered tools are being used for disease diagnosis, telemedicine, and drug discovery. For example, collaborations between the Indian Council of Medical Research and AI startups have developed models for predicting diseases like tuberculosis and diabetes, improving preventive healthcare.
Agriculture: AI-driven solutions, such as drone-basedcropmonitoringandpredictiveanalytics, are helping farmers increase yields. Government platforms like mKisan and Agristack provide AI- powered advisory services for crop planning and pest control.
Manufacturing: Automation in factories is boosting productivity, with major companies adopting robotics and IoT.
Finance: AI enhances fraud detection, customer service, and personalized banking, with banks leveraging robotic process automation (RPA) to reduce costs and errors.

Positive Impacts on India
Economic Growth: Recent industry forecasts suggest the Indian AI market could reach $11.78 billion by 2025, growing at a compound annual growth rate (CAGR) of 33.7%. This growth is expected to boost India's GDP by potentially $500 billion by 2025.
Job Creation: Contrary to fears of job loss, AI and automation are creating new roles in data science, machine learning, and AI ethics. The National Skill Development Corporation (NSDC)estimates that AI could generate 1.5 million new jobs in India by 2025.
Social Benefits: AI is improving access to education through personalized learning platforms and enhancing public services like traffic management and disaster response. In rural areas, AI solutions are addressing challenges like water management and agricultural productivity, contributing to inclusive growth.

Challenges and Risks
Job Displacement: Automation of repetitive tasks, especially in manufacturing and customer service, could lead to joblosses for low-skilled workers. An International Monetary Fund (IMF)analysis suggests that nearly 40% of global employment, including in emerging markets like India, is exposed to AI.
Digital Divide: Urban areas are rapidly adopting AI, but rural India lags due to poor infrastructure, limited internet access, and low digital literacy. This disparity could widen socio-economic inequalities.
Ethical and Regulatory Concerns: Issues like data privacy, algorithmic bias, and surveillance require careful regulation. Recent papers highlight the need for a balanced regulatory approach.
Skill Gap: Despite producing millions of engineering graduates annually, only a small percentage are skilled in advanced technologies. Initiatives like the India AID at asets Platform a in to bridge this gap, but challenges remain.

India's Response and Future Roadmap
To maximize the benefits of AI and automation while minimizing risks, India is taking proactive steps:
Upskilling Workforce: Programs like Future Skills PRIME by Nasscomand Meit Y, and YUVAi for school students, are training professionals and youth in AI.

Policy Frameworks: The government is developing a robust AI ethics frame work and has established centers of excellence for AI research.

Public-Private Partnerships: Collaborations with tech giants and startups are driving innovation, with initiatives like the AI for India 2030 aiming to integrate AI for inclusive growth.

Looking ahead, India aims to use AI to achieve its vision of becoming a $5 trillion economy by 2025, focusing on inclusive growth and sustainable development.

Conclusion

In conclusion, Artificial Intelligence and Automation hold immense potential to transform India into a global technology leader. While they offer opportunities for economic growth, job creation, and social progress, they also present challenges like job displacement, ethical concerns, and the digital divide. By investing in education, infrastructure, and regulation, and drawing on recent research from authentic sources, India can navigate these challenges and harness AI for sustainable development.

It is imperative that we adopt a balanced approach—embracing innovation while ensuring that no one is left behind.

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The Impact of Artificial Intelligence on Consumer Rights and Intellectual Property Violations in the Digital Era

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Abstract:
Consumers belong to the weaker sections of society. The rights of the consumers need to be protected. "This is often referred to as the 'World of Information and Technology,' highlighting the era in which we live—one dominated by rapid advancements in information systems and technological innovation" Now, "This is referred to as the 'World of Artificial Intelligence. ' The protection of the basic rights of consumers has become challenging in the world, driven by Artificial Intelligence. Where a computer or a machine is used to perform a particular task that requires human intelligence like "learning, problem solving, language learning", it is called Artificial Intelligence. AI may give "personalised recommendations to the consumers, improve communication with the consumers through chatbots, and ensure financial security and fraud detection" as well. However, it may breach the data privacy of the consumers, biased algorithms may give wrong output. AI-enabled services may be helpful to companies to improve their profit, but it may cause various barriers regarding breach of data privacy, authenticity, and ethical dilemmas.

An Organisation, Consumer International, has a view that the use of AI may result in a "lack of transparency, accountability, manipulative practices, misleading consumers, discrimination, privacy violation and vulnerability in security system."

In India, Consumers' rights are protected by various laws, viz. The Protection of Consumers' Rights 2019, the Competition Act 2002, the Information Technology Act 2000, etc. However, in the era of Artificial Intelligence, the protection of the rights of consumers may become a challenge.

AI has the potential to violate intellectual property rights (IPR) in various ways. This paper explores both the benefits and risks of AI on consumer rights. It highlights how it can affect intellectual property protections. It also examines the legal implications of IPR violations caused by AI. The paper emphasizes the need for amendments in laws and legal frameworks to address the challenges caused by AI's involvement in creative and innovative processes.

Key Words:
Rights, Consumers, Digital Era, Artificial Intelligence, Data Privacy, Algorithms, Challenge, Information Technology.

Introduction

Mahatma Gandhi famously stated, "A customer is the most important visitor on our premises; he is not dependent on us, we are dependent on him. He is not an interruption in our work, he is the purpose of it. He is not an outsider of our business, he is part of it. We are not doing him a favor by serving him, he is doing us a favor by giving us the opportunity to do so." It is the responsibility of the service providers to satisfy consumers with their product or the services as the case may be. The consumers have basic rights viz. "right to safety, right to be informed, right to choose, right to heard and right to redressal" It also includes right to consumers education. However rights of consumers are violated in various ways viz., by "false and misleading advertisements, breach of warranty, unfair trade practices etc." Data breach is also a type of violation of the right to privacy, information, and education of the consumers.

In today's world, technology and AI play an important role. Data breaches can cause violations of the right to privacy of consumers. AI systems often use a lot of personal data to work properly, and if this data gets exposed or misused, it can violate people's right to privacy. This can lead to a loss of trust in digital services. It is important to have strong protection for personal data and ensure that privacy is respected.

What is Data Breach?

Data Breach consists of "accessing personal, confidential data unathorisedly. It may include consumers records, etc." Such data breaches may occur intentionally or unintentionally. Whenever the Service Providers do not adopt the standard method for data protection, the data becomes vulnerable and it may be breached by hackers. Such data is sold in the market for money. The data breach may result in huge financial loss, reputation challenges, etc. In such cases, the question of accountability may arise.

In the past, various companies were made liable for data breaches. Those companies were Bharat Pay, Domino's India[1], Angel One, Hathway, Sun Pharma, Hyundai Motors India, AIR India,[2] etc.

How does AI work? AI's ability to recognise Pattern

[1] Why is the Domino's India data breach unusual and What can you do about it?, moneycontrol.com.
[2] Saoumik Ghosh, The Biggest Data Breaches in India, csoonline.com.

Just like a human being, AI can recognize patterns. It has the ability of image recognization, even the text pattern recognization, Statistics pattern recognization. With this ability, it can easily predict the mood of a consumer and his purchase pattern. With this ability, it can manipulate the choices of the consumers as well.

What is the exact meaning of Pattern recognition?
“Pattern recognition is the ability of machines to identify patterns in data, and then use those patterns to make decisions or predictions using computer algorithms. It’s a vital component of modern artificial intelligence (AI) systems.”[3]

AI needs huge data for Pattern recognition
To get accurate output AI needs huge data. So, we can say that AI is Data Greedy. AI works on algorithms. Algorithms process data. Big data ensures correct predictions. AI technology examines the correlation between two different variables. Due to this feature it can easily correlate a consumer with his purchasing habits. With such features, Chatbots make suggestions. This feature of AI can easily manipulate consumers' preferences in purchasing as well. It can be called “Predictive analysis”.[4] The stakeholders first collect data from various platforms, including Open Data over the internet, and then the data is analyzed with the help of an AI Tool to get the result. However, the means by which data is collected may be ethical or unethical. Some times, where the means of data collection is unethical, it is a violation of the right to privacy of people. Such violations occur even without their knowledge. [5]
For the Generative Artificial Intelligence Model, vast data is needed, this data is collected even without consent of the original creator or the owner. It can be called copyright violation. However, it is very difficult to find such a type of violation. Such a type of violation was a challenge before the implementation of the Copyright Law. [6]

The ANI v. Open AI Case
The case was filed by Asian News International (ANI) against OpenAI for copyright infringement. It was the contention of ANI that Open AI has unathorizedly used ANI’s copyrighted material for developing the Open AI Model. It was contented by Open AI that, to develop Open AI it has used only publicly available data. It also took the defence that the Delhi High Court does not have jurisdiction to try this case as the AI Server is located in the USA. However, ANI contended that it is headquartered in the jurisdiction of the Delhi High Court. ANI has demanded 2 Crore damages and an injunction against Open AI to prevent them from further use of ANI’s material without permission. The issue before Hon’ble Delhi High Court is about fair use of copyright material up to what extent and even whether Open AI should have a license, even while using publicly available information. [7]
AI has the potential to violate copyrights and trademarks in several ways. For example, AI models can generate content that resembles copyrighted material, such as text, images, or music, without proper permission from the original creator. It results in copyright infringement. Similarly, AI systems might use or create content that unintentionally or deliberately infringes on trademarked logos, names, or brands. Since AI operates by learning from large data base, including potentially copyrighted or trademarked materials, this can create legal challenges around ownership and the protection of intellectual property.[8]

What is Copyright Violation?
When someone copies the material of others, i.e. of the original creator of literary or artistic work without his permission, it is Copyright Violation. Copyright Violation consists of unauthorised copying, distributing, performing, or displaying the material without the owner’s permission.[9]

Remedies for Copyright Violation
Whenever there is a right, there is a remedy. Where the copyright is violated, he has two types of remedies, viz. Civil and Criminal Remedy. Civil Remedies consist of injunction[10], claim for damages, [11]account for profit[12] etc. There are certain

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[3] What is Pattern Recognization? A Gentle Introduction, viso.ai.
[4] Ammir Hosseiin Jamarani, Big Data and Predictive Analytics: A systemtic Review of Application, linkspringer.com
[5] Jimna Jayan, A Comprehensive Guide to Ethical Data Collection and its importance, promptcloud.com.
[6] Adam Buick, Copyright and AI Training Data-Transparency to Rescue, Journal of Intellectual Property Law & Practice, Vol 20, Issue 3, March 2025, academic.oup.com.
[7] Harsh Gaur, ANI v. Open AI in Delhi H.C: Everything so far and all that is at stake, theleaflet.in.
[8] Gil Appel, Juliana Neelbaur and Devid A. Schweidel, Generative AI has an Intellectual Property Problem, hbr.org.
[9] Section 51, Copyright Act, 1957.
[10] An injunction order of the court compels a person to restrain from doing something or to do something.
[11] Damages is the monetary compensation awarded to a person who has suffered losses due to another person’s wrongful act or the negligence.
[12] Account for Profit is an equitable remedy, where court orders to repay the profit earned by the defendant by infringement.

other remedies that ensure complete justice, viz. Delivery of infringed goods, Anton Pillor [13]Order, Mareva Injunction.[14] The punishment for copyright infringement is imprisonment, which can range from a minimum of 6 months to a maximum of 3 years. Along with imprisonment, the infringer may also be liable to pay a fine that can range from Rs. 50,000 to Rs. 2,00,000. If the infringement is a second or subsequent offense, the court may impose a higher fine and longer imprisonment.[15]

AI-Generated Trademarks

AI-generated trademarks are the trademarks that are created by using Artificial Intelligence Algorithms. AI has the ability to generate logos, brand names, symbols, etc. A trademark consists of the logos of the company. A trademark becomes the identity of the company. The goodwill of the company attaches to the logo. Where the logos are similar to the registered trademark, it is trademark infringement.

AI works only on the data made available to it. If any logo is generated with the help of AI, the system shall first access the available data and then generate the logo or the symbol, which may be closely similar or deceptively similar to the already available trademark. It will, for example, change the color scheme or make a very small change. There is a possibility of infringement of available trademarks. In such a situation, it will become very difficult to determine if the trademark infringement is intentional or unintentional, and there will be the problem of accountability as well. The deceptively similar trademark generated by AI may cause confusion in the minds of the consumer regarding the actual owner of the brand. [16] However AI-generated logos can be protected by the Trademark Act 1999 only if it is sufficiently unique or sufficiently distinctive. [17] Even if a trademark is not registered, the owner can still protect it under common law through a passing off action, where they claim that the unauthorized use of a mark is misleading customers into believing that the goods or services are from the same source.[18]

Remedies for Trademark Violation

The trademark owner has two types of remedies in case of trademark violations, viz. Civil and Criminal Remedies. The owner can file a suit in the appropriate court for damages, an injunction to stop the infringing use, and an account of profits made from the infringement. In cases of counterfeiting, criminal penalties can be applied, including imprisonment and fines. Counterfeit goods can be seized, and the infringer can be penalized accordingly. The court may impose a penalty of up to Rs. 2 lakh and imprisonment for up to 3 years.[19]

International Scenario Regarding Intellectual Property Right Protection for AI-Generated Work

AI-generated work has become an international concern. The issue is regarding its ownership. To cope with those issues, various countries are adopting different means. Viz. The USA Copyright Office has not recognized AI-generated work to be eligible for copyright protection.[20] In Thalar v. USPTO, the US Court of Appeal held that an AI cannot be recognised as a person. European Patent Office recognises that only human beings can claim a patent, even though AI has been used in the process of invention. [21]The same has been decided by the U.K. as well. China can be seen as positive in granting copyright to AI generated work if a human being has guided the whole process of completion of work. If work is completely done by machine, it is not eligible for copyright protection. [22]In India Intellectual Property Laws, viz. the Copyright Act, 1957, copyright is granted to the original 'Author', explicitly the human being. [23] Under the Patent Act, 1970, the inventor is explicitly a human being. AI cannot be recognised as a human being. However, the person who supervises the invention and application of AI on the invention can be recognised as the inventor.

Suggestions

1. AI trademarks need to be carefully examined for potential conflicts with existing intellectual property. While AI can be an efficient tool for creating new trademarks, it also increases the risk of generating content that may infringe on

[13] An Anton Pillor is order of the court, where search and seizure is allowed, without prior warning, to prevent the defendant or the accused as the case may be from concealment or the destruction of the evidence.
[14] A Mareva Injunction is also called as "Freezing injunction" that prevents a defendant from disposing of the assets from the jurisdiction to ensure the plaintiff can enforce judgement, if they win the case.
15 Section 63, Copyright Act, 1957.
16 Vanshika Dabrival, Exploring the impact of Artificial Intelligence on Trade Mark and Copyright: Challenges and Opportunities, Indian Jounal of Integrated Research in Law, Vol IV, Issue III, ISSN 2583-0538, ijirl.com
17 Section 17 of the Trademark Act, 1999.
[18]Section 27 of the Trademark Act, 1999.
[19]Section 135 of Trade Mark Act 1999.
[20]Thaler v. Perlmutter, Case No. 1:22-cv-01564 (D.D.C.)., Federal Register, The Daily Journal of United States Government, federalregister.gov.
[21] Ryan N. Phelan, Patent Next, Can Artificial Intelligence (AI) can be an Inventor, patentnext.com.
[22] Rodl & Partner, Court Ruling in China: AI-generated images can be copyrighted, roedl.com.
[23] Section 2(d) of the Copyright Act, 1957.

established logos or brands. This requires stricter legal frameworks regarding AI model guidelines and a more careful review of AI-generated trademarks to prevent unintended violations of trademark laws.
2. To prevent copyright infringement by AI, the developer should ensure that he understands copyright laws, especially how they apply to works created or assisted by AI. This includes understanding what constitutes original works, derivative works, and fair use.
3. AI works on data. However, the data must be licensed. The developer must understand the legal implications of IPR violation. The firm guidelines regarding data licensing must be provided by the state.
4. Using AI should not be taken negatively. However, it is expected that even after using AI, it should ensure originality in work. Because for protection of IPR, it needs originality. Where originality is not ensured, it may lead to legal consequences.

Conclusion:
Artificial Intelligence (AI) is a powerful tool for enhancing business decisions and ensuring operational efficiency. AI relies on vast amounts of data to make accurate predictions. The quality and volume of data are important for AI's effectiveness in enabling businesses to make informed decisions. However, the ethical sourcing of this data is essential. Using unethical data sources can lead to violations of consumer privacy, as individuals may not be aware that their personal information is being exploited by AI developers or service providers for financial gain. This causes violation of the right to privacy of consumer but also violates their right to information. Service providers must maintain transparency with consumers regarding the use of their data.
In many countries, AI-generated work is not recognized as intellectual property if it is created without human intervention. However, it is important to recognize that using AI effectively and supervising the work is also a form of human creativity, which should be protected just as intellectual property. If current IP laws don't cover this, they should be amended. The judiciary must be more careful when handling IP violation cases involving AI models, ensuring they protect the rights of the original creators. There should be a balance between fair use and protecting the IP rights of the original creator.

Intellectual Property as a Tool for Achieving the Sustainable Development Goals (SDGs) Indian perspective

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Abstract
The 2030 Agenda for Sustainable Development emphasizes the need for global cooperation to achieve 17 Sustainable Development Goals (SDGs), covering areas such as poverty eradication, environmental sustainability, health, education, and economic growth. Intellectual Property Rights (IPR), often perceived as mechanisms to protect individual innovations, can also be powerful tools for promoting sustainable development. This paper explores how IPR can contribute to achieving the SDGs by fostering innovation, enhancing technology transfer, promoting access to medicines, supporting environmentally sustainable practices, and preserving cultural heritage. While challenges exist, including the balancing of exclusivity and public access, the strategic use of IPR can align with the SDGs, promoting inclusive, equitable, and sustainable growth. This paper concludes with recommendations for leveraging IPR to enhance the effectiveness of global sustainable development efforts.

Introduction
The Sustainable Development Goals (SDGs), adopted by all United Nations Member States in 2015, aim to address the world's most pressing challenges by 2030. The SDGs cover a broad spectrum of issues, from alleviating poverty and enhancing global health to fostering sustainable consumption and production patterns.At the same time, Intellectual Property Rights (IPR), including patents, trademarks, copyrights, and trade secrets, play a crucial role in safeguarding innovation and creativity. Often seen as a legal tool to ensure economic benefits for creators and businesses, IPR can also be strategically leveraged to support the global achievement of the SDGs.
India's economic growth is accompanied by challenges related to sustainable development. As a member of the **United Nations**, India has committed to achieving the **Sustainable Development Goals (SDGs)** by 2030. However, achieving these goals requires innovative solutions in sectors such as healthcare, agriculture, energy, and infrastructure. Intellectual Property Rights (IPR) can play a crucial role in fostering innovation to solve these problems while simultaneously aligning with the principles of sustainable development.
India has made significant strides in strengthening its IPR system through legislative reforms, such as the **Patents Act (1970)** and the **Intellectual Property Rights Policy (2016)**. These reforms aim to strike a balance between protecting intellectual property and facilitating knowledge dissemination for inclusive development. However, India's unique socio-economic landscape necessitates a nuanced application of IPR to ensure that it serves not just economic interests, but also social, environmental, and cultural imperatives in line with the SDGs.
This paper examines the Indian perspective on how IPR can be harnessed as a tool to achieve the SDGs, focusing on **healthcare (SDG 3)**, **clean energy (SDG 7)**, **responsible consumption (SDG 12)**, **agriculture (SDG 15)**, and **innovation (SDG 9)**.

1. Intellectual Property and Sustainable Development: An Overview
IPR are legal protections granted to creators of new inventions, designs, and artistic works. By granting exclusive rights to use and commercialize their creations, IPR aims to encourage innovation and creativity. However, the role of IPR extends beyond economic incentives. In recent years, there has been increasing recognition of the importance of IPR in advancing the SDGs, as they provide a framework that can incentivize innovation in critical areas such as healthcare, clean energy, and sustainable agriculture.
In the context of the SDGs, IPR can provide the necessary protection for innovations that address global challenges while encouraging collaboration and the equitable sharing of knowledge and technologies.

2. IPR and SDG 3: Good Health and Well-Being
One of the most significant challenges facing the world today is ensuring access to essential medicines, healthcare, and health technologies. The role of IPR in the pharmaceutical industry, particularly through patents, is crucial in this regard. Patents incentivize investment in research and development (R&D), enabling pharmaceutical companies to bring new, life-saving drugs and medical technologies to market.
However, patents also raise concerns about affordability and access. In the case of essential medicines, patents can create monopolies that limit access in low-income countries. To reconcile these concerns, international mechanisms like the **TRIPS Agreement** (Trade-Related Aspects of Intellectual Property Rights) have allowed for exceptions, such as **compulsory licensing**, which permits governments to override patents in emergency situations or to improve access to vital medicines.
The balance between protecting innovation and ensuring access to healthcare is critical for achieving SDG 3, and IPR can be a key tool in incentivizing global health innovation while addressing affordability and access concerns. Innovative models such as **patent pools** (e.g., the Medicines Patent Pool) have also emerged as ways to share patents and technologies related to medicines, making it easier for developing countries to access the latest treatments.India faces

significant healthcare challenges, including limited access to affordable medicines, widespread malnutrition, and a high burden of diseases such as tuberculosis, malaria, and HIV/AIDS. IPR plays a crucial role in the Indian healthcare sector, where **patents** are used to protect pharmaceutical innovations. Patents provide incentives for the development of new drugs, vaccines, and medical technologies that are essential for improving public health.

However, the challenge in India lies in balancing patent protection with the need for **affordable access to medicines**. The **TRIPS Agreement** (Trade-Related Aspects of Intellectual Property Rights), to which India is a signatory, mandates patent protection but also allows countries to issue **compulsory licenses** in cases where the public's right to access essential medicines is at risk. India has made use of compulsory licensing in the past, most notably in the **Novartis vs. Union of India** case, where the Supreme Court upheld the denial of a patent for **Glivec**, a cancer drug, arguing that it was not innovative enough.

This case highlighted the tension between innovation protection and public health in India. By adopting provisions like **Section 3(d)** of the Patents Act, India has created a framework that protects access to medicines, while still encouraging innovation. Moreover, initiatives like the **National Intellectual Property Rights Policy (2016)** promote public health and social welfare while using IPR to foster research and innovation in the health sector.

India's approach to IPR in healthcare can serve as a model for other developing countries in balancing **health equity** and **IPR protection**, thereby contributing to SDG 3.

3. IPR and SDG 7: Affordable and Clean Energy

The transition to clean and renewable energy is central to sustainable development. Technologies like solar panels, wind turbines, and energy-efficient devices have the potential to revolutionize global energy systems. Intellectual property plays an essential role in driving innovation in this sector. Patent systems provide incentives for the development of new technologies that reduce greenhouse gas emissions and promote energy efficiency.

However, there are challenges in ensuring that these innovations reach developing countries where clean energy technologies are most needed. IPR can facilitate technology transfer by ensuring that innovations are shared in a manner that balances the interests of both innovators and users. For example, in the context of **green technologies**, licensing agreements can be structured to allow access to sustainable solutions while ensuring that the original creators receive fair compensation for their work.

Furthermore, international initiatives such as the **Clean Energy Patent Growth Index** have demonstrated the potential of IPR in driving innovation in renewable energy sectors. Governments, industries, and international organizations can collaborate to create frameworks that allow for the sharing of clean energy technologies while respecting IPR.

India is heavily dependent on fossil fuels for energy production, and one of the key challenges is transitioning to clean energy. The **Clean Energy** sector is a prime area where IPR can drive innovation and help India meet its SDG 7 commitments. Patents and licensing agreements can incentivize the development of **renewable energy technologies** such as solar panels, wind turbines, and energy storage systems.

However, India faces challenges in the adoption of these technologies due to high upfront costs and limited technological capabilities. By leveraging IPR strategically, India can foster collaboration with global players in clean energy, thus enabling access to advanced technologies. The **National Solar Mission** and the **Make in India** initiative are examples of India's efforts to create an environment conducive to the development of green technologies.

Additionally, India can explore **technology transfer agreements** and the pooling of patents in areas like **solar energy**, which would facilitate broader access to green technologies while protecting the intellectual property of innovators. India's growing **solar power** sector, which has seen substantial growth through initiatives like the **International Solar Alliance (ISA)**, shows the potential of combining IPR with international collaboration to foster green energy solutions.

4. IPR and SDG 12: Responsible Consumption and Production

Sustainable production and consumption are critical to minimizing environmental impacts and achieving long-term sustainability. IPR can encourage the development of eco-friendly technologies and processes that reduce waste, energy consumption, and pollution. Innovations in waste management, sustainable agriculture, and circular economy practices can be protected through patents, trademarks, and copyrights.

For instance, companies developing biodegradable packaging or energy-efficient manufacturing processes rely on IPR to protect their innovations and ensure that their environmentally friendly products and services are not easily replicated. By providing exclusive rights, IPR helps create incentives for businesses to adopt sustainable practices and technologies, which can lead to broader adoption in the market.

In addition, **green certifications** and **geographical indications** (GIs) are examples of IPR mechanisms that can promote environmentally responsible products and enhance the global market for sustainable goods. These mechanisms can help consumers make informed choices while promoting sustainable production practices among businesses.

The SDG related to responsible consumption and production (SDG 12) is particularly relevant to India, given the country's growing population and high levels of poverty. India's industrial sector has been a significant contributor to environmental degradation, and there is an urgent need for sustainable manufacturing practices and eco-friendly products. IPR can play a role by promoting innovations in areas such as **waste management**, **biodegradable packaging**, and **resource-efficient manufacturing processes**.

India's robust IPR system can protect innovations in sustainable production methods. For example, **green patents** in the field of **waste-to-energy** technologies can be used to incentivize eco-friendly solutions that promote the recycling of waste materials. Companies that develop innovative technologies for **plastic waste reduction** or **water conservation** can use IPR to protect their products and incentivize further innovation.

Furthermore, **trademarks** and **certification marks** can be employed to promote eco-friendly consumer choices. The use of **Geographical Indications (GI)** in India to protect local products like **Darjeeling tea** and **Kashmir saffron** is an example of how IPR can be harnessed for promoting sustainable production while maintaining the integrity and uniqueness of local resources.

5. IPR and SDG 15: Life on Land

IPR can contribute to the protection of biodiversity and sustainable land management. Innovations in agriculture, such as drought-resistant crops or sustainable farming practices, can be patented to incentivize the development of solutions to address food security challenges. However, the extension of IPR to plant varieties and genetic resources has been controversial, particularly when it involves the biopiracy of indigenous plant knowledge.

To support SDG 15, there must be careful consideration of how IPR is applied to agricultural innovations. **Traditional knowledge** (TK) and **genetic resources** must be protected to ensure that the benefits derived from innovations in agriculture are shared equitably with local and indigenous communities.

International frameworks like the **Convention on Biological Diversity (CBD)** and the **Nagoya Protocol** seek to regulate access to genetic resources and ensure fair benefit-sharing. In this context, IPR can be a tool for ensuring that agricultural innovations are used responsibly and that the contributions of indigenous communities are recognized and protected. Agriculture plays a central role in India’s economy, but the sector faces challenges related to climate change, land degradation, and food security. Intellectual Property, particularly **plant variety protection** and **biotechnology patents**, can support sustainable agricultural practices by incentivizing innovation in crop protection, drought-resistant plants, and precision farming.

The **Protection of Plant Varieties and Farmers' Rights Act (2001)** allows farmers to register their new varieties, ensuring that they receive recognition and protection for their innovations. However, there are concerns regarding **biopiracy**, where companies patent indigenous plant varieties and use traditional knowledge without compensating the communities who developed them.

India is committed to addressing these issues by aligning its IPR framework with international agreements like the **Nagoya Protocol**, which ensures fair benefit-sharing from the use of genetic resources. By combining IPR with frameworks for **traditional knowledge protection**, India can safeguard biodiversity while supporting sustainable agricultural practices that contribute to SDG 15.

6. Challenges and Considerations in Using IPR for SDGs

While IPR can be a tool for achieving the SDGs, several challenges must be addressed to fully realize its potential:

- **Access vs. Innovation**: The exclusivity granted by IPR can limit access to essential technologies, particularly in low-income countries. Striking a balance between incentivizing innovation and ensuring access to knowledge and technologies is crucial.
- **Global Inequities**: The ability to benefit from IPR is often limited by geographical, economic, and technological inequalities. Developing countries may not have the resources to access patented technologies or to create innovations of their own.
- **Public Domain**: For the SDGs to be achieved, knowledge and technology must be accessible to all. The expansion of the public domain, especially in critical areas such as climate change and healthcare, will be important for facilitating broad-based innovation. India’s growth is closely linked to innovation, particularly in sectors like information technology, telecommunications, and digital infrastructure. IPR fosters innovation by granting exclusive rights to inventors and creators, motivating further investment in research and development. India’s **IT sector** and **startup ecosystem** are prime examples where IPR plays a role in supporting the growth of new technologies.

The **Indian Patent Office** has been working to streamline the patent application process, and initiatives like **Startup India** offer an environment conducive to technological innovation. However, India's challenge lies in **equitable access to IPR**—ensuring that small and medium-sized enterprises (SMEs) and rural innovators can also benefit from IP protections.

To achieve SDG 9, India needs to create mechanisms that allow for the broader dissemination of knowledge while ensuring that IPR incentivizes inclusive innovation. Open-source software, patent pools, and **public-private partnerships** can help bridge this gap by fostering collaboration across sectors while protecting intellectual property.

7. Conclusion

Intellectual Property Rights have the potential to be a powerful tool for achieving the Sustainable Development Goals. By fostering innovation and ensuring that creators and innovators are incentivized, IPR can drive advancements in healthcare, clean energy, sustainable agriculture, and environmental protection. However, to fully realize the potential of IPR in advancing the SDGs, it is essential to address issues of access, equity, and knowledge sharing. Governments, businesses, and international organizations must collaborate to create frameworks that balance the protection of intellectual property with the global need for sustainable development.

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 ISBN No- 978-93-342-5395-5

Fintech Fiasco: How Paytm Lost Its Edge in Digital Payments

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Abstract
This research paper is all about "Identifying the factors that affect behavioural intention to use Paytm". The main aim of this research paper is to find out the factor that affect behavioural intention to use Paytm by consumers. This research paper starts with the introduction of the Paytm, where it explains the profile of Paytm in brief, it is history, Growth of the Paytm, competitors of Paytm in e-commerce industry. Further, major source of revenue, high growth of Paytm after demonetization are explained in detail. Paytm has become the preferred payment choice amongst consumers for in store Payment especially in India because of its perceived ease of use. Many consumers feel secure putting financial information on Paytm. The process of Paytm is very clean and understandable. By using Paytm work become easier, and it will improve the quality of consumers' life. Paytm is the most popular mobile payment app among android, smartphone owner in urban India. Mobile wallet is most important tools to engage with the customers by marketers and digital business. It gives introspection to the business building block of the research paper, with the research paper progress.
KEYWORDS: fintech, digitalization, block chain

CHAPTER: 1 INTRODUCTION

1.1 INRTRODUCTION OF A COMPANY

Paytm is an Indian e-commerce payment system and digital wallet company. It was founded by Vijay Shekhar Sharma in August 2010 and is based out of Noida, India. Paytm is available in 11 Indian language and offers online use-cases like mobile recharge, utility bill payments, travel, movie, and event bookings as well as in-store payments at grocery store, fruits and vegetable shops, restaurants, parking, tolls, pharmacies, and education institution with the Paytm QR (Quick Response) code. Paytm is currently valued at $16 billion.

DESCRIPTION

Developed by	Vijay Shekhar Sharma
Owned by	One 97 Communications
Country	India
City	Noida, Uttar Pradesh
Year	2010
Area Served	Worldwide
Industry type	E-Commerce
Visitors	99.1% in India
Users	350 million
Services	Payment Systems Digital Wallet Mobile Payment Banking Online Shopping
Web Address	www.paytm.com

1.1.1 HISTORY

Paytm was founded in August 2010 with an initial investment of $2 million by its founder Vijay Shekhar Sharma. It started off as a prepaid mobile and DTH (Direct to Home) recharge platform, and later added data card, post-paid mobile and landline bill payments in 2013.
By January 2014, the company launched the Paytm Wallet, and the Indian Railways and Uber added it as a payment option. It launched into mobile commerce with online deals and bus ticketing. In 2015, it unveiled more use-cases like education fees, metro recharge electricity, gas, and water bill payments. It also started powering the payment gateway for Indian Railways.
In 2026, Paytm launched movies, events and amusement parks ticketing as well as flight ticket bookings and Paytm QR (Quick Response). Later that year, it launched rail booking and gift cards.
Paytm's registered user base grew from 11.8 million in August 2014 to 104 million in August 205. Its travel business crossed $500 million annualized GMV (Gross Merchant Value) run rate, while booking 2 million tickets per month.
In 2017, Paytm became India's first payment app to cross over 100 million app downloads. The same year, it launched Paytm Gold, a product that allowed users to buy as little as rs.1 of pure gold online. It also launched the Paytm payment Bank and 'Inbox', a messaging platform with in-chat payments among other products. By 2018, it stared allowing merchant to accept Paytm, UPI (Unified Payment Interface) and card payment directly into their bank accounts 0% charge. It also launched the payment for Business app, allowing merchant to track their payment and day to day settlement instantly this led its merchant base to grow to more than 7 million by March 2018.

The company launched two new wealth management products- Paytm Gold Savings plan and Gold Gifting to simplify ling-term savings. It launched into gaming and investment, partnering with A GTECH to launch a mobile games platform Gamepad, and setting up Paytm money with an investment of Rs.9 Crore to bring investment and wealth management products for the Indians. Recently PAYTM has launched Paytm money for mutual funds and SIP (Systematic Investment Plans).
In March 2018, Paytm Money was setup with an investment of Rs.9 crore to bring investment and wealth management products for Indians.
In March 2019, Paytm launched a subscription-based loyalty program called Paytm First. In May 2019, Paytm partnered with Citibank to launch Paytm First credit card.
In July 2020, Tata Starbucks partnered with Paytm allowing its customers to order food online during a coronavirus (Covid-19) pandemic.

1.1.1 GROWTH OF PAYTM

Paytm expects to continue to rapid growth it experienced in the 2019 financial year for the current year 2020 financial year. The online payment services totalled $50 billion GTV in the 2019 financial year and aim to times this figure by two again by next March. Payment business Paytm expects to reach a gross transaction value of $150 billion (Rs. 9.98 lakh crore) by March 2020 and aim to double seller base in the same time frame.
The business facilitated around 5.5 billion transactions in the previous financial year and aim to increase this total by expanding from its current main user base in metros to Tier 1 and Tier 2 cities to gain more customers. Paytm said that it has witnessed a tremendous increase in adoption of digital payments in tier2 and tier 3 cities that constitute 50% of its total user's base. Surat, Durgapur, Rajkot, Imphal, Rohtak, Panipat, Mangalore, Ranchi, Pondicherry, Rajahmundry, Jodhpur, Karnal, Madurai ad **FINANCIAL INFORMATION**

1.1.2 Market share

- India's homegrown financial services platform Paytm has emerged as the leader in merchant payments with a 50 % market share, according to the findings of RedSeer consulting. According to the research paper, Paytm with its long legacy has a strong presence in Bharat tier 3 & below with over 16 Mn merchant on its platform maintains a huge lead in wallet payments.
- RedSeer according to its finding said that Paytm currently is the market leader on the payment to merchant (P2M) side with 50% market share. Its P2M consumers also shown the highest satisfaction leading with an NPS of 42%. Paytm conviction of continuing to improve its services and merchant experience as it plans to rapidly grow its merchant base.

1.1.3 Funding

- In 2007, Paytm's parent One97 communication ltd. got its first institutional investor, venture capital firm SAIF partners.
- In March 2015, Paytm received its funding from Chinese e-commerce company Alibaba Group based in Hangzhou, China, afterAnt Financial Services Group affiliate, took 25% stake in One97 as part of a strategic agreement. Soon after, it received backing from Ratan Tata, the MD of Tata sons.

1.2.3 Major source of Revenue

- Paytm revenue generated from multiple sources. This includes:
- Interest received from escrow account maintained in a nationalized bank.
- Advertisement on its websites.
- Commission from utility payments and recharge.
- Commission of 1% for transferring money from merchant e-wallet to their bank accounts.
- The total revenue during 2015-16 was 3360 million which was higher than 2100 million. However, in 2015-16 it showed a loss of 3370 million. 1.2.4 Major Investor in Paytm.

1.2.4 Major Investor in PAYTM

- Ant financial knows as Alipay,
- Alibaba groups,
- SAIF partners,
- Silicon Valley Bank and
- Sapphire venture
- In March 2015, Paytm received an investment of US$ 575 million from Alibaba group a famous Chinese e-commerce company. Similarly Indian industrialist Ratan Tata too made a huge personal investment in it. Furthermore, Paytm has also started working on Alibaba financial services model which help seller and consumer to borrow small loan on their debit cards from the ecommerce firm.

LITERATURE REVIEW

- **Dr. T. Venkatesan (2018**) in the article titled" usage of Paytm", Conclude that the usage of Paytm is only at a satisfactory level. The customer face problems in ease of use, security issues and slow Paytm server in the usage of Paytm. Paytm can establish a separate wing with trained staff to address the issues and problems related to Paytm services. The Paytm may initiate necessary action for period's updating, up gradation and maintenance of both hardware and software and to prevent case of slow server and complete breakdown of system by having back storages.

- **Vijay Shekhar Sharma** Oct 23,208 China's Alibaba and Japan's Softbank – backed Paytm Mall is stepping up focus on categories like grocery and fashion, which can increase repeat customer transaction as it looks to compete with Walmart-backed Flipkart and Amazon India, which control over 80% of the online retail market. Paytm Mall wants to differentiate itself, with online to offline (O2O) push to deliver 50% of the orders in 24 hours from 33% right now.

- **Kiran Vaireddy**, Paytm, December 12, 2018, said, "Paytm has become the preferred payment choice amongst customers for in- store payments in India, Paytm is accepted at the largest variety of stores ranging from large brand outlet to online platforms as well as small retailers across India. With 'Paytm Cashback Days', we celebrate our customers choosing Paytm as their preferred mode for payments at offline or online merchants by rewarding them with the best deals cashback of the year. This will be a significant part of our efforts to push the adaption of mobile payments in the country & also help our Merchant partners significantly."
- **ZilvinasBareisis**, (2012) study revealed on Banks should think twice before going down the path of launching their own branded independent wallets. For some, it might make sense, but many others will likely be better off focusing on making their payment credentials available and top of wallet in the wallets already out in the market, as well as enhancing and extending their mobile banking platform with value-added services, including payments.

RESEARCH METHODOLOGY
3.1 Problem Statement:

- Digitalization is increasing in our country, and our government is encouraging a cashless society. Main aim behind demonetization was to control the black money in the economy and anti-money laundering, to increase E-transaction in the country, large number of customers made online shopping while cash on Delivery option is available. The nationwide lockdown has benefited digital payment platforms as 42% Indians have increased the use of digital means for payment during covid-19.
- **3.2 Scope of the Study:**
- The study is confined to the user of Paytm. The respondents are the customers of these app, and the number of respondents total of 220. The primary data is collected through questionnaire. Secondary data is collected from various books and website. The study undertaken to find out the factors that affect behavioural intention to use Paytm by consumers.

3.3 Objectives of the Study:

- To find out the factors that affect behavioural intention to use Paytm by consumers.
- To get information about the usefulness of Paytm used by Users.
- To identify the priority factors that affect consumers for using Paytm.
- To get the idea about consumers behaviour intention towards Paytm.
- To measure the customers satisfaction level of Paytm services.
- To figure out the opinion of consumers regarding the safety of their personal information on Paytm.

3.4 Research Design:
3.4.1 Type of Design
The research design used for the study is Descriptive Research Design. In this Survey, Descriptive Research is used as a survey technique because, to determine or collect the opinion of specified population regarding Paytm services.
3.4.2 Sample Design
Under this research population would be the people (Mumbai Metropolitan Region city people) who are aware and affect behavioural intention to use Paytm services. Total sample size 220 people who are already using Paytm services or who are interested and aware about this service. Sample area would have been approximate area of Mumbai Metropolitan Region city and I would collect data from Paytm services users.

3.5 Data Collection:
3.5.1Primary Data:

- A structured undisguised questionnaire is used as instrument for primary data collection.

3.5.2 Secondary Data:

- Secondary Data is collected from internet.

3.6 Tools for Analysis:

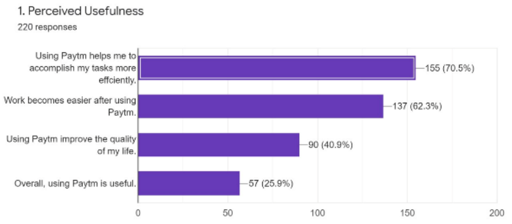
- SPSS and MS Excel are tools used this analysis

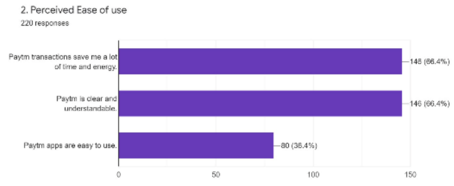
3.7 Limitation of Study:

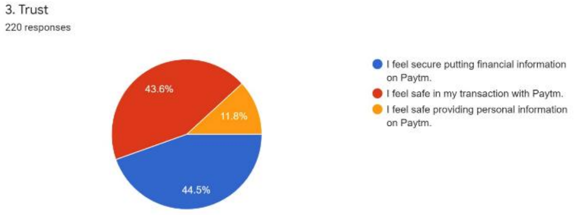
- **Quality of Response:** The result of this research depends on the quality of responses received.

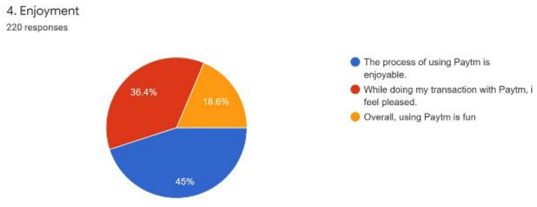
- **Denied giving personal data:** Most of the people sometimes denied to give their personal data such as contact number and income.
- **Sample Unit:** The survey is limited to Mumbai Metropolitan Regioncity and a sample size of 100 respondents therefor the finding of this research cannot be generalized

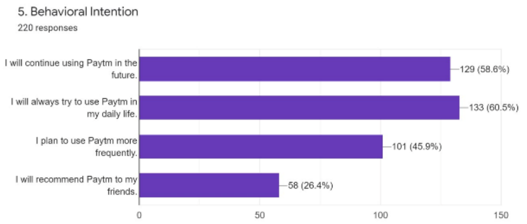
DATA ANALYSIS

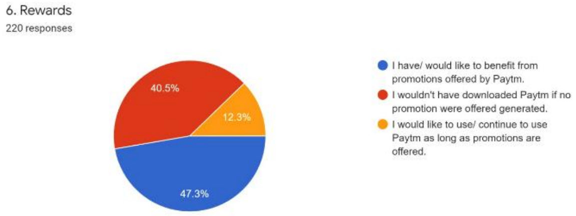


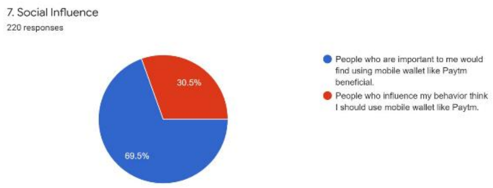












FINDINGS

- 71% Users perceived that Paytm helps them to accomplish their tasks more efficiently.
- 26% Paytm consumers accept that Overall using Paytm is useful in terms of transaction or Security purpose.
- 66% Consumers attracted towards Mobile wallet like Paytm because transaction through Paytm save lots of time and energy.
- Paytm app is easy and understandable that's why users are more preferred Paytm.
- 36% Users perceived that Paytm app is ease of use.
- 45% consumers feel that it is secure putting financial information on Paytm and as per trust issue, providing personal information on Paytm is also secure because Paytm uses many trusted software for their security purpose.
- 26% consumers also recommended their friends to use Mobile wallet more frequently.
- Promotion and offer are main factors that affect consumer's behavioural intention to use Paytm in their daily life. 48% users accept that they like offer and benefit provided by Paytm.

CONCLUSION

- Paytm save customers time for various transactions. The most important part is that it is very easy to use. It is most convenient, and it is trustworthy. The respondents are all neutral about the services rendered by Paytm. It is one of the useful apps than can really come in "HANDY FOR CUSTOMERS". It should develop the quality of services. The awareness about the Paytm will promote it to the next level.
- Paytm support their customers to transfer their payments with the usage of their mobile phones in easiest way. Paytm is a good app to download due to convenient and transaction save lots of time and energy. Consumers feel secure putting financial information on Paytm.

- It is a good digital wallet application to download because of it is wide network of partners and these features make it convenient while travelling. From the data analysis it has been observed that overall, using Paytm is fun and enjoyable, ease to us, convenient, clean, and understandable. The factors significantly affect the satisfactory level and use of Paytm application.
- Majority of the respondent accept that Paytm as an alternative to the cash & card transaction and it is play an important role in supporting growth towards Digital Indi. Flexible services provided by the Paytm are satisfactory and it is a solution to the Indian demonetization.

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Marketing Of Libraries in The Digital Age: A Need of The Hour

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Abstract
In the modern world, libraries have a hard time keeping users because of competition from other libraries. Due to the rapid expansion of various forms of digital technology, the means through which people obtain information and services has profoundly changed. Therefore, libraries need to reposition themselves in the market. Online services, as well as other digital services and products, are gradually changing the old promotional paradigm. This paper highlights the marketing of libraries in the Indian context, which helps to understand the impact of librarians on public relations and how libraries can advertise their services, collections, and librarians. The inquiry focuses on the various forms of marketing, the role of modern technological tools, and the initiatives that promote the development and enhancement of the libraries' images in the digital environment. Then this paper analyzes international approaches to library marketing and reports of successful promotional activities of libraries with advice for future oriented change.

Introduction

Never before were they perceived as anything other than knowledge sources that use to provide access to books, journals and other academic materials. Nonetheless, in accordance with digital technologies, everything changed and continues to change, often beyond recognition. The Search Engines, eBooks, Online Databases, and Open Access Journals have diminished the dependency on the physical structures to such an extent that people have started to depend on the libraries less and less. It is clear that with reduced relevance in the society libraries right now need to refrain from being passive and rather try to attract the people through modern marketing techniques.
The case with Indian libraries is, however, worse considering the financial constraints, infrastructure limitations, and lack of perception about the libraries beyond book lending. To make any relevancy whatsoever, the libraries have to start promoting themselves, utilizing the digital space, and interact with the clients in the unique manner. This paper focuses on what marketing approaches ought to be undertaken by libraries in this contemporary period and what is the best way to undertake them will assist in increasing the reach and impact of libraries. And also, provide an analysis of the different libraries of the world that have adopted marketing strategies and what Indian libraries can learn from them

The Beneficial Aspects of Marketing for Libraries

1. The Rise of Competition
The emergence of new online information sources like Google Scholar, ResearchGate, and other online repositories has decreased the reliance of users on the traditional libraries. Users can now easily find free e-books, online courses, and audiobooks, posing a significant threat to public libraries. Today, public libraries compete with online learning providers like Coursera, Udemy, and Khan Academy which makes it absolutely necessary for the libraries to market themselves effectively.
2. Changing Modes of Serving Customers
Particularly users of the younger age brackets are more exposed to digital content consumption. The need for immediate information, personalized services, and engaging content is the new order whereby users expect libraries to shift from their traditional methods of service delivery. Libraries need to utilize analytics to understand the needs of the users and provide services that are tailored to the same, similar to what commercial libraries offer.
3. Financial Limitations
Many libraries have budgetary restrictions that compel them to rationalize their value to the funds' providers. Marketing allows stakeholders to understand how relevant these libraries are and therefore, enables which helps to fetch useful monetary support. Research indicates that marketing libraries tend to be popular and more successful with receiving funds and grants.
4. Cognizance and Interaction
While some libraries house incredible and one of a kind resources, the vast majority contend with low user participation. Libraries are assisted by marketing efforts in promoting their services, special collections, digital services, events and many more to a wider audience. Research suggests that libraries that have good engagement practices can achieve user participation by as much as thirty to forty percent.

Marketing Plans of the Libraries

Any library looking to promote their services can implement the following marketing plans to better capture their audience:

1. Social Media Marketing

Major social media platforms like Facebook, Twitter, Instagram, and Linkedin provide a great avenue for libraries to market and sell to users. They can use these social media channels to do the following:
• Uploads of new book services, research materials, and Special Collection items.
• Advertising workshops, webinars and reading sessions.
• Engaging users through polls, quizzes, live sessions, etc.
• Working with known influencers who are active scholars and authors.

2. Content Marketing

Similarly, libraries can market and advertise by tailoring content to their audience such as:
• Blogs on research and written documents as well as digital literacy.
• How to use a database and citation management tool video tutorials.
• Podcasts with interviews with an author, librarian, and scholar.

3. Email Marketing

Regular newsletters can keep users updated about:
• New acquisitions and promoted books.
• Library events and training sessions.
• Research grants and scholarships.
• Special promotions or free access to premium materials.

4. Community Engagement and Partnerships

Libraries may partner with schools, universities, research centers, and local bodies to:
• Coordinate literacy activities and digital literacy workshops.
• Carry out outreach programs for poor communities.
• Collaborate with publishers and writers for book releases and author meetups.
• Offer internship and volunteer opportunities to students.

5. Personalization and User Experience Enhancement

Libraries can enhance user engagement through:
• Personalized book recommendations based on borrowing history.
• Online book clubs and discussion forums.
• AI-powered chatbots for instant research assistance.
• Gamification features such as reading challenges and leaderboards.

Digital Marketing Tools for Libraries

1. Library Websites

An effective, user-friendly library website must offer:
• Online catalogs and search capabilities.
• Digital repositories and open-access materials.
• Virtual help desks and live chat support.
• AI-driven search assistants for better navigation.

2. Online Catalogs and Databases

Granting remote access to catalogs and databases enables users to:
• Browse and book online.
• Access research papers and e-journals.
• Enjoy inter-library loan services.

3. Social Media Analytics

Through the analysis of engagement metrics on social media, libraries can:
• Discover user preferences and customize content accordingly.
• Track campaign effectiveness.
• Enhance outreach efforts.

4. Search Engine Optimization (SEO)

Search engine optimization of web content guarantees improved search engine listing. Libraries can leverage:
• Relevant keywords to enhance search rankings.
• Metadata tagging of digital collections.
• Structured data to improve discoverability.

Conclusion

Marketing libraries in the digital age is not only a choice but a compulsion. Libraries have to implement contemporary marketing strategies in order to vie with digital substitutes, connect users positively, and prove their applicability. By taking advantage of digital technologies, social media, content marketing, and collaborative partnerships, libraries can maximize their exposure and service coverage. Indian libraries, specifically, need to keep up with national plans and implement creative strategies to be meaningful in the information age. The research in future should be on AI-based marketing in libraries, augmented reality in library experiences, and blockchain-based applications for security of library transactions.

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Digital Piracy and Copyright Enforcement in India: Emerging Challenges in the OTT and Streaming Era

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Abstract
The advent of Over-the-Top (OTT) platforms and the proliferation of digital content have revolutionized the entertainment industry in India. However, these technological advancements have also given rise to unprecedented levels of digital piracy. Despite having a legal framework in place under the Copyright Act, 1957, and the Information Technology Act, 2000, India continues to grapple with the effective enforcement of copyright laws in the digital space. This paper examines the intersection of copyright law, digital technology, and streaming platforms, analysing the legal, technical, and enforcement challenges India faces. It also explores judicial responses, industry initiatives, and recommends reforms to strengthen copyright enforcement in the digital era.

Keywords: Digital piracy, OTT platforms, copyright law, copyright infringement, Information Technology Act, 2000

Research Questions

1. What are the primary legal and institutional mechanisms in place for addressing digital piracy in India?
2. How effective are the current laws in dealing with piracy in the context of OTT platforms and streaming services?
3. What are the key enforcement and technological challenges faced by stakeholders in combating digital piracy?
4. How have Indian courts and regulators responded to the growing issue of online copyright infringement?
5. What policy reforms and global best practices can be adopted to strengthen India's copyright enforcement regime in the digital era?

1. Introduction

The digital revolution has dramatically altered the way content is created, distributed, and consumed in India. OTT platforms such as Netflix, Amazon Prime, Hotstar, and others have emerged as dominant players in the entertainment sector. While these platforms offer convenient access to a wide array of content, they also face the serious threat of digital piracy. Piracy involves the unauthorized reproduction, distribution, or exhibition of copyrighted content, often via torrent websites, illegal streaming services, or file-sharing networks. The proliferation of smartphones and cheap data has only exacerbated this issue in India.

Despite the presence of robust legislation, such as the Copyright Act, 1957 and the Information Technology Act, 2000, enforcement remains a significant challenge. This paper seeks to delve into the systemic issues that plague copyright enforcement in India in the context of the streaming era and explores both the judicial and industry-led responses to combat this growing menace.

2. Legal Framework Governing Copyright in India

India's copyright regime is primarily governed by the **Copyright Act, 1957,** which was substantially amended in 2012 to bring it in line with the **WIPO Internet Treaties.** The Act provides exclusive rights to authors and copyright holders, including the rights of reproduction, distribution, public performance, and communication to the public.

Section 14 of the Act defines the scope of copyright, while Sections 51 and 63 deal with infringement and penalties, respectively. In the digital context, Section 66 of the **Information Technology Act, 2000** and provisions under the**Bharatiya Nyaya Sanhita, 2023,** also become relevant, especially when dealing with cyber offences and hacking.

3. OTT Platforms and the Growth of Digital Piracy

The OTT market in India has witnessed exponential growth, with an expected market valuation of USD 5 billion by 2023.[24] According to a 2022 report by Akamai Technologies, India is among the top countries affected by streaming piracy, accounting for nearly 17 billion visits to piracy websites in a single year. This growth has been paralleled by an alarming rise in piracy. Movies and series are often leaked within hours of release on torrent sites or streamed illegally through mirror websites. Platforms like Telegram and Discord have also been used for large-scale unauthorized distribution.

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Piracy impacts the revenues of OTT platforms and undermines the rights of content creators. Moreover, it discourages investment in creative industries and results in a loss of employment and tax revenues. The **Indian Music Industry (IMI)** and **Motion Picture Association (MPA)** have repeatedly highlighted these concerns.

4. Judicial Response to Digital Piracy

Indian courts have actively intervened in cases of digital piracy. A notable mechanism is the issuance of **John Doe orders**, which are pre-infringement injunctions allowing rights holders to block unknown infringers.

In *UTV Software Communication Ltd. v. 1337X.to & Ors*[25]., the Delhi High Court granted a dynamic injunction to block not only the original infringing websites but also mirror and redirect websites. Justice Pratibha Singh emphasized the need for a proactive and technologically adaptive legal mechanism.

Similarly, in *Star India Pvt. Ltd. v. Haneeth Ujwal*[26], the court issued ex parte injunctions against illegal streaming of the ICC World Cup. These cases underscore the judiciary's recognition of evolving piracy tactics and its willingness to evolve jurisprudence accordingly.

In *Eros International Media Ltd. v. Bharat Sanchar Nigam Ltd.*[27], the Bombay High Court directed ISPs to block URLs hosting pirated content, reinforcing the responsibility of service providers in aiding copyright enforcement.

In *Viacom18 Media Pvt. Ltd. v. Jhony Deep & Ors.*[28], the Delhi High Court extended interim injunctions against individuals illegally streaming copyrighted IPL content, reiterating that the copyright law applies equally to digital platforms.

5. Enforcement Challenges

Despite judicial activism, enforcement faces multiple hurdles:

5.1. Anonymity and Global Nature of Infringers: Pirates often operate anonymously or from jurisdictions with lax IP enforcement. This makes identifying and prosecuting offenders extremely difficult.

5.2. Lack of Technical Infrastructure: Indian law enforcement agencies often lack the technological expertise to trace digital footprints or effectively take down infringing content.

5.3. Delayed Legal Processes: Even when legal remedies are pursued, procedural delays dilute their effectiveness. Content is often pirated and circulated widely before any injunction can be enforced.

5.4. Limited Awareness and Public Apathy: There is a general lack of awareness among consumers regarding the legal and ethical implications of consuming pirated content. Affordable access has not completely eliminated piracy.

6. Industry-Led and Technological Solutions

The media and entertainment industry has adopted several technological measures:

6.1. Digital Watermarking and Fingerprinting: These techniques help trace pirated content back to the original source or distribution point.

6.2. Automated Takedown Mechanisms: AI-driven systems are now being deployed to detect and issue takedown requests to ISPs and hosting services.

6.3. Self-Regulation and Collaboration: Industry bodies such as the **Indian Broadcasting & Digital Foundation (IBDF)** and **Alliance for Creativity and Entertainment (ACE)** work together for surveillance and enforcement.

6.4. Content Accessibility: Platforms are trying to make content more affordable and accessible to reduce demand for pirated alternatives.

7. Comparative Perspective

Countries like the UK and Australia have implemented stringent site-blocking laws and fast-track judicial remedies. For example, the UK's **Digital Economy Act, 2017** mandates Internet Service Providers (ISP) to take proactive steps in blocking access to infringing websites.

In the US, the **Digital Millennium Copyright Act (DMCA)** provides a strong notice-and-takedown mechanism, empowering copyright owners to act swiftly against infringers.

India can adopt similar frameworks, such as fast-track tribunals or centralized digital enforcement agencies, to improve compliance.

8. Recommendations and the Way Forward

- **Legislative Reforms:** Introduce statutory provisions for dynamic injunctions, fast-track processes, and cross-border cooperation.
- **Capacity Building:** Train law enforcement and judiciary in digital forensics and cyber IP enforcement.
- **Public Awareness:** Nationwide campaigns to educate users about the legal consequences and ethical dimensions of piracy.

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[26] 250/2019 (Delhi High Court, May 30, 2019). Retrieved from https://indiankanoon.org/doc/93141731/.

[27] 2016 SCC OnLine Bom 2968.

[28] 2020 SCC OnLine Del 1337.

- **Strengthen ISP Liability:** Mandate proactive compliance and reporting by ISPs.
- **Adopt International Treaties:** Ratify WIPO Internet Treaties to enable stronger international enforcement mechanisms.

9. Conclusion

Digital piracy in the OTT era poses a multi-faceted threat to India's creative ecosystem. While the legal framework exists, effective enforcement remains the weak link. Judicial activism has helped address some challenges, but there is an urgent need for technological, legislative, and collaborative reforms. A multi-stakeholder approach involving the government, judiciary, industry, and consumers is essential to safeguard the rights of content creators and ensure a sustainable digital media environment.

The increasing reliance on digital platforms for content consumption makes the threat of piracy more pervasive and complex than ever. Despite the availability of affordable and legal digital content, many users continue to access pirated versions due to convenience, lack of awareness, or inadequate enforcement. The persistent gaps in cyber enforcement infrastructure, delayed judicial redress, and the cross-border nature of online infringement exacerbate the issue.

To truly curb digital piracy, India must move beyond reactive legal strategies and adopt a comprehensive framework that includes proactive technological measures, global cooperation, and consumer education. Strengthening the accountability of intermediaries such as ISPs, incentivizing legitimate digital consumption, and investing in cyber capabilities for enforcement agencies are critical steps forward.

Ultimately, protecting intellectual property in the digital age is not merely a legal imperative but essential for preserving creativity, fostering innovation, and securing the economic interests of content creators and the broader media industry. With strategic reforms and sustained collaboration, India can build a robust digital copyright enforcement ecosystem that balances innovation with protection.

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A Critical Analysis of The Changing Paradigms of Consumer Behaviour Vis-A-Vis E-Commerce

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Abstract:
The consumer behaviour is the study of how individuals, groups, or organizations select, buy, use, and dispose of goods, services, and ideas to satisfy their needs and wants. It encompasses the actions of consumers in the marketplace and the underlying motives for those actions. Consumer behaviour means the study of how people make decisions about what they buy, want, need, or act in regards to a product, service, or company.
India is truly a business hub now. More and more multinational companies and giants from across the borders are wanting to set up retail stores and factories in India. The sole reason being the Indian customers. Over the years, the image of India has changed and so have the citizens and their likings. This has obviously affected not just the domestic market but the international market as well. In this paper, researcher will study the changing patterns in Indian consumer behaviour vis-à-vis e-commerce and analyses the impacts on e-commerce relating to consumer behaviour:
Key words: Consumer behaviour, Indian market, e-commerce

Introduction:
The study of consumer behaviour formally investigates individual qualities such as demographics, personality lifestyles, and behavioural variables such as usage rates, usage occasion, loyalty, brand advocacy, and willingness to provide referrals), in an attempt to understand people's wants and consumption patterns. Consumer behaviour also investigates on the influences on the consumer, from social groups such as family, friends, sports, and reference groups, to society in general.

Objects of the research:
To understand the concept of consumer behaviour towards e-commerce
To ascertain the factors influencing consumer behaviour in selection of e-commerce
To analyses the impact of consumer behaviour on selection of e-commerce

Methodology:
The present study is based on secondary data like reports, journals, books, internet etc.
Review of Literature:
Goyal, P. & Chouhan, B. (2015)[29], in this research paper, researcher analyse factors affecting on online shopping behaviour of consumers that might be one of the most important issues of e-commerce and marketing field and also identified that financial risks and non-delivery risk negatively affected attitude toward online shopping. Results also indicated that domain specific innovativeness and subjective norms positively affect online shopping behaviour. Furthermore, attitude toward online shopping positively affected online shopping behaviour of consumers.
Sunil, S. P. A. C. E. (2015)[30] The study found that web stores have some competitive advantages over traditional stores as they charge lower price, provide easy and effortless information about the products, provide convenient mechanism to place orders and payment, better assortment, keep ample stock, and also provide wider options for consumers to select their purchases. The study further reveals that traditional retailers also have some competitive edge over web stores. Traditional retailers provide facility of physical examination of products, immediate possession, surety of delivering the same product as specified, immediate satisfying consumer’s queries with the help of salesmen, better after sales services and better return policy. Besides all these, it also helps consumers to have social and family experience while shop.
Shaikh Shana, (2024)[31], the study includes the state of e-commerce in India, e-commerce and technology adoption, e-commerce's socioeconomic effects, e-commerce and consumer purchasing decisions, and the advantages and success of e-commerce. Technological advancements appear quickly and are quickly embraced by the market. As consumers use

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technology more and more in their lives, their expectations may shift. Therefore, advancements in e-commerce and its business model may be to blame for shifts in consumer purchasing patterns. This study aims to comprehend the future demand for research on the influence of e-commerce on customer purchasing behaviour and the degree to which purchasing can be affected.

Background of the study:

Consumer behaviour is the study of individuals, groups, or organizations and all activities associated with the purchase, use, and disposal of goods and services. It explores how consumers' emotions, attitudes, and preferences influence their buying behaviour. Emerging as a distinct sub-discipline of marketing in the 1940s and 1950s, consumer behaviour has since evolved into an interdisciplinary social science. It draws from psychology, sociology, social anthropology, ethnography, marketing, and economics—particularly behavioural economics.

The study of consumer behaviour formally investigates individual characteristics such as demographics, personality, lifestyle, and behavioural variables (e.g., usage rate, usage occasion, brand loyalty, brand advocacy, and willingness to provide referrals). These factors help researchers understand people's wants and consumption patterns. Additionally, consumer behaviour examines external influences on the consumer, including social groups such as family, friends, sports teams, and reference groups, as well as broader societal influences like brands, social media influencers, and opinion leaders.

Consumer behaviour is influenced by several factors they are:

Affluence

Indians have always been known for prioritizing quantity over quality. We were infamous for not wanting to spend too much on the non-essential items. However, this is changing. The Gen Z and the millennials alike now prefer to buy branded products. They prefer the quality and would not mind spending a few more bucks for the same. You can say that from the increase in the number of iPhone users and the number of luxury cars we see on the streets of India. And the best part is — this is not just visible in metro cities but is slowly penetrating Tier II and Tier III cities.

Sustainable and informed shopping

Most Indians, at least those who have that privilege, would avoid any product or company that does not prioritize sustainable shopping. They would spend their hard-earned money but do enough research on the brand and its products. Most people look for product reviews online while some also look up the manufacturing details and other stuff. Indian consumers therefore are now more conscious and would not spend their money on anything and everything.

Customized products

The consumers are more discerned than ever. They want a product tailored to their preferences. Large brands often struggle to provide this level of customization. Consequently, people are turning to smaller brands known for crafting quality products. From personalized skincare routines to customized travel packages, brands are adapting to meet this growing demand for individualized experiences. This is also an opportunity for brands to get in touch with their consumers.

Experience over materialistic possession

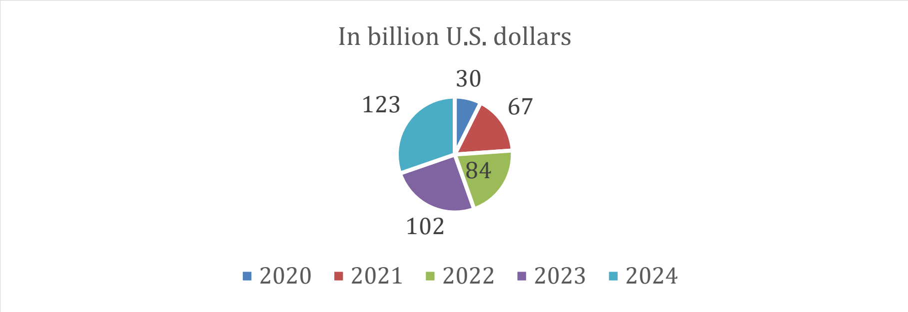
This is the dominance era for the new generation, who do not believe that it is necessary to own a car and a house of their own. They have no problem renting and actually prefer that. These kinds of consumers prefer a good experience over an expensive or a fine-dining dinner date. The younger demographic wants to make good memories and enjoy life's experiences. To keep up with these kinds of expectations, brands are also adapting to provide richer, more fulfilling experiences.

E-commerce (Online shopping)

E-commerce means buying or selling of goods or services including digital products over digital or electronic network. What consumers need today is a comfortable, easy and faster way of shopping. At the click of a mouse anything can be bought or sold. Consumers often find more choice from a large variety of products or services at more convenient prices. Online electronic commerce offers a convenient and user-friendly environment for the consumers without any barriers of time or distance.

Below is the data representing the staggering increase in e-commerce purchases made from 2020 to 2024.

Year	**In billion U.S. dollars**
2020	30
2021	67
2022	84
2023	102
2024	123



Following are the positive impacts and setbacks of e-commerce relating to consumer behaviour:

Positive impact of consumer behaviour:

1. Customised options — Increased demand for convenience, sustainability, and personalization has pushed businesses to innovate (e.g., eco-friendly packaging, AI-powered shopping recommendations) and Online platforms now offer diverse options tailored to different tastes, budgets, and regions.

2. Boost to Digital Economy - As more people shifted to online shopping (especially post-2020), it accelerated digital adoption, including digital payments, logistics, and app-based commerce and encouraged startup**s** and SMEs to digitize, helping them reach a wider audience.

3. Employment Generation - The growing e-commerce sector in India created millions of jobs from warehouse workers and delivery agents to customer service reps and tech developers.

4. Improved Consumer Awareness - With more product information, reviews, and comparison tools online, consumers are more informed leading to better choices and less exploitation and encourages brands to be transparent and improve quality to maintain reputation.

5. Environmental Shifts (in certain cases) - Conscious consumer behaviour is pushing brands toward sustainable practices for instance, demand for cruelty-free, organic, or recyclable products is influencing supply chains.

6. Empowerment of Rural and Underserved Areas - Online shopping has bridged geographic gaps, allowing people in tier 2/3 cities and rural areas access to products and services that were once out of reach.

7. Greater Customization and Engagement - By analyzing consumer behaviour, businesses can personalize experiences resulting in better satisfaction and loyalty and consumers feel seen and valued, creating positive brand relationships.

While consumer behaviour drives innovation and growth, it also has certain adverse impact, especially when driven by overconsumption, impulsivity, or lack of awareness.

Adverse impact of consumer behaviour:

1. Environmental Degradation - Fast consumerism (buying more, discarding quickly) leads to excessive packaging waste (especially plastic), increase in carbon footprint from manufacturing, delivery, and returns, E-waste and landfill overflow due to frequent gadget or clothing replacements.

2. Unsustainable Business Practices - To meet high consumer demands quickly and cheaply, some companies exploit labour (underpaid workers in unsafe conditions), use unsustainable or unethical sourcing methods and prioritize profit over people and planet.

3. Rise in Impulse Buying & Financial Strain - Easy access to online shopping, sales, and one-click payments can lead to overspending, debt, or poor budgeting habits and short-term gratification over long-term financial planning.

4. Mental Health Issues - The pressure to keep up with trends or online influencers can cause consumer anxiety, dissatisfaction, or FOMO (fear of missing out) and a false sense of identity tied to purchases or brands.

5. Over-reliance on Digital Platforms - Reduced support for local stores or traditional businesses as consumers shift entirely online, Monopoly concerns — a few large e-commerce players controlling prices, visibility, and market access.

6. Data Privacy & Manipulation - Companies track consumer behaviour to target them with aggressive marketing and Influence decisions using algorithms. This raises ethical concerns about manipulation, data misuse, and lack of informed consent.

7. Return Culture & Waste - High rate of returns (especially in fashion) creates logistical waste many returned items are not resold. they are discarded or destroyed and also adds to carbon emissions from double shipping.

Conclusion:

In this rapidly changing world of e-commerce, gaining insight into consumer behaviour is pertinent for companies/traders/manufacturers who aim to thrive in the digital space. The rise of mobile shopping, the growing impact of social media, the demand for personalized experiences, and the increasing importance of ethics and sustainability all highlight the shifting nature of consumer expectations. These changes are driven by technological progress, evolving cultural norms, and global developments. It is evident that the success of e-commerce depends upon businesses' which are open to being flexible, forward-thinking, and centred around the customer experience.

By keeping pace with new trends, addressing moral responsibilities, and making sustainability a core value, businesses can earn consumer trust, foster long-term loyalty, and stand out in a crowded market. Today's consumers expect transparency, responsibility, and environmentally conscious practices from the brands they support, making ethical conduct and sustainable strategies more critical than ever. Companies/traders/manufacturers that adopt these values not only meet customer demands but also play a role in driving social and ecological progress. Ultimately, the direction of e-commerce is being shaped by businesses that are ready to evolve, innovate, and align with the needs and values of their consumer. Through the effective use of technology and data, they can deliver more personalized, impactful, and sustainable customer experiences, fuelling growth and long-term success in the digital era.

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A Study on SWOC Analysis of Outcome of G20 Summit Organizedby India and Its Impact on Business and Economy of India

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ABSTRACT
India assumed the presidency of the G20 grouping from Indonesia on December 1, 2022, and will hold the post for a year. During its presidency, in a variety of social and economic sectors, India aims to identify, highlight, build and deepen international support for vitally important issues. This G20 conference in India is intended to continue pressing for reformed multilateralism that creates a multipolar international structure that is more accountable, inclusive, equitable and representative. India also intends to highlight inclusive growth and development at the G20 summit, placing a focus on women's empowerment and representation in essence of its G20 discussions.(India foundation, 2022).The G20 is an international forum for governance of the global economy, representing 85% of two-thirds of the world's population, 75% of global trade, and the worldwide GDP.(THE TIMES OF INDIA, 2023).India has been a member of the G20 since 1999 and will keep chairmanship for one year.(THE TIMES OF INDIA, 2023).India's Presidency comes at a time of global flux, with the Russia-Ukraine conflict and sanctions affecting the most vulnerable developing countries and LDCs. India's vision for global development, is shaped by green and digital uprisings and the pandemic effect. The objectives of this article are to analyze the country's strengths, weaknesses, opportunities and challenges (SWOC) in the context of India in the G20 summit. The current study is conducted using secondary data from books, government publications, open-source databases, and other literature sources. It is based on both descriptive and analytical research methodologies.

Keywords: India, G20, Presidency, Strengths, Weaknesses, Opportunities, and Challenges

INTRODUCTION

The G20 is a group of the world's largest developed and developing economies that serves as a forum for international economic cooperation. As a forum for the Finance Ministers and Central Bank Governors to debate international economic and financial concerns, it was established in 1999 during the Asian Financial Crisis. (INDIA'S G20 PRESIDENCY, 2023). The Finance Track and the Sherpa Track are two concurrent tracks that make up the G20. The Finance Track is responsible for finance and economy-related issues, while the Sherpa Track is responsible for political issues (INDIA'S G20 PRESIDENCY, 2023). The Sherpas of the G20 member countries, who serve as the leaders' personal envoys, coordinate the process from the Sherpa side (INDIA'S G20 PRESIDENCY, 2023). In addition, there are Engagement Groups that provide policy recommendations to G20 leaders on various issues such as business, labour, civil society, think tanks, youth, and women (INDIA'S G20 PRESIDENCY, 2023).
The G20 consists of 19 individual countries plus the European Union (EU). Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, United Kingdom, and the United States are among the members. It works to address major issues related to the global economy, such as international financial stability, climate change mitigation, and sustainable development. More than 80% of global GDP, 75% of commerce, and 60% of the world's population are collectively represented by the G20. (Wikipedia, 2023). India will occupy the G20 Presidency from December 1, 2022, until November 30, 2023. (INDIA'S G20 PRESIDENCY, 2023).

OBJECTIVES OF THE STUDY:

- To analyze the strengths, weaknesses, opportunities, and challenges (SWOC) of the G20 in India.
- To know about the issues discussed under the G20 presidency in India as on date.
- Under the G20 presidency in India, identify the major problems of the world and discuss reforms to address them accordingly.

RESEARCH METHODOLOGY

The study is based on secondary data like various literatures, open-sources, books and government publications. The present study was based on descriptive and analytical research methods.

REVIEW OF LITERATURE

John Smith (Smith, 2022)
The article "The G20 and Indian Presidency: A Review of Priorities and Challenges" by John Smith (2022) explores the G20 and India's role as its president. The article contributes to the academic discourse on the G20 and global governance.

Prabir De (De, 2017)
Prabir De's article, "India's Role and Position in the G20: An Assessment," is a literature review of previous studies, articles, and reports that discuss India's involvement in the G20 and its position within the group. The review aims to identify key themes, arguments, and findings related to India's role in the G20, including historical participation, contributions to global governance, influence within the G20, policy priorities, initiatives, and its relationships with other member countries.
Renu Modi (Modi, 2021)
The review begins by discussing the origins and evolution of the G20, highlighting its establishment and key milestones, and examining previous studies on the G20's effectiveness as a forum for international cooperation and decision-making.
Rajiv Kumar (Kumar, 2021)
Rajiv Kumar's article, "India's Leadership of the G20: Challenges and Strategies," provides a comprehensive analysis of existing scholarly works and publications related to India's role as the leader of the G20. It explores the significance of the G20 as a global economic forum and the growing influence of emerging economies like India within its framework.
Kunal Sen (Sen, 2021)
Kunal Sen's article, "India and the G20: Prospects and Challenges," provides an overview of previous research and theories relevant to India's involvement in the G20. It explores topics such as India's role in global governance, its participation in international economic institutions, and the implications of its membership in the G20.
K. M. Raman (Raman, 2021)
It explores various aspects, such as India's historical participation in international economic forums, its position and influence within the G20, its policy priorities and expectations from the group, and the implications of its engagement. By reviewing existing literature, the author establishes the context, identifies gaps, and contributes new insights to the field.
Sachin Kumar Sharma (Sharma, 2021)
The review synthesizes findings, identifies gaps in knowledge, and sets the groundwork for the article's subsequent analysis.
Akhil Ranjan Dutta (Dutta, 2021)
A literature review is a critical analysis and synthesis of existing research and scholarly articles relevant to a specific topic. It aims to provide a comprehensive overview of the current knowledge on a subject, identify research gaps, establish a theoretical framework, evaluate existing studies, support arguments, and enhance the quality of research.

ISSUES OF DISCUSSION UNDER G20 IN INDIA
G20 climate change policy:
The G20 has agreed on key climate goals around global warming limits and climate finance. The G20 agreement reaffirmed the commitment of wealthy nations to transfer $100 billion a year in climate finance to the Global South, an existing agreement that has not been fulfilled. The G20 has collectively committed to "achieve global net zero greenhouse gas emissions/carbon neutrality by or around mid-century" (ORF, 2023).
Climate Finance and Green Finance:
India is a member of the G20 and has been actively participating in the group's efforts to promote sustainable development. India has been focusing on climate finance and green finance as part of its efforts to promote sustainable development. India has been working towards mobilizing resources for climate finance and green finance through various initiatives such as the International Solar Alliance (ISA) and the Coalition for Disaster Resilient Infrastructure (CDRI).
Sustainable development:
India hosted the G20 summit in 2022. The theme of India’s G20 Presidency was “Vasudhaiva Kutumbakam” or “One World, One Family”.
Infrastructure development:
India may highlight its commitment to a human-centric view of technology; promote increased information exchange in key areas like financial inclusion, digital public infrastructure, and tech-enabled development in industries ranging from agriculture to education, and more.(pib.gov.in, 2022).
Agriculture, Food Security and Nutrition:
The G20 Agriculture Ministers have committed to working together to address the challenges of food security and nutrition in the world. They have agreed to promote sustainable agriculture and rural development, improve food systems and supply chains, and enhance resilience to climate change and other shocks. India is a member of G20 and has participated in these efforts(G20 Food Security and Nutrition Framework).
Human Resources Development:
Human Resources Development Initiatives in the Context of G20. However, the G20 is committed to contributing to the implementation of the 2030 Agenda for Sustainable Development(The Group of Twenty - G20).
Employment:
The G20 is committed to further aligning its work with the 2030 Agenda for Sustainable Development to ensure that no one is left behind in our efforts to eradicate poverty, achieve sustainable development and build an inclusive and sustainable future for all. The G20 will focus on sectors and themes of the 2030 Agenda where it has a comparative advantage and can add value as a global forum for economic cooperation.
Financial Inclusion and Remittances:

India is a member of the G20 and has been actively involved in the group's efforts to promote financial inclusion and remittances. The G20 has identified financial inclusion as a key priority area for its work on development and has set up a Global Partnership for Financial Inclusion (GPFI) to promote financial inclusion worldwide. India has been an active participant in the GPFI and has contributed to its work on remittances(The Telegraph Online, 2023).

Industrialization:

G20 Action Plan on the 2030 Agenda for Sustainable Development(Financial Express, 2022). The G20 is committed to further aligning its work with the 2030 Agenda for Sustainable Development to ensure that no one is left behind in our efforts to eradicate poverty, achieve sustainable development and build an inclusive and sustainable future for all.

Inclusive business:

The G20 Action Plan on the 2030 Agenda for Sustainable Development. It outlines the G20's collective actions towards sustainable development in its economic, social and environmental dimensions and poverty eradication as addressed in the 2030 Agenda.

Clean energy:

As part of its G20 presidency, India is one of the nations that will spearhead the acceleration of the unprecedented increase in the deployment of renewable energy over the next five years.(Invest India, 2022). The campaign for sustainable energy will benefit greatly from India's G20 presidency. (Invest India, 2022).

Green energy:

India is a member of the G20 and has been working towards increasing its share of renewable energy in the country. India has set a target of achieving 175 GW of renewable energy capacity by 2022(The Diplomat, 2023). India has also been working towards increasing its share of renewable energy in the country.

Trade and Investment:

India hosted the 1st G20 Trade and Investment Working Group (TIWG) Meeting in Mumbai from March 28th to 30th, 2023(pib.gov.in, 2022).

Anti-Corruption:

The G20 is committed to further aligning its work with the 2030 Agenda for Sustainable Development to ensure that no one is left behind in our efforts to eradicate poverty, achieve sustainable development and build an inclusive and sustainable future for all.

International Financial Architecture:

India is a member of the G20 group of countries. The G20 is committed to further aligning its work with the 2030 Agenda for Sustainable Development to ensure that no one is left behind in our efforts to eradicate poverty, achieve sustainable development and build an inclusive and sustainable future for all.

Growth Strategies:

The G20 Action Plan on the 2030 Agenda for Sustainable Development. It outlines the G20's commitment to further aligning its work with the 2030 Agenda for Sustainable Development to ensure that no one is left behind in our efforts to eradicate poverty, achieve sustainable development and build an inclusive and sustainable future for all. The G20 will focus on sectors and themes of the 2030 Agenda where it has a comparative advantage and can add value as a global forum for economic cooperation. Within the overall sustainable development agenda, the G20's comparative advantage lies in its convening power and its collective ability to adopt and support initiatives at the highest global level, including those that involve a macro-economic framework, and to create the global enabling environment (Business World, 2023).

Innovation:

The G20 is committed to further aligning its work with the 2030 Agenda for Sustainable Development to ensure that no one is left behind in our efforts to eradicate poverty, achieve sustainable development and build an inclusive and sustainable future for all. The G20 will focus on sectors and themes of the 2030 Agenda where it has a comparative advantage and can add value as a global forum for economic cooperation. Within the overall sustainable development agenda, the G20's comparative advantage lies in its convening power and its collective ability to adopt and support initiatives at the highest global level, including those that involve a macro-economic framework, and to create the global enabling environment(India Science, Technology and Innovation, 2023).

Global Health:

India is a member of the G20 and has been actively involved in discussions on global health. India has been working with other G20 countries to address the COVID-19 pandemic and has also been involved in discussions on other global health issues such as antimicrobial resistance and universal health coverage. India has also been working with other countries to ensure that vaccines are available to all countries, especially low-income countries(The Economic Times, 2023).

Accountability and Engagement

According to the Center for AI and Digital Policy, the G20 recommendations urge AI users and developers to uphold the rule of law and principles such as privacy, equality, diversity, and internationally recognised worker rights. They also urge them to be fair and accountable with transparent decision-making processes. (caidp.org, 2023).

SWOC Analysis

Strengths:

According to the World Economic Forum, the G20 accounts for more than 80% of global GDP, 75% of commerce, and 60% of the world's population (World Economic Forum, 2022). This indicates that G20 is a powerful forum for international economic cooperation and plays a significant part in forming and enhancing global governance and architecture across all key international economic concerns (INDIA'S G20 PRESIDENCY, 2023).

Weaknesses:
India's G20 priorities are inclusive, equitable and sustainable growth, women's empowerment, digital public infrastructure, tech-enabled development, climate financing, global food security and energy security among others (Firstpost, 2022). India has invited Bangladesh, Egypt, Mauritius, the Netherlands, Nigeria, Oman, Singapore, Spain and the UAE as guest countries for the summit in 2023 (Firstpost, 2022).

Opportunities:
India benefits from being a part of G20 in many ways. It provides India with an opportunity to engage with the world's leading economies and to participate in global economic governance. India is also able to use the G20 platform to advance its interests on issues such as trade, investment, and climate change.

Challenges:
India faces several challenges as a member of the G20. One of the main challenges is to ensure that the voice is heard in the group. India is one of the largest economies in the world, but it is still a developing country and does not have the same level of influence as some of the other members. Another challenge is to balance its domestic priorities with its international commitments. India has a large population and many pressing social and economic issues that it needs to address, but it also has to participate in global efforts to address issues such as climate change and trade.

CONCLUSION:
India began its year-**long** presidency of the Group of 20 (G20) on December 2, 2022, taking over from Indonesia at a time of geopolitical tumult and uncertainty over post-pandemic recovery (Reuters, 2022). The theme of India's G20 Presidency is "People, Planet and Prosperity" (Study IQ, 2022). The G20 Presidency gives India a unique opportunity to strengthen its role in the world economic order and become a global soft power (Invest India, 2022). India's G20 Presidency will be of a just and sustainable future for all in the world. The theme further emphasizes on Prime Minister's vision of Lifestyle for the Environment or LiFE, which is associated with the need to make sustainable and responsible choices starting on an individual level for a greener and bluer future (Study IQ, 2022).

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A Study of Awareness about Cyber security in E-Commerce amongst the Youth

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Abstract:
The internet has become a central part of daily life, influencing how individuals communicate, shop, work, and access information. One of the most significant changes brought about by the internet is the rise of e-commerce-commerce, or electronic commerce, refers to the buying and selling of goods and services over the internet. However, with the advent of high-speed internet, secure payment systems, and mobile technology, e-commerce has grown exponentially. In the 1990s, companies like Amazon and eBay were pioneers in creating online marketplaces, and since then, e-commerce has expanded to encompass a wide range of industries, from retail and travel to entertainment and finance. According to data from various sources, over 60% of the global population has access to the internet, and a significant portion of internet users rely on it for shopping. The traditional brick-and-mortar businesses are increasingly shifting their operations to online platforms, while new e-commerce-based companies have emerged to take advantage of the vast opportunities the internet provides.

INTRODUCTION

The cyber threats affect all e-commerce users, **youth** (typically those aged 18-30) are particularly susceptible to these risks for several reasons:

1. Young people are often active on various social media platforms, engage in online gaming, and frequently use e-commerce websites for shopping, ordering food, or purchasing entertainment services.
2. Many young people may not fully understand the importance of basic cyber security practices.
3. Youth tend to be more technologically proficient than older generations, but this proficiency can sometimes breed overconfidence.
4. Many youth are heavily influenced by social media trends, influencers, or peer recommendations when shopping online. The young consumers often prioritize convenience over security, they may not take the time to verify the authenticity of the website or seller.
5. Young people often use multiple devices—smartphones, laptops, tablets—and access various online accounts. This creates additional opportunities for hackers to infiltrate their personal data. The consequences of cyber security threats in e-commerce can be severe, especially for vulnerable youth.

OBJECTIVES

The present study is conducted:
To explore the extent of cyber security awareness among young people who engage in e-commerce.
To investigate how this awareness influences their behaviour and decision-making on online shopping platforms.
To study awareness about cyber security risks, such as phishing, fraud, and data breaches.

HYPOTHESES

H_1: There is awareness about cyber security in E-Commerce amongst the youth
H_0: There is no awareness about cyber security in E-Commerce amongst the youth

METHODOLOGY

- Research Approach: Case Study
- Research Design: Questionnaire (Qualitative)

RESEARCH QUESTION

- Why the youth use E-commerce?
- How social media influences the students in this cyber security in E-Commerce?

CONCEPTUAL FRAMEWORK

- Behavioural Factor
- Emotional Factor
- Cognitive Factor
- Age

Cyber security in E-Commerce: A Case Study

- A case study on reasons for college students awareness about cyber security in E-commerce

SAMPLING

- Sample Size: 117
- Age Group of Respondents: Age 16-26 yrs

 ISBN No- 978-93-342-5395-5

- Gender wise Composition: Both Male and Female

DATA ANALYSIS

The data provided is into the demographic profile, e-commerce habits, cyber security awareness, and attitudes toward cyber security in the context of online shopping. The majority of respondents (84.2%) are in the 18-21 age group, which indicates a predominantly young audience. Only a small percentage (9.6%) are under 18, and even fewer are aged 22 or above. A significant majority (68.1%) of respondents are female, with males making up 31.9%. No respondents identified as non-binary or chose not to disclose their gender. Most respondents are first-year students (77.6%), followed by a small portion in second (10.3%) and third year (11.2%).

- **How often do you shop online?**

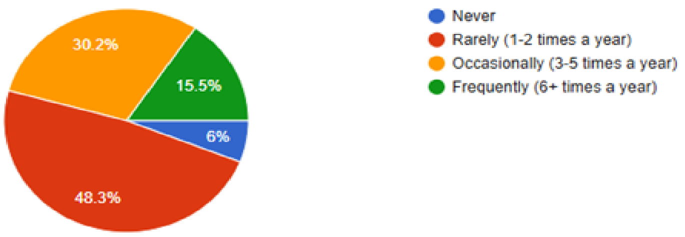

Chart No 1.1

A large percentage of respondents shop online frequently (48.3%), with 30.2% shopping occasionally and 15.5% shopping rarely. Only 6% of respondents never shop online.

- **Which of the following e-commerce platforms do you use? (Select all that apply**

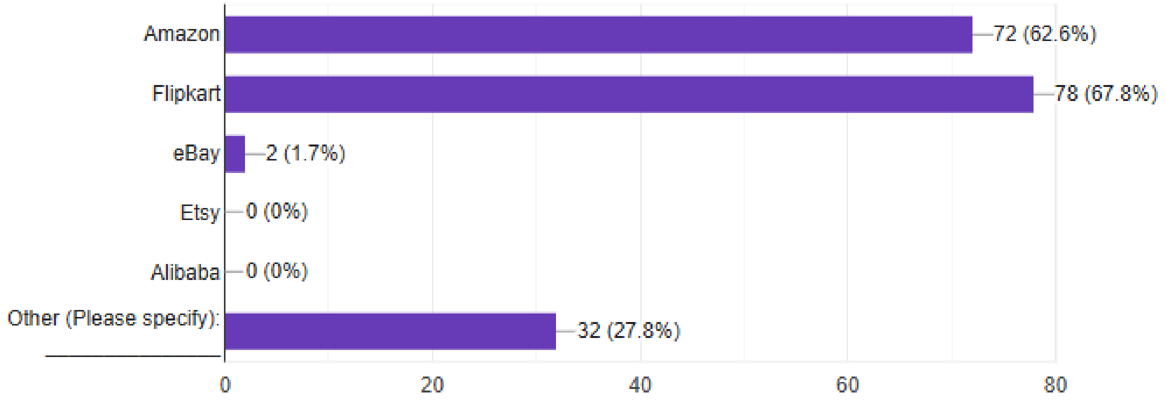

Chart No 1.2

Flipkart and **Amazon** are the most commonly used platforms (67.8% and 62.6%, respectively), with only small percentages using platforms like eBay (1.7%) or Alibaba (0%).

- **What types of products do you typically buy online? (Select all that apply)**

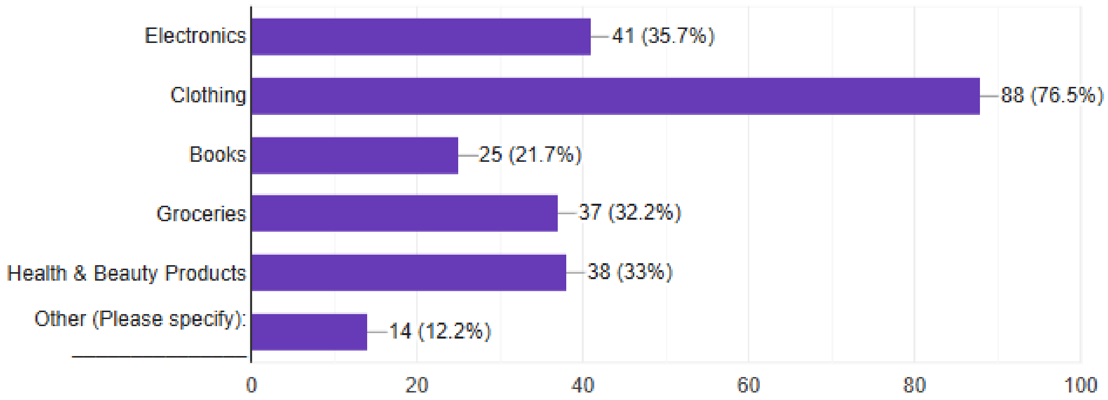

Chart No 1.3

Clothing is the most popular category, with 76.5% of respondents purchasing it. Other common items include health & beauty products (33%), electronics (35.7%), and groceries (32.2%).

- **Are you familiar with the term "cyber security" in the context of e-commerce?**

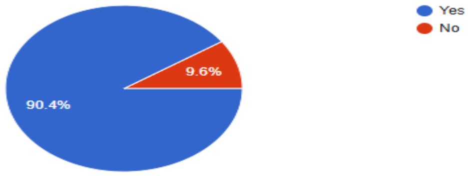

Chart No 1.4

The majority (90.4%) are familiar with the term "cyber security" in the context of e-commerce, indicating a reasonable level of awareness.

- **What types of online security threats have you heard of in relation to e-commerce? (Select all that apply)**

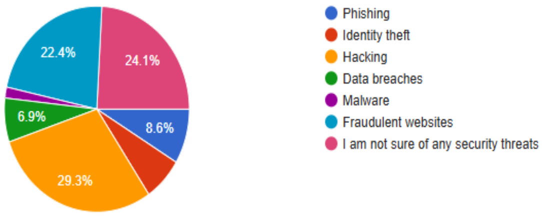

Chart No 1.5

Respondents are familiar with threats like **phishing (8.6%)**, **fraudulent websites (29.3%)**, **hacking (24.1%)**, and **identity theft (22.4%)**. However, **malware (6.9%)** and **data breaches (8%)** are less commonly recognized.

- **Have you ever encountered a cyber-security issue while shopping online (e.g., unauthorized transactions, phishing, and fraud)?**

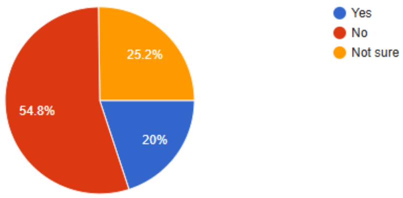

Chart No 1.6

About **20%** of respondents have encountered a cyber-security issue while shopping online (e.g., unauthorized transactions, phishing, fraud), while the majority (54.8%) have not experienced such issues.

- **How confident are you that your personal information (e.g., credit card details) is secure when shopping online?**

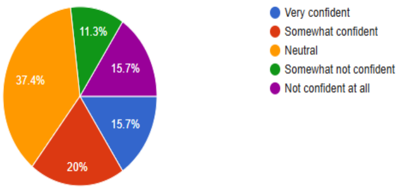

Chart No 1.7

37.4% of respondents are neutral regarding their confidence in the security of their personal information. Only 15.7% are very confident in the security of their data. **47%** of respondents have received suspicious emails that appeared to be from e-commerce websites, which indicates a considerable concern about phishing attacks.

- **Have you ever received suspicious emails or messages that appear to be from e-commerce websites?**

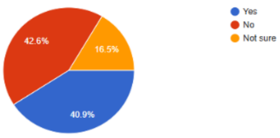

Chart No 1.8

40.9% of respondents have received suspicious emails that appeared to be from e-commerce websites, which indicates a considerable concern about phishing attacks.

- **Which of the following actions do you take to protect yourself while shopping online?** (Select all that apply)

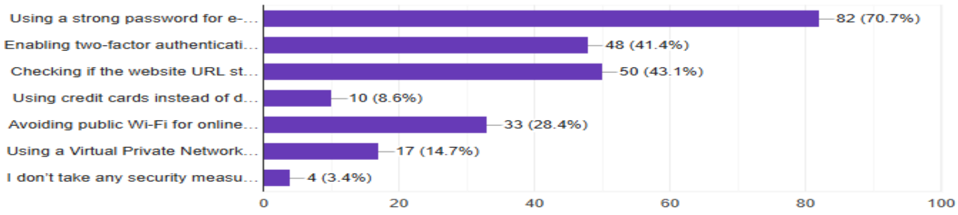

Chart No 1.9

The majority of respondents use **strong passwords** (70.7%) and enable **two-factor authentication** (41.4%). Other actions like checking if the website URL starts with "https://" (43.1%) and avoiding public Wi-Fi for transactions (28.4%) are also common

- **When shopping online, do you verify the legitimacy of the website before making a purchase?**

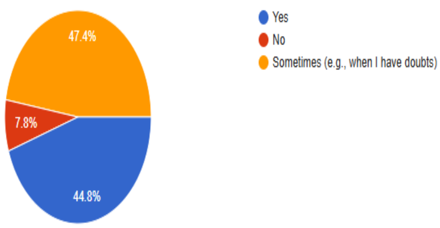

Chart No 1.10

A significant portion (47.4%) verifies the legitimacy of websites before making a purchase. However, 44.8% sometimes do so, showing that many do not always check.

- **What measures do you take to ensure the website is secure? (Select all that apply)**

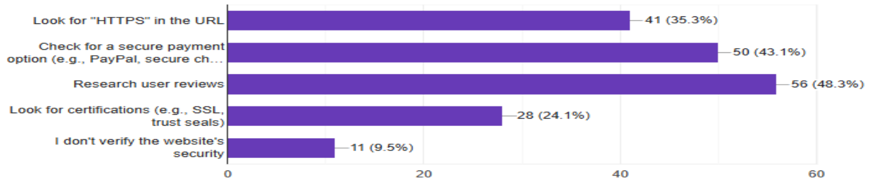

Chart No 1.11

The 56 (48.3%) is doing the research on the users reviews before using the website to ensure the website is secure or not.11(9.5%) is don't verify the website security.

- **Are you aware of what "phishing" is?**

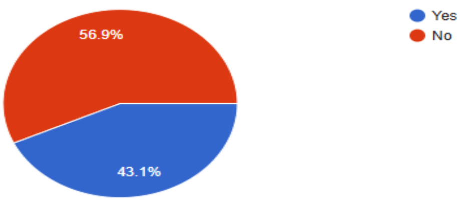

Chart No 1.12

Over half (56.9%) of respondents are aware of phishing attacks, but there is a notable lack of awareness (43.1%) among the remaining respondents, highlighting a gap in understanding this specific threat.

- **How important is cyber security to you when shopping online?**

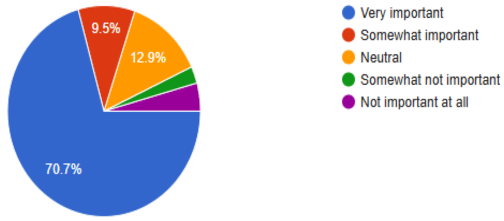

Chart No 1.13

Cyber security is considered "very important" by **70.7%** of respondents when shopping online, and only a small percentage consider it less important (9.5% "somewhat important" and 3% "not important").

➢ **In your opinion, who should be responsible for ensuring the security of online transactions?**

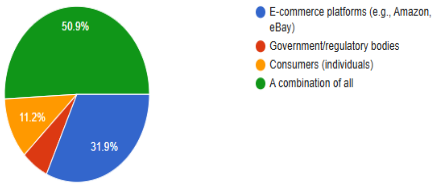

Chart No 1.14

The responsibility for ensuring the security of online transactions is seen as a shared duty, with 50.9% believing **e-commerce platforms** should ensure security, **31.9%** suggesting it should be a combination of all parties, and 11.2% believing **government/regulatory bodies** should take charge.

➢ **Do you believe e-commerce platforms do enough to protect users from cyber threats?**

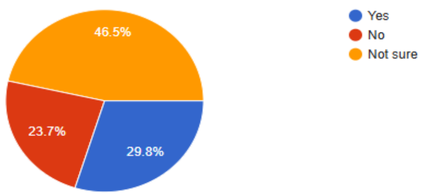

Chart No 1.15

Nearly half of the respondents (46.5%) believe that e-commerce platforms are doing enough to protect users from cyber threats. A smaller portion (23.7%) disagrees and feels that e-commerce platforms do not do enough to protect users from cyber threats.

➢ **Would you trust digital wallets (e.g., PayPal, Google Pay) more than credit/debit cards for online payments?**

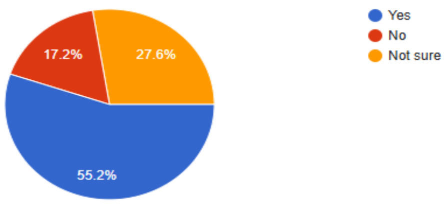

Chart No 1.16

Digital wallets like PayPal and Google Pay are preferred over traditional credit/debit cards for online payments by **27.6%**, while **55.2%** are uncertain, and 17.2% do not trust them as much.

➢ **What role do you think education and awareness programs should play in improving cyber security for young consumers?**

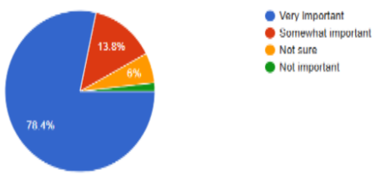

Chart No 1.17

A significant **78.4%** of respondents believe that education and awareness programs are important in improving cyber security for young consumers, with **91 respondents (78.4%)** indicating they consider it "very important."

OBSERVATIONS:

- A large percentage of respondents (48.3%) shop online frequently, with 30.2% shopping occasionally. Clothing (76.5%) is the most purchased product category, followed by health and beauty products, electronics, and groceries.
- The majority (90.4%) of respondents are aware of the term "cyber security" in e-commerce.
- The awareness of specific threats like phishing (56.9%), fraudulent websites (29.3%), and hacking (24.1%) is more prominent, while malware and data breaches are less recognized.
- 20% of respondents have experienced cyber-security issues like unauthorized transactions, phishing, or fraud during online shopping, which highlights the prevalence of these risks.
- A significant portion (47%) of respondents reported receiving suspicious emails, indicating vulnerability to phishing attacks.
- Although 70.7% use strong passwords and 41.4% enable two-factor authentication, a notable portion of respondents (47.4%) do not always verify the legitimacy of e-commerce websites before making a purchase.
- Regarding confidence in the security of their personal information, only 15.7% are very confident, while 37.4% are neutral, indicating uncertainty among young consumers about the safety of their online transactions.
- A vast majority (78.4%) believe that educational programs and awareness initiatives are crucial for improving cyber security among young consumers, suggesting a recognition of the need for greater understanding and training in this area.
- Half of the respondents (50.9%) feel that e-commerce platforms should ensure the security of online transactions. A significant portion (31.9%) believes this responsibility should be shared among all parties (users, platforms, government), highlighting diverse opinions on accountability.
- Digital wallets (PayPal, Google Pay) are preferred by 27.6% over traditional credit/debit cards for online payments, but the majority (55.2%) are uncertain, reflecting mixed trust in alternative payment systems

Limitation of the study: The study is based on the primary data collected from youth for educational purpose only. It is not based on the secondary data collection.

Conclusion

This study reveals that while young consumers are generally aware of cyber security issues in e-commerce, their actual practices and confidence in online security vary. Despite high levels of awareness, many respondents show gaps in their ability to identify or respond to specific cyber threats. This highlights the need for enhanced cyber security education and a more proactive approach to online safety, particularly given the vulnerability of youth to evolving cyber threats. Additionally, there is a general expectation for e-commerce platforms to take more responsibility in safeguarding users, although the role of government and educational bodies is also acknowledged.On the basis of the analysis H1 is accepted and null hypothesis is rejected.

RECOMMENDATIONS

- The education should focus not only on general awareness but also on practical skills, such as recognizing phishing attempts, using strong passwords, and identifying malicious websites.
- Offering interactive tools, simulations, or gamified experiences where young people can practice identifying and responding to cyber threats would help them develop better habits.
- Many young consumers may struggle to understand or implement complex security measures. E-commerce platforms should provide easy-to-use security features, like one-click options for setting up two-factor authentication (2FA) and password managers.
- E-commerce platforms can introduce visible, non-intrusive warnings or reminders that encourage users to take specific actions to improve their security, such as updating passwords or reviewing their transaction history.
- Platforms and educational programs can encourage young consumers to regularly audit their online security settings and activity, like checking for unusual transactions or reviewing privacy settings
- It's important to promote "cyber hygiene" practices, like using unique passwords for different accounts and regularly updating them.
- E-commerce platforms should be transparent about their security protocols, what they are doing to protect users, and how they handle potential breaches.
- Platforms should consider implementing specific features or guidelines that are particularly tailored to protect younger users or those less familiar with online security.
- Governments and regulatory bodies should run ongoing public awareness campaigns targeting younger audiences, emphasizing the importance of cyber security and best practices
- Encouraging young people to share their cyber security knowledge with their peers can also help bridge the awareness gap.

Utility of the Research

This research is in the form of analytical study and can be used for framing the various policies to protect youth in E-Commerce and to create awareness sessions through legal aspects amongst the youth

Scope of the study
The further study can be continue for detail analysis with secondary data collection. The study can be carried out as a case study, comparative analysis, regression and correlation analysis etc.

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A Study on the Role of Blockchain Technology in Preventing Financial Frauds

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Abstract:
The global financial industry faces a serious challenge from the growing sophistication of cyber financial scams. By utilizing its fundamental characteristics decentralization, transparency, and immutability this study investigates how blockchain technology might reduce these fraud risks. This paper demonstrates how blockchain's decentralized ledger system improves the security of financial transactions by prohibiting unauthorized adjustments and enables real-time verification through a thorough analysis of recent literature and expert interviews. Furthermore, by automating and safeguarding transaction processes, the adoption of smart contracts and consensus mechanisms strengthens the prevention of fraud.
The results indicate that by improving the quality and traceability of financial data, blockchain technology can dramatically lower the frequency of financial scams. However, resolving issues with interoperability, scalability, and regulations is necessary for broad adoption. This report offers insightful information about the real-world uses and prospects of blockchain technology in the battle against financial fraud.

Key words: Cyber financial scams, Block chain technology, Fraud prevention, Financial transaction security.

Introduction:
Over the past ten years, the financial sector in India has experienced a spectacular digital revolution, fueled by the broad adoption of online payment systems, fintech technologies, and digital banking. For both organizations and customers, this shift has resulted in previously unheard-of levels of efficiency and ease. The nation's economic stability and security are seriously threatened by the swift transition to digital financial services, which has also made the industry vulnerable to a variety of sophisticated cyber financial scams.
Regulators and financial organizations are becoming increasingly concerned about the surge in cyber financial scams in India. Conventional techniques for detecting and preventing fraud have not been able to keep up with the changing strategies used by cybercriminals. Therefore, to secure financial transactions and shield customers from fraudulent activity, creative and strong security measures are desperately needed.
With its built-in decentralization, transparency, and immutability, blockchain technology offers a viable way to deal with these issues. Blockchain can greatly improve the security and integrity of financial data by doing away with the need for a central authority and allowing real-time transaction verification. Because all transactions are permanently recorded and unchangeable because to the decentralized ledger system, it is more difficult for fraudsters to falsify or hide information.
The purpose of this study is to investigate how blockchain technology might stop financial fraud in the Indian setting. This study looks atlegal frameworks, and professional opinions in order to offer insightful suggestions for using blockchain technology to stop financial fraud and advance a safe digital financial ecosystem in India. The possible drawbacks and restrictions of implementing blockchain technology, such as interoperability, scalability, and regulatory concerns, will also be covered in the study.
This study is to support ongoing efforts to improve the security of India's financial industry by providing a thorough review of the current situation and the prospective uses of blockchain in preventing fraud. India can create a more robust and transparent financial system that can withstand the constantly changing risks posed by cyber financial scams by utilizing blockchain technology.

Financial Frauds in India (2019-2024)

Financial Year	Number of Frauds	Amount Involved (₹ crore)	Amount Recovered (₹ crore)	Source
2019-20	8,707	1,85,468	1,356	RBI Annual Report 2019-20
2020-21	7,363	1,38,422	1,234	RBI Annual Report 2020-21
2021-22	9,103	1,32,389	1,112	RBI Annual Report 2021-22
2022-23	7,338	1,00,000	1,000	RBI Annual Report 2022-23
2023-24	6,533	1,00,000	1,000	RBI Annual Report 2023-24

These tables provide a comprehensive overview of the number of financial frauds, the amount involved, and the amount recovered in India over the past five years Every year, thousands of fraud instances involving sums in the crores are reported by the Reserve Bank of India (RBI). Even with efforts to recover huge sums, frauds continue to occur, which emphasizes the shortcomings of conventional approaches and the demand for cutting-edge solutions like blockchain technology.

The purpose of this study is to evaluate how well blockchain works to stop financial crime, investigate compliance and regulatory issues, and look at how it integrates with AI and machine intelligence. The results will address the pressing need for strong fraud prevention measures by offering insightful analysis and suggestions for using blockchain technology to improve financial security in India.

Objectives of the Study:

- To Analyze the Evolution of Cyber Financial Frauds
- To Assess the Effectiveness of Blockchain in Fraud Prevention
- To Examine Regulatory and Compliance Aspects

Review of literature:

Mehta, A. (2024). The potential of blockchain technology to improve transaction security and lower fraud occurrence is highlighted in this study, which looks at the connection between technological improvements and banking frauds in India.
Goda, N. R., & Jha, N. (2024). The decentralized and transparent nature of blockchain technology is highlighted in this study as it examines the role of technology in preventing and identifying banking crimes in India.
CloudBrain Team. (2024). The impact of blockchain technology on India's financial system is examined in this article, with particular attention paid to recent advancements, difficulties, and how blockchain might improve efficiency and transparency.
Sharma, R., & Gupta, P. (2023). The paper examines how blockchain technology can be used to stop financial fraud in India, emphasizing its key characteristics and effective use in Indian banks.
Patel, V., & Desai, M. (2023). This study investigates the potential uses and related difficulties of blockchain technology in improving financial security in the Indian banking industry.
Kumar, S., & Singh, R. (2023). The study examines the fundamental characteristics of blockchain technology and successful case studies to determine how well it works to prevent financial fraud in Indian banks.
Reddy, K., & Rao, S. (2023). This study highlights the need for a strong regulatory framework by examining the opportunities and regulatory obstacles related to blockchain adoption for fraud prevention in India.
Jain, A., & Verma, P. (2023). By examining its key characteristics and successful case studies, the paper investigates how well blockchain technology works to stop cyber financial frauds in Indian financial institutions.
Singh, A., & Kaur, G. (2023). By examining its key characteristics and effective applications, this study explores how blockchain technology might help Indian fintech companies prevent financial fraud.
Nair, R., & Menon, A. (2023). The report looks at how blockchain technology affects regulatory compliance in the Indian banking industry, outlining obstacles and offering suggestions for its implementation.

Statement of problem:

Although previous research shows that blockchain technology has the ability to stop financial fraud, there are still a number of unanswered questions. Numerous studies concentrate on theoretical elements without offering India-specific empirical support. Comprehensive studies on blockchain implementations in Indian financial institutions are required. Furthermore, more research is needed to address legal obstacles and data protection concerns about the regulatory and compliance aspects of blockchain implementation in India. Finally, little is known about how blockchain can be combined with other cutting-edge technology like artificial intelligence and machine learning to produce a comprehensive fraud protection system. Filling in these gaps can provide important information about how to improve India's financial security.

Research Methodology:

Analyzing how blockchain technology can stop financial fraud in the Indian setting is the main goal of this study's research technique. Using random sampling, a structured, closed-ended questionnaire was created and given to 100 respondents. The survey asked about respondents' knowledge of blockchain technology, their opinions on how well it prevents fraud, how it is currently being used in financial institutions, adoption barriers, support for regulatory frameworks, and interest in combining blockchain with other cutting-edge technologies like artificial intelligence and machine learning. An online survey platform was used to gather data over the course of a month, and statistical tools like SPSS was used for analysis.
The study's objectives are to present empirical data on the state of blockchain adoption in India's financial industry at the moment, pinpoint major obstacles, and provide helpful suggestions for utilizing blockchain technology to improve financial security. Professionals in the financial industry, IT specialists, scholars and researchers, entrepreneurs and business owners, and students were among the target demographics. This all-encompassing strategy guarantees a careful examination of the study's goals.

Data Analysis and Interpretation:

Based on the data collected from 100 respondents, 70% of respondents are aware of blockchain technology, with 30% being extremely aware and 40% being moderately aware, according to data gathered from 100 respondents. While 30% believe blockchain to be just moderately good in preventing financial crimes, a sizable majority (45%) believe it to be extremely effective. 25% of financial organizations currently use blockchain technology, 35% intend to do so, and 40% are not currently considering it. The main obstacles to blockchain adoption include lack of knowledge and comprehension (20%), scalability concerns (25%), regulatory and compliance issues (40%), and high implementation costs (15%). Five out of ten respondents strongly support the creation of a regulatory framework for blockchain technology, and thirty percent support it moderately.

Furthermore, 50% of respondents are very interested in integrating blockchain with other cutting-edge technologies like AI and machine learning, while 30% are only moderately interested. A thorough summary of the respondents' knowledge, opinions, and difficulties regarding blockchain technology in relation to stopping financial frauds is given by this descriptive analysis.

Chi-Square Test Results

Hypothesis	**Chi-Square Value**	**Critical Value**	**Result**
Awareness vs. Effectiveness	7.39	7.815	No significant association
Current Use vs. Regulatory Support	5.99	12.592	No significant association

This summary provides a concise overview of the data collected from 100 respondents, including key descriptive statistics and the results of chi-square tests.

Conclusion

The study emphasizes how blockchain technology is becoming more widely recognized for its projected ability to stop financial fraud in the Indian financial industry. Regulatory and compliance issues, scalability issues, and high implementation costs have hindered the current use of blockchain, despite its acknowledged potential. Strong support for a regulatory framework emphasizes how important it is to have precise rules and regulations in order to promote the adoption of blockchain technology. The considerable interest in combining blockchain technology with artificial intelligence and machine learning points to a bright future for a comprehensive fraud prevention system.

Recommendations

1. **Regulatory Framework Development**: India's financial regulators ought to work with industry participants to create thorough policies and standards for the use of blockchain technology. A seamless transition to blockchain-based systems should be made possible by this architecture, which should solve data privacy, security, and compliance concerns.
2. **Awareness and Training Programs**: Financial organizations should spend money on awareness and training campaigns to inform their staff and clients about blockchain technology. Informed decision-making will be encouraged and the lack of understanding will be addressed.
3. **Scalability Solutions**: Blockchain technology's scalability issues should be the main focus of research and development activities. The performance and scalability of blockchain networks can be improved via innovations like consensus processes, off-chain transactions, and sharding.
4. **Integration with Emerging Technologies**: To build a complete fraud protection system, financial institutions should investigate how blockchain can be integrated with other cutting-edge technology like artificial intelligence and machine learning. Real-time financial fraud detection and prevention may be improved by this combination.
5. **Pilot Projects and Case Studies**: Promoting pilot initiatives and compiling case studies of financial institutions' successful blockchain deployments can offer insightful information and best practices that others might use.
6. **Collaboration and Partnerships**: To take use of their resources and experience in putting blockchain ideas into practice, financial institutions should work with fintech firms, technology suppliers, and academic institutions.

   The Indian banking industry may fully utilize blockchain technology to improve financial security and successfully stop financial scams by implementing these suggestions.

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Role of Intellectual Property in Digital India: Challenges and Opportunity Through Digital Divide

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Abstract
India's rapid digital transformation is presenting both opportunities and issues through the initiative of Digital India. Intellectual Property (IS) plays an important role in fostering innovation, economic growth and technological advancement. However, the dominant digital difference limits the equitable distribution of these advantages. This article examines how the use of intellectual property can overcome the digital difference, providing inclusive access to digital resources, promoting innovation and protecting the rights of creators. Thanks to the analysis of secondary data, the study considers state policies, industry trends and global advanced practices. The results show that intellectual property laws stimulate economic growth and digital entrepreneurship, but lack of awareness, high patent costs and inadequate digital infrastructure remain important obstacles. Enhanced education in the IP field, easy access to digital devices, and development of public-private partnerships are necessary for a comprehensive digital economy. The document concludes that effective management of intellectual property, combined with initiatives on digital literacy and fair access to technology, can contribute significantly to the differences in digital in India. Future political interventions should focus on the democratization of IP allowances to ensure that all citizens can participate and benefit from the digital revolution, regardless of their socioeconomic origins.

Keywords:
Intellectual Property (IP), Digital India, Digital Divide, IP Rights (IPR), Patent Protection, Copyright and Digital Content.

Introduction

The rapid progress of digital technologies has changed the company in the world, guaranteeing economic growth, social development and the expansion of access to knowledge. Recognizing the importance of digital transformations, the Indian government published the Digital India initiative in 2015 to create a company authorized by digital capacities and the knowledge economy. The initiative has made significant progress, but it has left a significant digital fracture, affecting marginalized communities, limiting participation in the digital economy.

Intellectual Property (IP) plays a key role in fostering innovation, creativity and economic growth within the digital ecosystem. Patents, brands, copyrights and trade secrets are important to protect digital innovation and inspire creators. However, for the digital economy to become a reality, access to IP knowledge, digital infrastructure and legal frameworks should be fair. Many people and small businesses are fighting to benefit from IP protection from limited awareness, high costs and complex legal processes, especially in rural areas and inadequate services.

In this article, we will explore how IPs can maintain digital India's goals, contribute to innovation, and provide fair access to digital tools and resources. The study examines the role of IP in digital inclusiveness, determines the obstacles to the acceptance of the IP in the disadvantaged sectors and explores the policy which can overcome the gap between digital achievements and accessibility. Using the power of IP, digital India can create a more inclusive economy in which creativity and innovation flourish in all areas of society.

Objectives of the Study

1. To examine the role of intellectual property in the Digital India initiative.
2. To analyze how IP laws influence digital inclusivity and economic growth.
3. To identify challenges in leveraging IP for bridging the digital divide.
4. To suggest policy recommendations for fostering an inclusive digital economy.

Hypothesis

1. H1: Stronger intellectual property protection enhances digital innovation and economic development.
2. H2: The digital divide can be reduced through effective IP policies and equitable access to digital resources.
3. H3: Lack of IP awareness and digital infrastructure limits the benefits of Digital India for marginalized communities.

Research Methodology

This study employs a qualitative research approach using secondary data from government reports, academic journals, and policy documents. The methodology involves:

1. **Data Collection:**
   - Secondary data from reports by the Government of India, World Intellectual Property Organization (WIPO), academic research papers, and industry whitepapers.

- Case studies of successful IP-driven digital transformation initiatives globally.

2. **Data Analysis:**
   - Comparative analysis of India's IP policies with those of developed countries.
   - Thematic analysis of policies and frameworks supporting digital inclusion through IP.
   - Identifying patterns in digital divide reduction due to IP-driven initiatives.
3. **Hypothesis Proving:**
   - **H1:** Evaluating statistical and qualitative data on how strong IP protections lead to increased innovation, using examples from startups and businesses.
   - **H2:** Analyzing case studies where IP policies have contributed to greater digital inclusivity.
   - **H3:** Examining surveys and research on digital literacy and IP awareness to assess barriers to IP-driven growth.

The study aims to establish a relationship between intellectual property rights and digital inclusivity, demonstrating how well-structured IP policies can contribute to bridging the digital divide in India.

Findings and Discussion

1. **IP and Digital Innovation:**
   - Intellectual property laws encourage digital content creation and technological advancements.
   - Patents, trademarks, and copyrights support startups and technology-driven enterprises in India.
2. **Challenges in Bridging the Digital Divide:**
   - Unequal access to digital infrastructure, particularly in rural areas, limits the effectiveness of Digital India.
   - High costs associated with patent filing and IP protection create barriers for small businesses and individual innovators.
   - Lack of digital literacy and awareness about IP rights prevents equitable participation in the digital economy.
3. **Policy Initiatives and Global Comparisons:**
   - Countries like the US and China have integrated IP frameworks with digital policies to foster innovation.
   - India's Startup Intellectual Property Protection (SIPP) scheme and the National IP Policy have helped in increasing patent filings but need more outreach.
   - Public-private partnerships can enhance digital infrastructure and IP accessibility.

Conclusion

Intellectual property is an important component of innovation as part of the Digital India Initiative, but the differences in digital access hamper all of its possibilities. Strengthening IP policies, raising awareness and investing in digital infrastructure are important to reduce the digital gap. A joint approach between government, industry and scientific communities can contribute to a comprehensive digital economy where innovation benefits all sectors of society.

In a digital development environment, the role of intellectual property in promoting comprehensive development cannot be overstated. Digital India's success relies on a balance between protecting intellectual property rights and equitable access to technology, ensuring innovation provides a poorly-provided company segment. Enhanced IP policies using simplified recording procedures, financial support for startups, and educational initiatives for PI recognition lead to broader participation in the knowledge economy. Furthermore, overcoming digital differences requires coordinated efforts to expand broadband internet connectivity, particularly in rural areas, and is necessary in implementing policies that promote accessible digital tools. Public-private partnerships can play a critical role in creating digital infrastructure and providing the support needed for IP-managed companies. Additionally, promotion of open source and knowledge sharing innovation platforms allows wide access to digital resources, empowering entrepreneurs and small businesses.

World best practices show that countries with well-integrated IP executives have created robust digital savings. India can extract lessons from these models and improve collaboration between intellectual property firms, research institutes and technology companies to create innovative ecosystems. Promotion of digital literacy and training also ensures that people can use their intellectual property for economic and social mobility, regardless of their socioeconomic origins.

To achieve the vision of a truly digital and inclusive India, the government must prioritize an adaptive policy framework that accommodates technological advancements while ensuring fair and affordable access to IP rights. Future research should focus on empirical studies assessing the impact of various IP policies on bridging the digital divide and identifying strategies to make digital India more accessible to marginalized communities. By adopting a holistic approach, India can exploit intellectual property not only as a tool of economic growth, but as a means of empowering millions of people to participate in the digital revolution. Thanks to the innovation, collaboration and development of strategic policies, Digital India can become a model to take advantage of intellectual property in order to create a more equitable and inclusive digital future.

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A Study on Contributions of Housing Finance Companies towards Service Sector in India

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ABSTRACT
The housing finance sector in India has grown significantly over the past decade due to heavy demand for housing supported by government policies and digital technology This paper examines key trends from 2014 to 2024, including the rise in housing loans, growth of Housing Finance Companies (HFCs), and the contribution of the service sector to the economy. Government initiatives like Pradhan Mantri Awas Yojana (PMAY) and RERA have encouraged homeownership, while digital lending, AI-based credit scoring, and fintech innovations have made loans easier to access. Despite challenges like the COVID-19 pandemic, the sector has remained strong and is expected to grow further. By 2024, housing loans may reach 13% of GDP, and HFCs could grow by 12-14%. The study highlights how technology, financial inclusion, and better regulations are shaping the future of housing finance in India. (KEYWORDS : Housing, Housing Finance Companies, Contribution towards service sector)

INTRODUCTION :

The service sector is an important part of India's economy, helping with GDP growth, job creation, and financial progress. **Housing Finance Companies (HFCs)** play a key role in this sector by making home loans easier to access and manage. The need for housing finance has grown steadily due to **urbanization, higher incomes, government support, and digital improvements in financial services.**

Over time, Housing Finance Companies (HFCs) have changed the way they operate. Earlier, they used traditional methods, where getting a home loan involved a lot of paperwork, long processing times, and in-person visits to banks or financial offices. However, with advancements in technology, HFCs have transformed into modern, digital-based financial service providers.

Now, most HFCs offer quick and hassle-free loan approvals through online applications, reducing the time it takes to process loans. Borrowers can also choose from flexible repayment plans, they can adjust their monthly payments based on their income and financial situation. HFCs provide personalized loan options by analyzing a customer's financial history, income, and credit score. This helps in offering home loan products that best suit an individual's needs. HFCs have moved from slow, paperwork-heavy processes to fast, digital, and customer-friendly services, making it easier for people to buy homes.

Government policies like Pradhan Mantri Awas Yojana (PMAY) and the Real Estate Regulation and Development Act (RERA) have made housing finance stronger by ensuring that home loans are easier to access and more transparent for buyers. These policies help people, especially first-time homebuyers, get financial support and protect them from unfair practices in the real estate market. In addition, new technologies like AI-based credit scoring which helps lenders check a person's loan eligibility quickly, big data analytics which analyzes financial patterns to reduce risks, and digital KYC which allows online identity verification have made the loan process faster, safer, and more convenient for customers.

LITERATURE REVIEW

Himendu P. Mathur (2001) has the opinion that the wind of liberalisation has opened up the new competitive banking industry. He identified that the New Generation Banks with huge capital, latest technology, innovative and globally tested products and good customer services were leading fast with sufficient number of customers. As far as the public sector banks are concerned, the advent of IT gives way to anytime banking, anywhere banking, personal banking, home banking, smartcard, digital cash etc.

Pushpangathan G. (2003) in his study evaluated the quality of customer service rendered by the public sector banks compared with private sector banks and foreign banks in Kerala. Major findings were (1) public sector banks fail to fulfil the expectations of customers in facilities and amenities, (2) dissatisfaction among customers about the behaviour of bank staffs in the public sector and private sector banks and (3) foreign banks and private sector banks are providing better personalized services than public sector banks

Sivam. A (2003) analysed that Delhi was experiencing the highest population growth rate among mega cities in India. This research paper studied the problems linked with the housing delivery system in Delhi city and suggested a broad guideline for decision makers to better it with the help of several sectoral approaches.
Rawani & Gupta (2002) pointed out that in the current era of competition, the use of computers and allied technologies has become inevitable and Information System (IS) plays an important role. The scientist endeavored to investigate experimentally the distinction in the job of IS in the financial business, for example between open part, private division and outside area banks working in India. The investigation showed that it assumes a steady job in open division banks and a key job in the private and remote banks. The chi - square test was the measurable strategy applied here.
Pema Lama (2014) conducted a study to evaluate the role and performance of National Housing Bank, institutional performance of key housing finance providers and major problems and future prospects of the housing finance sector in India. From the study, it was revealed that the housing finance agencies in India are engaged in a range of activities for low- and moderate-income housing segments. It also revealed the institutional performance of public sector banks, HFCs and housing schemes of Government of India.
Vinayagamoorthy A. and Merlin Sheela Magdaline. J (2015) uncovered that banking is considered as an assistance industry where accentuation is given to set up benchmarks of productivity, concentrating on specialty clients, giving great client support and realizing usable effectiveness by utilizing high – end innovation. The private area banks have made financial increasingly effective and client benevolent.
Mahabir Singh Narwal, Sushama Rani & Radhika (2013) made an evaluation about the factors which influences the prospective home loan borrowers towards the home loan schemes of different banks. Discovering customer preferences enable the banks to sell their products and services efficiently. In the present study, the data were collected from 200 respondents by applying five point Likert scale and analysed with the help of factor analysis and ANOVA. The findings revealed that the customer preferences for home loans are affected by customer friendly environment, processing and disbursing, the rate of interest, repayment options etc.

NEED OF THE STUDY

The housing finance sector is an important part of India's service sector because it helps to grow real estate industry and supports financial inclusion by making home loans available to a wider population. Housing Finance Companies (HFCs) play a key role in this by providing easy and structured home loan options, which contribute to India's economic progress. Study is also essential to know its contributions to the economy, growth and challenges faced by Housing Finance Companies (HFCs), impact og Government policies, role of technology and promotion of financial inclusion.

OBJECTIVES

1) To analyse the Housing Finance growth trend in Indian since 2014-2024.
2) To study the contributions of Housing Finance Companies towards service sector.

RESEARCH METHODOLOGY

This study is conducted with secondary data only. The information is collected from the published data like reports and annual statement and from the official website of national housing bank, housing finance companies etc.

ANALYSIS OF HOUSING FINANCE COMPANIES CONTRIBUTION

Housing finance companies (HFCs) play a crucial role in boosting the service sector by enhancing financial accessibility, generating employment, and contributing to economic growth. More than 50% service sectors contribution to GDP whereas Housing Finance contribution in the year 2023 is 12.3%. The following table shows **contribution of Housing Finance Companies (HFCs) to India's service sector over the last 10 years**:

Year	**Service Sector Contribution to GDP (%)**	**Housing Loan as (%) of GDP**	**Growth in Housing Finance Companies (%)**
2014	53%	9.2%	8-9%
2015	53.5%	9.5%	9%
2016	54%	10%	10%
2017	54.3%	10.5%	11%
2018	55%	11%	11.5%
2019	55.5%	11.2%	12%
2020	50.9% (COVID Impact)	11.5%	8%
2021	52%	11.8%	9.5%
2022	53%	12%	10%
2023	54%	**12.3%**	**10-12%**
2024	54.5%	**13%**	**12-14%**

India's housing finance sector has grown a lot in the last ten years. This growth is due to government policies, more people moving to cities, digital technology, and strong rules to support the industry. This study looks at how the service sector helps the economy, how housing loans have increased, and how Housing Finance Companies (HFCs) have expanded over time.

2021–2024: Post-pandemic recovery and digital advancements led to a rebound, with suggesting that the service sector's GDP contribution will reach 54.5% by 2024.

Service Sector Contribution to GDP (%)

The service sector plays a major role in India's economy, covering industries such as financial services, information technology (IT), real estate, and housing finance. Over the years, this sector has grown steadily, reflecting economic progress, changing consumer behavior, and technological advancements. Below is a detailed look at its contribution to India's GDP over the last decade.

2014–2019: Steady Growth in the Service Sector

Between 2014 and 2019, the contribution of the service sector to India's GDP increased gradually from 53% in 2014 to 55.5% in 2019. Several factors contributed to this steady rise such as economic growth, rising income, urbanization, expansion of Housing Finance etc.

2020: COVID-19 Impact and Decline in GDP Contribution

The COVID-19 pandemic impacted severe economic slowdown, leading to a decline in the service sector's contribution to GDP. In 2020, the service sector's share declined to 50.9%, the lowest in recent years. This may be due to lockdowns and business disruptions, job losses and reduced incomes, decline in real estate and Housing Finance.

2021–2024: Recovery and Growth

After the pandemic, the service sector began to recover, supported by economic reopening, government stimulus packages, and digital transformation. By 2021, the sector started regaining its strength, and by 2024, it is projected to contribute 54.5% to GDP. Digital Advancements: Increased adoption of online financial services, e-commerce, and fintech solutions helped businesses grow despite pandemic challenges. The main reasons for the recovery and growths are lower interest rates, digital lending, Government support, foreign and domestic investments etc.

Housing Loans as a Percentage of GDP

Housing loans plays vital role in India's economic growth, as they facilitate homeownership, boost the real estate sector, and improve financial accessibility. Over the years, the percentage of housing loans in India's GDP has steadily increased, reflecting rising demand for homes, easier access to loans, and supportive government policies. Below is a detailed analysis of the trends in housing loans as a percentage of GDP over the last decade

Between 2014 and 2016, India's housing loan market grew steadily, with the housing loan-to-GDP ratio increasing from 9.2% to 10%. This was mainly due to rapid urbanization, as more people moved to cities for jobs, increasing the demand for housing. Additionally, the launch of the Pradhan Mantri Awas Yojana (PMAY) in 2015 provided subsidies and financial support to first-time homebuyers, especially those from low- and middle-income groups. Banks and Housing Finance Companies (HFCs) also expanded their services, making home loans more accessible with lower down payments and flexible repayment options. Government policies promoting affordable housing and infrastructure development further boosted housing finance.

Between 2017 and 2019, housing loans grew at a faster pace, with the loan-to-GDP ratio rising to 11.2%. The real estate sector attracted more investment, with developers focusing on both affordable and luxury housing. Banks and HFCs introduced easier lending policies, making it simpler for people to obtain home loans. The introduction of the Real Estate Regulation and Development Act (RERA) in 2016 increased transparency in property transactions, giving buyers more confidence. Additionally, lower interest rates made housing finance more affordable, driving further demand for home loans and contributing to economic growth.

Despite the challenges posed by the COVID-19 pandemic in 2020, the housing loan-to-GDP ratio continued to rise to 11.5%. The Reserve Bank of India (RBI) reduced repo rates to historic lows, making home loans cheaper and encouraging buyers to invest in property. The work-from-home trend led to a higher demand for bigger homes, increasing the need for housing loans. The government also provided financial relief measures such as loan moratoriums and continued subsidies under PMAY, which helped stabilize the housing finance sector. Additionally, banks and HFCs adopted digital lending, allowing people to apply for home loans online without visiting branches. Despite the overall economic slowdown, housing finance remained strong, ensuring steady loan growth.

Growth in Housing Finance Companies (HFCs) (%)

HFCs have played a crucial role in financing home purchases, especially in underserved segments like affordable and semi-urban housing.

2014–2016: Growth in HFCs remained between **8-10%**, fuelled by increasing mortgage lending, real estate expansion, and government subsidies.

2017–2019: Growth peaked at **12%** as non-banking financial companies (NBFCs) and fintech players entered the housing finance market.

2020 (COVID-19 Impact): Growth declined to **8%** due to liquidity constraints and economic uncertainty, but remained positive due to demand in mid- and low-income housing segments.

2021–2024: The sector rebounded with growth rising to **12-14%** driven by digitization, innovative mortgage products, and embedded finance solutions.

LIMITATIONS

This paper deals only the role of housing finance companies contributing towards service sector in India considering only last 10-year data. All information gathers from the published data and existing reports. Current study focuses on institutional contributions and not covered customers perspective.

CONCLUSION

The housing finance sector in India has undergone a transformative shift, with digitalization, policy support, and growing demand acting as key drivers. Despite setbacks like the COVID-19 pandemic, the sector has shown resilience and continues to thrive, making homeownership more accessible for millions. The future of housing finance looks promising, with technological innovations, embedded finance, and regulatory frameworks playing a pivotal role in shaping the industry.

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Stress Reduction Interventions: A Study of Effectiveness Among Women Employees in Private Industrial Unit

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Abstract
This study investigates the effectiveness of various stress reduction interventions specifically tailored for women employees in private industrial units. In the current world, women perform significant and varied roles in their families and at work. They used to be homemakers, but now women have made a mark in every industry. Notwithstanding the difficulties they have experienced at work, the younger generation is pursuing their dream careers. In the workplace, disputes multiply. It is impossible to completely avoid stress in the workplace. This study shows that the positive and negative stress causes and it is important for growth of every women employees and private industrial unit, also give various management techniques to managed the stress and work life balance of women employees. The majority of women employees have been looking for ways to reduce stress, as well as the causes, benefits, and management of both positive and negative stress. In the workplace, it is becoming a bigger concern, and there are several ways to deal with it. Furthermore, the study highlights the importance of organizational support in implementing these interventions effectively. Recommendations for future practices include ongoing training for management and the establishment of a supportive workplace culture that prioritizes employee well-being

Key Words: Women Employees, Causes of Stress, Positive and Negative Stress, Stress Management Techniques.

1) INTRODUCTION

The Latin word "stringere," which meaning struggle, strain, adversity, or affliction, is where the term "stress" originates. It alludes to stress, annoyance, strife, and pressure. Muscle tension, an increase in blood pressure, irritability, and depression are among symptoms. For women employees who experience significant levels of stress, stress management is necessary. The goal of stress management is to control the level of stress experienced by women employees in the workplace. The women employee needs to maintain time management since it affects how they perceive their destination. Also, women employees must manage their both mental and physical welfare with regular exercise, a healthy diet, ample relaxation, and care rituals. To learn more about the origins, symptoms, and repercussions of both positive and negative stress on the health of women employees. Then, one might take action to downsize or manage the workforce more effectively.

In today's fast-paced industrial world, job stress has arisen as a major worry, especially among female employees who frequently manage many duties and responsibilities. Women in private industrial units confront specific obstacles, such as gender biases, work-life balance issues, and high job demands, which can compound stress and have a negative impact on mental health and job performance. The purpose of this study is to investigate the efficacy of various stress-reduction techniques designed specifically for female employees in these contexts. This study examines a variety of strategies, including mindfulness practices, time management training, and organizational support networks, to discover the most effective methods for stress reduction and general well-being. Understanding the efficacy of these treatments is critical for creating a better work environment, increasing employee happiness, and eventually increasing productivity in the industrial sector. We hope that this study will provide significant insights that can be used to enhance organizational policies and practices focused at assisting women in the workforce.

2) NEED OF THE STUDY

Workplace stress was higher for women than for males. Good stress management enables a person to release the grip that stress has on their life, enabling them to be healthier, happier, and more effective. A balanced existence with time for job, relationships, relaxation, and overcoming problems is the final aim of the study. Furthermore, as employers increasingly realize the importance of mental health, this study adds to the greater conversation on workplace wellness by emphasizing the role of supportive workplaces in stress reduction. Finally, the study aims to empower women employees by providing them with the tools and resources they need to handle stress efficiently, resulting in a healthier and more fair workplace.

3) PROBLEMS OF STUDY

Managing stress among working women employees is the current issue. Several working women now report higher levels of stress in the working place. Every woman working in the field found it challenging to balance work and family obligations. That causes a serious health issue. Employees' family and personal lives can be improved with the aid of stress management and benefit for employees and organization also.

4) OBJECTIVE FOR THE STUDY

1) To Study the causes of stress among women employees in private industrial unit.
2) To Understand the effects of stress on health of women employees in private industrial unit.
3) To recognize the many stress-reduction strategies and tactics for women employees in private industrial unit.

5) REVIEW OF LITERATURE

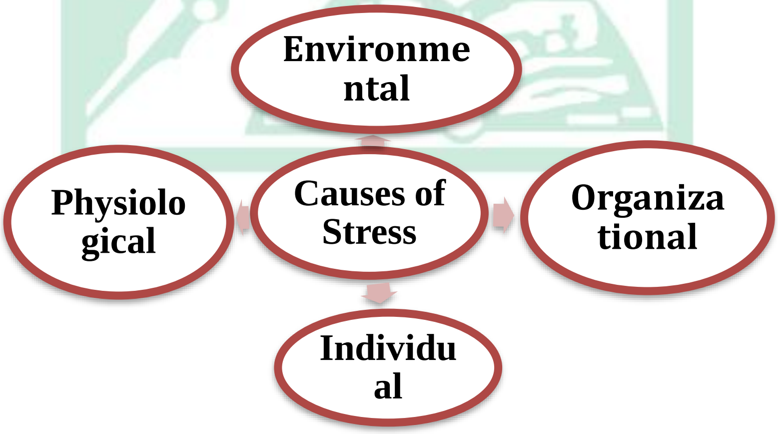
1. **Bharathi and Gupta (2017)** in this study review a large body of literature to define efficiency and job stress components. To create the conceptual framework, the contributing components have been identified. Work overload, job protection, role conflicts, changing jobs, work engagement, work satisfaction, role fit, work-life balance, resource constraints, organizational commitment, interpersonal relationships, organizational support, and gender inequality are some of the factors that can contribute to job stress. Timeline, managers' skill levels, pay, structures and processes, teamwork, absenteeism, and presenteeism are some of the factors that affect productivity.
2. **M Kanagaraj and S Raja (2020)** As a person sees the reality of the work after the training time, stress sets in for them. The management is crucial because it can increase employee tension as well as help to lower that stress. The management is to blame because, in overall, all businesses are profit-driven and do not prioritise their employees. As a result, businesses take on numerous projects and get customer demands, which are then imposed on lower-level workers. Workers experience physically and mental stress due to heavy workloads and tight deadlines. Many businesses require additional work, which includes working past the regular workday and on weekends and holidays. Although while the human resources staff runs numerous programmes for the employees, such as fun Fridays, DJ nights, and other events, sadly they're not effective in decreasing stress.
3. **K. Anitha (2018),** in this study shows that there are many working women in India who are under stress. The research that has been done thus far is to study the stress and associated issues that affect working women employees. To examine the data, the questionnaire tool was used. Eventually, this study came to the conclusion that working women employees had different coping mechanisms for stress in both their social and working lives. As a result, advice is given on how to manage their own benefits to minimize stress.
4. **Srilalitha Sagi and Jayasri Puli (2022)** in this study shows that, Workplace stress is a troubling health issue that needs to be averted with the right steps because it could have major socioeconomic repercussions. Any workplace's atmosphere has a significant effect on the physically and mentally health of its workers. The research was carried out in Visakhapatnam, one of Andhra Pradesh's greatest important industrial cities in India. Rotation working hours and less social supports were statically important in the multivariate analysis of work stress in connection to all the factors, we discovered. In the end, workplace stress affects how productively women employees can contribute to the firm.

6) RESEARCH METHODOLOGY:

The study's based on secondary sources of data, including books, journals, and websites, were consulted for this study.

7) CAUSES OF STRESS:

There are numerous factors that contribute to stress.



1) Environmental - women employees may always be faced with competing and intense demands to adapt to their surroundings. Climate, loudness, crowded, waste, traffic, dangerous and subpar housing, and crime are a few examples of environmental stressors.

2) Organizational: factors such as wage disparity, stringent rules and regulations, peer pressure, conflicting or unclear goals, poor communication, fewer job vacancies, lack of employee commitment in fundamental leadership, excessive director control over employees, etc.

3) Individual: Components such as the worker's varied emotions for his or her friends, partners, superiors, and subordinates, the incapacity to recognize these desires, and the battle at work that results in representational pressure. Other character traits including being worried, experiencing extra pressure, assertive, inflexible, and others are other human factors that contribute to stress. Stress is also brought on by personal financial problems, unanticipated career changes, and family troubles. Timelines, money issues, job interviews, presentations, arguments, demands on your focus and effort, the death of a loved one, divorced, and co-parenting are a few examples of social stressors.

4) Physiological - Our bodies might experience situations and conditions as physiological stressors. Women employees fast growth, menopause, disease, ageing, giving birth, accidents, inactivity, inadequate diet, and sleeping problems are a few examples of physiological stressors.

8) MANAGEMENT OF STRESS

If a woman's workplace is constantly demanding, stress management is making modifications to one's lifestyle and learning to relax. When our bodies believe they are in risk, stress is truly a survival reaction. While addressing the underlying causes of stress, every woman employee travels a different path. An elevated heart rate, disturbed sleep, high blood pressure, irritation, headache, or tight muscles are some signs of stress that women may experience. Private sector workers are exposed to stress and react in various ways. Because of how hectic and complicated life is nowadays, stress can have both positive and negative effects.

I) Positive Stress

When a circumstance presents a chance for one to achieve something, stress is said to be beneficial. Since without it a person lacks the edge needed for top performance, stress is frequently seen as a motivator. Positive stress provides us the will to succeed, motivates us to advance in our careers, and encourages us to reap the benefits of positive stress management. Stress management is important because it seeks to create an environment where both the organization and the women employees may benefit.

A) Private Industrial Unit Benefits:

• Employee satisfaction
• Evaluated increase in duties
• Better teamwork and communication
• Motivate employees
• Reduce employee turnover

B) Women Employee Benefits:

• Decreased stress
• Less absenteeism due to stress-related disorders
• Less uncomfortable, increasingly productive work environment
• Assistance with child/eldercare plans
• Improved spirit
• Less negative pressure

II) Negative Stress

Stress has an impact on a women employees physical, mental, and behavioral health and is linked to a number of health issues.

1) Initial eating disorder
2) Stomach problems
2) Skin reaction
4) Sleep issues
5) Inability to focus
6) Heart issues
7) Reduced immune reaction
8) Anxiety and trembling
9) Issues with fertility

9) STRATEGIES FOR MANAGING STRESS

Private industry's stress management techniques include promoting increased corporate communication with women employees to prevent position ambiguity or conflict. Promote the engagement of women workers in decision-making. This will lessen role-related stress; Increase the freedom, responsibility, and timely feedback for the women employees; Realistic, energizing, and specific objectives should be set for the group. Feedback regarding their progress towards these objectives must be offered to the women employees; Establish a fair and just wage system, encourage decentralization, and distribute rewards equally. Encourage job rotation and job enrichment, establish a fair and secure work environment, have a successful recruiting and orientation process, and recognize the efforts of the staff when they surpass their goals. To unwind while working, take regular breaks. Women employees can fulfil deadlines, deal with demand, and prevent stress by practicing efficient time management; do hard work try to reach your objectives, but don't sacrifice your family, health, or relationships with your peers in the process. Engage in daily activity. It promotes a good lifestyle, keeps you in shape, and aids in good blood circulation. Have a regular sleep schedule, drink lots of water, and practice healthy eating. encourage the use of relaxation activities including yoga, music, and meditating; Optimism for their work should be a trait of all employees. This social network will aid women employees in overcoming stress; counselling is an excellent method for doing so. Women employees receive career counselling as well, which enables them to feel less uncertain about their careers; find a lighthearted method to decompress, like making jokes, playing game.; and avoid becoming too self-absorbed. Give attention on job. Support others.

10) SCOPE OF STUDY

1) Stress will negatively impact individuals at work and in their personal lives. if stress is appropriately managed.
2) It improves relationships both on and off the job, which is advantageous to both individuals and the business in terms of output. Also, it promotes improved communication and teamwork.
3) There will be a low employee turnover rate and a lower absenteeism rate.

11) SUGGESTIONS

Given that the majority of women employees report feeling stressed at work, private businesses should take proactive measures to reduce stress among their women employees so that they can perform as effectively and efficiently as possible. Employees who are women should be treated with respect and given the same opportunities as males to demonstrate their worth. Women can receive therapy, guidance, top-notch conscious awareness programmes, and psychological assistance. In order to allow employees more time for themselves, their families, and other social obligations, the five-day workweek concept can also be applied in private industries. Indirectly, this lessens the strain that additional job demands have on industrial sector workers. For the women employees of private industrial sectors, YOGA camps, meditation camps, and stress-relieving activities may be organized. Cleanliness and safety should be improved in the workplace. All departments should have a clear division of labour. The working climate should be cordial between employees and management.

12) FINDINGS OF STUDY

The overwhelming majority of women employees fear the pressure that poor quality work places on them. The stress on women employees is growing due to demands for basic necessities that are connected to a growing range of new skills, the weight of higher profitability and the nature of employment, time constraints, and demanding jobs. interpersonal relationships, control over the situation, emotional variables, the task at hand, the additional time commitment, and the scope of the activity. In contrast to their different groups, the anxiety experienced by women employees varies depending on their jobs, duties, and personal pressure bearing capacity. Contrarily, stress and performance are correlated.

13) CONCLUSION

Today's working women face an increasing number of stress-related issues at their places of employment. A women employee may show signs of high levels of stress physically, mentally, or behaviorally. It causes a variety of health issues. Working women frequently balance multiple tasks at once while also caring for their families, which causes stress in them. They can live a healthy life and minimize their stress with the aid of stress management.

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A Study on How Quick Commerce Shapes Genz's Shopping Habits

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Abstract

Quick commerce has transformed the shopping experience. Talking about a generation that is Mobile Savvy and wants everything at their fingertips. This shift in the shopping landscape has shifted consumer demand from traditional commerce to Quick commerce.

The rise of platforms like Blinkit, Zepto, and Swiggy Instamart has fueled a transition from planned shopping to impulse buying. This study discusses how Quick Commerce influences GenZ's purchasing behavior, including buying frequency, decision-making processes, and brand preferences.

This research paper will help businesses to study buying behavior and what factors influence GenZ's to buy products from Quick commerce applications or website.

Introduction

Quick Commerce is a new revolution to the shopping experience among GenZ's. Quick commerce is known for its fast delivery, usually within minutes. Q-commerce has changed consumer expectations and purchasing behavior. Unlike traditional e-commerce, which focuses on convenience with a longer time frame, Quick Commerce prioritizes speed and accessibility. Genz is the age group that is born between mid -mid-1990s and early 2010's. Genz is usually influenced by offers, discounts, and anything that is typically digital. Platforms like Blinkit, Zepto, and Swiggy Instamart cater to their need like home delivery with fast delivery. This led to a shift from planned purchases to impulse purchases.

By understanding the dynamics, business can better change their targeted marketing strategies, product offerings and digital engagement to effectively meet the evolving needs of Genz.

Objectives

- To analyze the key factors influencing GenZ's preference for quick commerce, including convenience, instant gratification and digital accessibility
- To assess the role of digital marketing strategies like social media influencer marketing and personalized recommendations in driving GenZ's engagement with quick commerce.

Review of literature

1. **UNDERSTANDING GEN Z CONSUMER BEHAVIOR IN E-COMMERCE: TRENDS SHAPING THE FUTURE**

   In the dynamic realm of e-commerce, the rise of Generation Z as a formidable consumer force is reshaping traditional shopping paradigms. GenZs are the age group that are born between the mid-1990s and early 2010. This generation exhibits unique behaviors and preferences that usually influence the e-commerce landscape. To thrive in this market, businesses must grab the opportunity based on trends and understand GenZ's shopping habits.

   Mobile phones being their favorite gadget, online shopping has become a trend among this age group. Authenticity and transparency has reduce because of mobile phones but tracking buying behavior has become easy. Personalized marketing has seen the other side of marketing and advertising. In summary, Gen Z's consumer behavior is characterized by a strong emphasis on mobile-first shopping, authenticity, sustainability, and personalized experiences. E-commerce businesses that adapt their strategies to align with these trends and leverage successful brand examples will be well-positioned to capture the attention and loyalty of this influential consumer segment in the digital age.

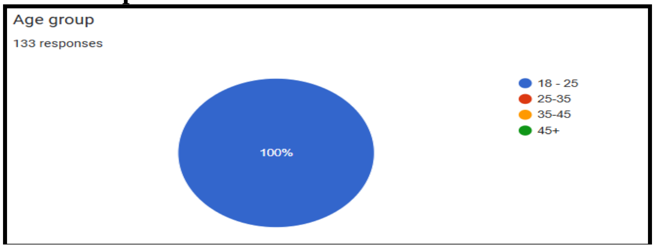
2. **THE INFLUENCE OF GENERATION Z CONSUMER BEHAVIOR ON PURCHASE MOTIVATION IN E-COMMERCE SHOPPE**

   The findings reveal that site features have a direct impact on online impulse purchase behavior, but not privacy security. Online shopping services have little direct impact on online impulse purchases. Site qualities, privacy security, and online buying services all have an impact on purchasing experience. Shopping pleasure increases online impulse buying behavior.

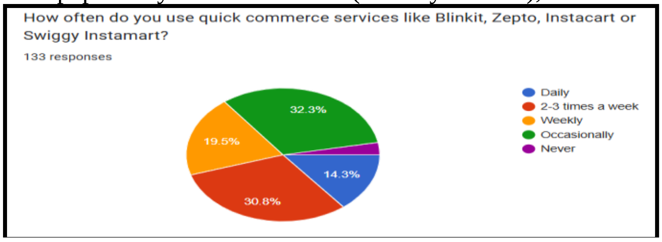
Methodology

The research was based on firsthand data collected through a Google Form survey. This survey was shared with people from different age groups who used Quick commerce like BlinkiT, Zepto, Swiggy Instamart,etc.

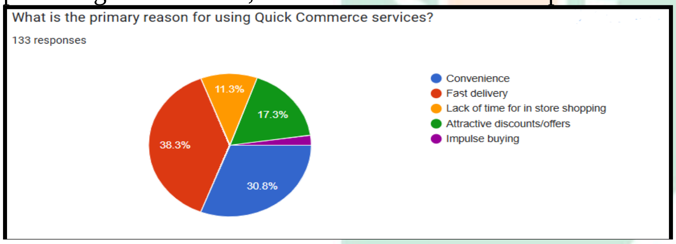
Data Interpretation



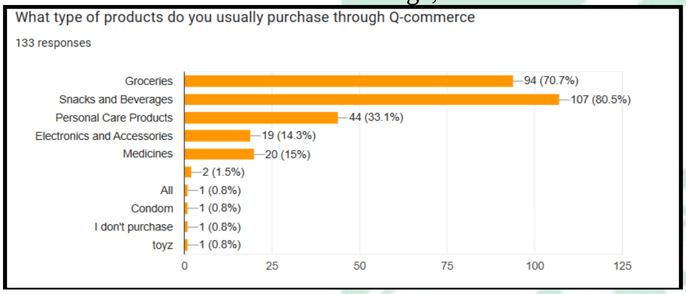
This paper only considers GenZ (18-25 years old), with 100 % of 133 respondents in this age group.



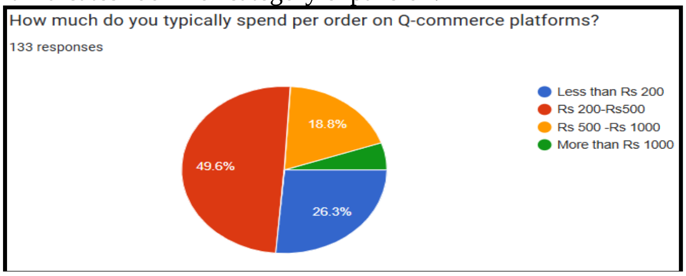
32.3% use Quick Commerce occasionally, this shows that they rely on q-commerce for urgent and special needs rather than regular. 30.8% use it 2-3 times a week, showing rate of convenience. 19.5% use it weekly, this shows that it becomes a habitual part of their routine. 14.3% use it daily, highlighting a segment that depends on quick commerce. A negligible percentage never use it, which shows almost all respondents engage with these services to some extent.



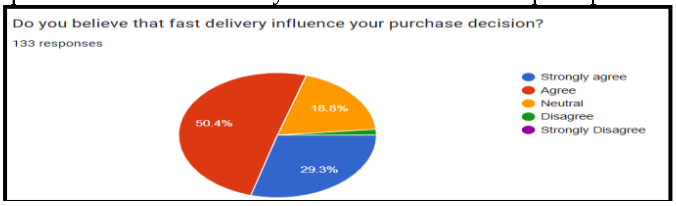
The main purpose of using quick commerce by GenZ is for fast delivery, convenience showing their need for speed and ease. Lack of time also influences usage, while discounts and impulse buying play a smaller role.



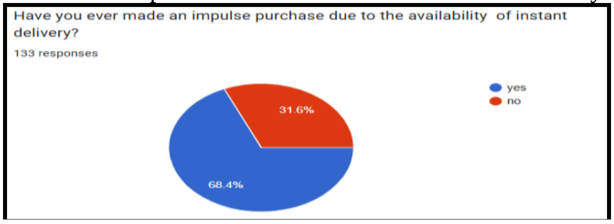
GenZ usually buys snacks and beverages via Quick Commerce. Groceries are driven by convenience and instant needs, while Personal care has lesser demand than snacks and beverages. While electronics and medicines have limited traction, it indicates room for category expansion.



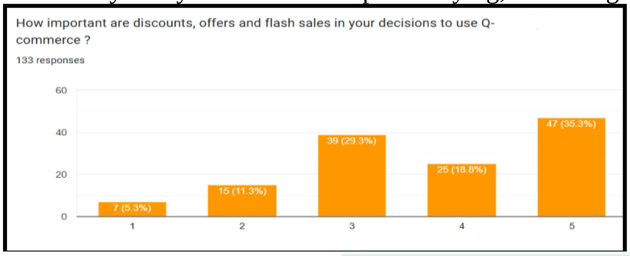
Nearly 50% of respondents spend Rs 200-500 per order, while 26.3% spend less than Rs 200, indicating affordability is key. Only 18.8% spend Rs 500-100 and only a small population of respondents spend over 1000 Rs. This suggests that quick commerce is mainly used for small and frequent purchases.



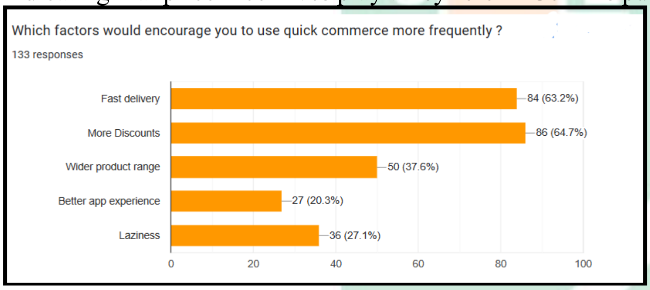
GenZers are attracted to Fast delivery, which affects their purchase decision. 50.4% strongly agree, and 29.3% agree because their purchase decision is based on fast delivery



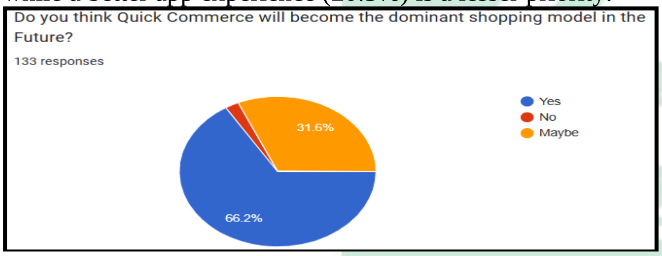
Impulse purchases are common among Gen Z, with 68.4% admitting to buying impulsively due to instant delivery availability. Only 31.6% resist impulse buying, indicating that quick commerce strongly influences unplanned purchases.



Discounts and offers strongly influence quick commerce usage, with 35.3% rating them as extremely important (5) and 18.8% as very important (4). While 29.3% remain neutral (3), only a small segment (16.6%) finds them less significant, indicating that price incentives play a key role in Gen Z's purchasing decisions.



The top factors encouraging frequent use of quick commerce are more discounts (64.7%) and fast delivery (63.2%), highlighting price sensitivity and convenience. A wider product range (37.6%) and laziness (27.1%) also play a role, while a better app experience (20.3%) is a lesser priority.



A majority (66.2%) believe that Quick Commerce will become the dominant shopping model in the future, while 31.6% are uncertain. Only a small fraction disagrees, indicating strong optimism about its long-term growth.

Recommendations

1. The main component on which Quick Commerce is dependent is fast delivery, an optimized delivery system should be made to maintain and improve speed.
2. The company should streamline the app experience for quick and faster ordering and make use of AI for understanding algorithms like continues delivery.
3. The company should offer features that cater to instant needs and time-saving. For e.g. suggestions like frequently bought together.
4. Since the customers are highly influenced by promotions and loyalty programs, the company should track their purchases and recommend products of the same brand.
5. Offers and deals attract customers. Companies should offer discounts and coupons within the application. This will attract more purchases by the customers.
6. Offering budget-friendly offers will attract more GenZ. Since most of their purchases are between Rs 200- Rs 500.
7. More offers should be available in the category of snacks, beverages, and groceries as these are the most popular products bought on Quick Commerce websites.
8. The company should be well prepared for high-demand days or times. An optimized inventory should be maintained by the company so that they can meet the heavy demand.

9. The company should try some trial and error in other products like electronics and medicines since these can be the new segment the company can open its business.
10. Since this paper talks about GenZ and their choice of purchase, the companies should understand their psychology and push products based on the categories that appeal to them.
11. Design app interfaces to encourage impulse buys, such as highlighting trending items or offering limited-time deals.
12. Enhance features like push notifications and in-app promotions to trigger unplanned purchases. Through research we found that a lot of respondents
13. The company should keep upgrading the features on a continuous basis. For example adding build in AI tool. Understanding consumer preference according to time they are ordering food.
14. Listen to what customers say. Customer is the king. Improving the features or also adding goods according to customer needs will enhance the app. Since GenZ are more techno-savvy compared to millennials they are constantly connected to technology to make their work easy.
15. Since Quick commerce is backhanded by dark stores, a proper infrastructure should be maintained so that faster delivery can be made
16. Companies should add more products like FMCG to their applications and should also enhance a feature to deliver it anywhere.
17. Since GenZ are attracted towards social media, a proper advertising campaign should be made, so that there is higher retention of products available on Quick commerce application.
18. Tailor messaging to emphasize speed, convenience, and affordability.

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International Finance: Trends, Challenges, and Strategies in a Globalized Economy

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Abstract
International finance plays a crucial role in the functioning of the global economy, facilitating trade, investment, and economic development across borders. This research paper explores the major components of international finance, including foreign exchange markets, international financial institutions, cross-border investment, and global financial regulation. It analyzes recent trends, key challenges, and strategic approaches adopted by nations and corporations to navigate the complexities of international financial environments. The paper concludes with a forward-looking perspective on the evolution of international finance in the face of technological innovation, geopolitical shifts, and emerging market dynamics.

1. Introduction
International finance, also known as international monetary economics or international macroeconomics, is the branch of financial economics broadly concerned with monetary and macroeconomic interrelations between two or more countries. It examines the dynamics of exchange rates, foreign investment, and how these affect international trade.
The increasing interconnectivity of global markets has elevated the importance of understanding international finance. With the rapid expansion of multinational corporations, global supply chains, and cross-border capital lows, the need for coherent financial strategies has become paramount. This paper aims to explore these complexities, assess key components of the field, and evaluate strategic responses to contemporary challenges.

2. Historical Overview of International Finance
The history of international finance is marked by several pivotal events and phases that shaped the global financial landscape. From the Gold Standard era to the establishment of the Bretton Woods system and the rise of loathing exchange rates, each phase has contributed to the current financial framework.
During the Gold Standard period (1870-1914), currencies were pegged to gold, ensuring stability but limiting monetary flexibility. The collapse of the system during World War I and the subsequent Great Depression highlighted its weaknesses. Post-World War II, the Bretton Woods system emerged, creating institutions such as the IMF and World Bank to stabilize international financial relations. However, this too collapsed in the early 1970s, giving way to the current regime of loathing exchange rates.

3. Key Components of International Finance
International finance comprises several interrelated components that facilitate the movement of capital, management of risk, and coordination of policies across borders. These include foreign exchange markets, international financial institutions, cross-border investments, and global financial instruments.
3.1 Foreign Exchange Markets
The foreign exchange (forex) market is the largest and most liquid inancial market in the world. It facilitates the conversion of one currency into another, enabling international trade and investment. Participants include central banks, commercial banks, corporations, hedge funds, and retail investors. Exchange rates in the forex market are influenced by macroeconomic indicators, political stability, interest rates, and market sentiment.
3.2 International Financial Institution
Institutions such as the International Monetary Fund (IMF), World Bank, and Bank for International Settlements (BIS) play vital roles in the global financial system. The IMF provides financial assistance and policy advice to countries facing balance-of-payments issues. The World Bank supports long-term economic development and poverty reduction through loans and grants. The BIS fosters international monetary and financial cooperation among central banks.
3.3 Cross-border Investment and Capital Flows
Cross-border investments include foreign direct investment (FDI) and portfolio investment. FDI involves a long-term interest and significant control over a foreign enterprise, while portfolio investment consists of equity and debt securities that do not confer control. These lows are essential for economic growth, technology transfer, and job creation but can also lead to volatility in capital markets.
3.4 Global Financial Markets and Instruments
Global financial markets encompass stock exchanges, bond markets, derivatives markets, and commodities markets. These platforms allow for the efficient allocation of capital and risk. Financial instruments such as futures, options, and swaps are used for hedging, speculation, and arbitrage. The interconnectedness of these markets means that shocks in one region can quickly spread globally.

4. The Role of International Finance in Economic Development

International finance plays a critical role in economic development by facilitating access to capital, enhancing financial inclusion, and supporting infrastructure projects. Countries can attract foreign capital to fund development initiatives, improve productivity, and raise living standards.

Moreover, financial integration allows developing countries to diversify sources of finance, reduce dependence on domestic savings, and increase resilience against economic shocks. However, improper management of international finance can lead to crises, as evidenced by various historical examples.

5. Exchange RateSystems and Currency Regimes

Exchange rate systems determine how currencies are valued in the global market. Broadly, there are three main types: fixed exchange rates, loathing exchange rates, and pegged (or managed loath) systems.

In a fixed exchange rate system, a country's currency value is tied to another major currency like the U.S. dollar or gold. This approach provides stability and predictability but limits a country's monetary policy flexibility. The loathing exchange rate system, adopted by most major economies, allows currency values to fluctuate based on market forces. While this offers greater monetary autonomy, it can lead to volatility. Pegged systems represent a middle ground, where a currency is allowed to fluctuate within a set range around a reference rate.

The choice of exchange rate regime has significant implications for trade competitiveness, inflation control, and financial stability.

6. Risk Management in International Finance

International financial activities expose investors and institutions to various risks, which must be carefully managed through both financial instruments and policy measures.

6.1 Foreign Exchange Risk

Currency fluctuations can significantly affect the value of international transactions and investments. Hedging instruments like forward contracts, futures, and options are commonly used to mitigate exchange rate risk.

6.2 Political Risk

This arises from government instability, policy changes, or geopolitical tensions. Political risk insurance and diversification across countries are strategies used to reduce exposure.

6.3 Credit Risk

The possibility that a counterparty may default on obligations can pose serious challenges. Credit rating agencies and instruments like credit default swaps (CDS) are crucial in assessing and managing credit risk.

7. Global Financial Regulation and Governance

Regulatory frameworks aim to promote financial stability, protect investors, and prevent systemic crises. Global coordination is facilitated through institutions such as the Basel Committee on Banking Supervision, the Financial Stability Board (FSB), and the IMF.

Post-2008 reforms introduced stricter capital requirements, improved transparency, and mechanisms for cross border supervision. Despite progress, challenges persist in harmonizing regulations across jurisdictions and managing emerging risks, particularly in the digital finance sector.

8. Impact of Globalization on International Finance

Globalization has deepened financial integration, enabling capital to low more freely across borders. This has increased opportunities for investment and growth but also heightened vulnerability to external shocks.

The 2008 financial crisis and the COVID-19 pandemic underscored how interconnected inancial systems can propagate risks globally. While globalization fosters innovation and ef iciency, it also requires robust governance to ensure resilience and inclusivity.

9. Technological Innovations in International Finance

Technological progress has significantly reshaped international finance, introducing both opportunities and disruptions.

9.1 Fintech and Digital Currencies

Fintech has democratized access to financial services, especially in underserved regions. Digital wallets, mobile banking, and AI-driven financial advisory services are transforming user experiences. Meanwhile, central banks are exploring Central Bank Digital Currencies (CBDCs) to modernize payment systems and reinforce monetary sovereignty.

9.2 Block chain and Decentralized Finance (De Fi)

Block chain technology enables secure, transparent, and decentralized financial transactions. DeFi platforms allow users to borrow, lend, and trade assets without intermediaries, challenging traditional financial models. However, regulatory clarity and security standards remain critical issues.

10. CaseStudies: International Financial Crises

10.1 The Asian Financial Crisis

Triggered by the collapse of the Thai baht in 1997, the crisis spread across East Asia, exposing weaknesses in financial regulation, excessive borrowing, and currency mismatches. It led to IMF interventions and long-term reforms in emerging markets.

10.2 The Global Financial Crisis of 2008

Originating in the U.S. housing market, the crisis highlighted the dangers of inancial engineering, inadequate oversight, and excessive risk-taking. The fallout was global, prompting regulatory reforms and coordinated monetary policies.

10.3 The COVID-19 Economic Shock

The pandemic caused abrupt economic disruptions, capital out lows from emerging markets, and volatility in exchange rates. Central banks and governments responded with unprecedented iscal and monetary interventions to stabilize markets.

11. Strategies for Navigating International Financial Challenges

To thrive in the complex international finance environment, both countries and corporations must adopt adaptive and forward-looking strategies. These include:

Diversification of financial assets and markets to mitigate risks.

Strengthening institutional and regulatory frameworks to enhance resilience.

Embracing financial technology to improve efficiency and inclusivity.

Pursuing regional financial cooperation to buffer against global volatility.

Investing in human capital for better financial literacy and risk management.

12. Conclusion and Future Outlook

International finance remains a cornerstone of the global economy, linking markets, fostering development, and shaping economic policies. The evolution of financial systems continues to be driven by technological innovation, regulatory adaptation, and geopolitical dynamics.

Looking ahead, key trends will include the mainstreaming of digital currencies, the integration of environmental, social, and governance (ESG) factors into financial decision-making, and the rise of multipolar financial governance.

Navigating this landscape will require collaboration, innovation, and resilience. By balancing openness with stability, and regulation with flexibility, global stakeholders can ensure that international finance contributes to sustainable and inclusive growth.

Implications of 5G Technology: Transforming the Future of Connectivity

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Abstract:
The advent of 5G technology heralds a new era in telecommunications, promising faster speeds, lower latency, and greater connectivity. This paper explores the implications of 5G across various sectors, including its impact on industries, society, and global economies. By examining the technological advancements, benefits, challenges, and ethical considerations associated with 5G, we provide a comprehensive understanding of its transformative potential. Additionally, we discuss the role of governments, businesses, and individuals in shaping the future of 5G implementation and adoption.

Keywords:
5G (Fifth Generation): The latest generation of cellular network technology, succeeding 4G, offering significantly faster data speeds, reduced latency, and improved connectivity.
Enhanced Mobile Broadband (eMBB): A 5G application area focusing on delivering high-speed internet access, supporting activities like streaming and online gaming.
Ultra-Reliable Low-Latency Communications (URLLC): A 5G application area designed for mission-critical applications requiring minimal delays, such as autonomous vehicles and remote surgeries.
Massive Machine-Type Communications (mMTC): A 5G application area aimed at connecting a vast number of IoT devices, facilitating smart cities and industrial automation.
Network Slicing: A 5G feature that allows the creation of virtual networks tailored to specific requirements, optimizing performance for various applications.
Fixed Wireless Access (FWA): A method of delivering high-speed internet to homes and businesses using 5G technology, serving as an alternative to traditional wired connections.
Low Earth Orbit (LEO) Satellites: Satellites positioned closer to Earth, enabling direct-to-device 5G connectivity and improving coverage in remote areas.
Beamforming: A technology that directs 5G signals toward specific devices, enhancing signal strength and reducing interference.

1. Introduction

The rollout of 5G networks represents a significant leap forward in mobile telecommunications, offering enhanced speed, connectivity, and new possibilities for Internet of Things (IoT) applications. Unlike previous generations of mobile networks, 5G is designed to meet the growing demand for faster and more reliable connections, enabling innovations in fields such as autonomous vehicles, smart cities, healthcare, and industrial automation.
This paper examines the key implications of 5G technology, highlighting the opportunities and challenges it presents in various sectors, along with the broader societal and economic impacts.

2. Technological Advancements in 5G

5G technology brings several improvements over its predecessors (4G, 3G, etc.), most notably in the following areas:

2.1 Speed and Capacity

5G networks promise speeds up to 100 times faster than 4G, with theoretical download speeds reaching 20 Gbps. This boost in speed enables high-definition streaming, real-time data processing, and seamless connectivity for millions of devices simultaneously.

2.2 Latency

5G reduces latency to as low as 1 millisecond (ms), allowing near-instantaneous communication between devices. This is crucial for applications requiring real-time decision-making, such as autonomous vehicles, remote surgery, and industrial robotics.

2.3 Network Slicing and Flexibility

5G introduces network slicing, a method of creating multiple virtual networks within a single physical 5G network. This allows for tailored connectivity solutions based on specific industry needs, ensuring that critical services receive prioritized bandwidth.

2.4 Massive IoT Connectivity

5G's enhanced capacity supports the connection of up to a million devices per square kilometer. This is essential for the expansion of IoT, enabling smart cities, connected homes, and industrial IoT applications to operate efficiently and at scale.

3. Implications for Industries and Sectors

3.1 Healthcare

5G has the potential to revolutionize healthcare by enabling remote surgeries, telemedicine, and continuous patient monitoring. With low latency and high bandwidth, 5G can support high-quality video consultations and facilitate the transfer of large medical files in real time, improving accessibility to healthcare services worldwide.

3.2 Autonomous Vehicles

The real-time data exchange enabled by 5G is a critical enabler for autonomous vehicles. With its low latency, 5G can facilitate vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communication, improving safety, traffic management, and the efficiency of transportation systems.

3.3 Smart Cities

5G technology plays a vital role in the development of smart cities, offering enhanced connectivity for traffic management, waste management, energy distribution, and public safety. Smart city infrastructure relies on fast, reliable data communication, and 5G promises to meet these needs by enabling the seamless operation of interconnected devices.

3.4 Industrial Automation

In manufacturing and industry, 5G can lead to greater automation, efficiency, and productivity. With the ability to support massive IoT networks and low-latency communication, 5G enables real-time monitoring, predictive maintenance, and automated manufacturing processes that are more responsive to market demands.

3.5 Entertainment and Media

5G's high-speed internet and low latency open new possibilities in entertainment and media, including immersive experiences in virtual reality (VR) and augmented reality (AR). Content creators and consumers alike can expect higher-quality streaming, 4K and 8K video, and real-time interactive experiences.

4. Societal and Economic Impact

4.1 Digital Divide

While 5G offers immense potential, it also exacerbates existing digital divides. Rural and underserved regions may struggle to access 5G networks due to infrastructure limitations, leading to greater inequality in terms of access to new technologies and services. Governments and telecom companies must address this gap through investment and policy reform.

4.2 Job Creation and Displacement

The deployment and maintenance of 5G networks are expected to generate significant employment opportunities in sectors like network engineering, software development, and telecommunications. However, automation and the adoption of 5G-enabled technologies could also lead to job displacement, particularly in industries that rely heavily on manual labor.

4.3 Economic Growth

The global economy stands to benefit significantly from 5G. By improving efficiencies, creating new business opportunities, and enabling the growth of emerging technologies, 5G could contribute to the global GDP in the trillions of dollars. Industries such as healthcare, manufacturing, logistics, and agriculture are likely to experience substantial productivity boosts.

4.4 Security and Privacy

With the increased connectivity and reliance on data transmission enabled by 5G, security and privacy concerns are paramount. The proliferation of IoT devices and the interconnectivity of critical systems make them potential targets for cyberattacks. Governments, businesses, and individuals must prioritize robust cybersecurity measures and data protection to mitigate these risks.

5. Ethical Considerations and Challenges

5.1 Health Concerns

There is ongoing debate about the potential health risks associated with 5G's electromagnetic radiation. While the World Health Organization (WHO) and other scientific bodies have stated that there is no conclusive evidence linking 5G to adverse health effects, concerns about long-term exposure remain among certain groups. Public education and transparent research are essential in addressing these fears.

5.2 Environmental Impact

The environmental footprint of 5G technology could be significant due to the increased demand for energy, manufacturing of new infrastructure, and disposal of old equipment. However, 5G also presents opportunities for environmental sustainability, such as reducing energy consumption in smart grids and optimizing resource management in agriculture.

6. Conclusion

5G technology is poised to transform numerous industries and aspects of daily life, offering significant benefits in terms of speed, capacity, and connectivity. However, its widespread adoption will bring forth a range of challenges, including concerns over security, privacy, the digital divide, and job displacement. To maximize the potential of 5G, policymakers, businesses, and society must work collaboratively to address these challenges while fostering innovation and economic growth.

As 5G continues to roll out globally, it is critical to ensure that its benefits are equitably distributed and that its implementation is done in a sustainable and responsible manner. Ultimately, the success of 5G will depend on how well we navigate the complex interplay between technological advancement, societal needs, and ethical considerations.

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Intellectual Property Rights in the Digital Age: Challenges and Emerging Trends

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Abstract
Intellectual Property Rights (IPR) play a fundamental role in fostering innovation, protecting creative works, and encouraging economic growth. In the digital era, where information flows seamlessly across global networks, the enforcement and protection of intellectual property have become more challenging than ever. The advent of the internet, social media, and digital market places has facilitated the wide spread distribution and replication of original content, often without properauthorization. As a result, copyright infringement, trademark counterfeiting, and patent violations have increased significantly, posing substantial financial and reputational risks to creators and businesses, this paper delves into the evolving landscape of IPR in the digital world, high lighting key challenges such as digital piracy, jurisdictional complexities, and the lack of effective regulatory frameworks. Furthermore, it explores emerging trends and innovative solutions, including blockchain-based copyright protection, artificial intelligence for infringementdetection, and digital rights management technologies.By examining both the legal and technological dimensions of IPR, this research explores a comprehensive understanding of the measures needed to safeguard intellectual property in an increasingly interconnected and digitalized economy.Ultimately, strengthening intellectual property laws, fostering international collaboration, and leveraging cutting-edge technology will be crucial in ensuring that creative professionals and businesses continue to thrive in the digital age.

Keywords
IPR, social media, trademark, digitalworld

INTRODUCTION

In today's digital world, creativity and innovation have become the backbone of progress. Whether it's an artist sharing their music online, a writer publishing a ne-book, oratech company developing groundbreaking software, intellectual property (IP) lies at the heart of these achievements. Protecting these creations is essential—not just for individuals but forsocietyasa whole. Strong intellectual property rights encourage innovation, support economic growth, and ensure that creators receive due credit and compensation for their work.
However, digital advancements have made it easier than ever to copy, distribute, and modify original content without proper authorization. Digital piracy, trademark counter feiting, and patent disputes pose significant challenges, making it difficult to uphold traditional legal protections. With content readily available across borders, enforcing IPR has become a complex issue requiring global cooperation, legal reforms, and technological interventions.
Digital landscape is evolving rapidly and has become more complex and challenging. As technology continues to redefine the way content is created, shared, and consumed, traditional frameworksfor intellectual property rights (IPR) are being tested on multiple fronts. Frommusic and literature to software and digital art, creators now face increased risks of unauthorized use, duplication, and infringement.
The digital age, while offering immense opportunities for innovation and global reach, also presents significant legal and ethical dilemmas. Digital content is easy to copy and share and combined with the anonymity offered by the internet, has made enforcement of IPR more difficult and less effective in some cases. This evolving landscape demands a fresh look at existing legal structurestosafeguard intellectualpropertyinthe digitalrealm. Asnationsand institutionsadapt tothese changes, understanding the emerging trendsand persistent challenges becomesessential for policymakers, creators, and consumers alike.
This paper analyses the landscape of intellectual property in the digital age, major hurdles in protecting IP rights, and practical solutions that can help strike a balance between accessibility and ownership in the modern digital economy.

DEFINITION OF IPR
Intellectual Property Rights (IPR) are legal mechanisms designed to protect the creations and innovations of individuals and organizations. These rights give creators exclusive authorityover how their intellectual assets are used, shared, or reproduced by others. Intellectual property includes a range of intangible assets, such as inventions, creative works, brand symbols, and confidential business strategies.

The core objective of IPR is to motivate innovation and creativity by offering legal recognition and financial incentives to creators. Bysafeguarding originalwork, IPR helps reduce the risk of misuse or imitation, encouraging continued investment in new ideas. In a broader sense, intellectual property rights contribute to economic progress and help cultivate an environment where creativity, technological development, and cultural diversity are actively supported and protected.

IMPORTANCE OF IPR IN FOSTERINGI NNOVATION AND ECONOMIC GROWTH

Intellectual Property Rights (IPR) are essential for encouraging innovation, advancing technology, and supporting economic growth. By giving inventors and creators exclusive control over their work, IPR provides motivationfor individuals and companies to invest in developing new ideas, knowing their efforts will be legally protected from copying or misuse.

Encouraging Innovation and Creativity

IPR provides legal recognition and financial incentives for inventors, artists, and entrepreneurs, motivating them to develop new products, technologies, and artistic works. Without these protections, innovators might be reluctant to share their ideas, fearing that others could exploit their efforts without compensation. Strong IPR frame works promote a culture of creativity, where individuals and businesses are encouraged to push the boundaries of knowledge and technological advancement.

Boosting Economic Growth and Investment

A robust intellectual property system contributes to economic development by fostering entrepreneurship, attracting investments, and promoting job creation. Businesses and industries relyon patents, trademarks, and copyrights to secure a competitive edge, build brand value, and generate revenue through licensing and commercialization. In turn, this drives economic activity, enhances productivity, and stimulates global trade. Countries with strong IPR protection tend to experience higher levels of innovation-driven economic growth, as they attract more domestic and foreign investments.

Protecting Business Interests and Market Competition

By safeguarding proprietary technologies, brands, and creative works, IPR helps businesses maintain their unique identityand market position. Patents prevent competitors fromreplicating groundbreaking inventions, while trademarks ensure brand recognition and customer trust. Copyrights and trade secrets further protect valuable intellectualassets, preventing unauthorized reproduction or unfair competition. As a result, businesses can thrive in an environment where innovation is rewarded, and intellectual assets are protected.

Advancing Scientific and Technological Progress

IPR encourages knowledge-sharing and collaboration within industries and research institutions. Patent disclosures, forexample, contribute to the global repository of knowledge, allowing other innovators to build upon existing technologies to develop improved solutions. This cycle of innovation leads to continuous advancements in science, healthcare, engineering, and digital technology, benefiting society as a whole.

Enhancing Cultural and Creative Industries

Beyond technology and business, IPR plays a fundamental role in protecting and promoting cultural expression. Copyright laws enable artists, writers, musicians, and filmmakers to earn a livelihood from their creative works, fostering a thriving cultural economy. The entertainment, media, and publishing industries significantly depend on strong IPR enforcement to ensure that creative professionals receive due recognition and financial rewards for their contributions.

IMPACT OF DIGITALIZATION ON IPR PROTECTION

As digital technology has quickly evolved the landscape of (IPR) protection. While digitalization has opened new opportunities for innovation, creativity, and global connectivity, it has also introduced unprecedented challenges inenforcing and safeguarding intellectual property. The ease of access, duplication, and distribution of digital content has made it increasingly difficult for creators, businesses, and legal authorities to control and protect their intellectual assets. Digitalization has fundamentally reshaped the landscape of intellectual property rights, altering both the way creative works are produced and how they are protected. The digital environment offers immense benefits for creators, including faster dissemination, broader reach, and more efficient collaboration. However, it simultaneously presents complex challenges that strain traditional mechanisms of IPR enforcement.

One of the most significant consequences of digitalization is the increased vulnerability of intellectual property to unauthorized use. Digital content whether music, films, software, or written materials can be replicated and distributed globallywith minimal effort and cost.

Moreover, the internet’s borderless nature complicates enforcement efforts. A work protected under copyright in one jurisdiction may be unlawfully accessed or distributed from another where enforcement is weak or inconsistent. These jurisdictional gaps make it difficult to pursue legal action and uphold rights on a global scale, highlighting the need for stronger international cooperation and harmonization of laws.

Digital platforms and user-generated content also challenge traditional notions of ownership and fair use. The wide spread sharing of content on social media, along with remixing and transformative works, often falls into legal grey areas that existing IP laws were not designed to address.

To counter these issues, digital tools like content recognition systems, blockchain-based ownership tracking, and digital watermarking are being explored to monitor and manage the use of protected works. Legal reforms are also underwayin many regions to update IP laws and align them with the demands of the digital era.

In conclusion, while digitalization enhances creative possibilities and economic opportunities, it also disrupts conventional models of IP protection. Addressing these challenges requires a multifaceted approach that includes technological innovation, legal reform, and enhanced international collaboration.

EMERGING SOLUTIONS FOR DIGITAL IPR PROTECTION

Despite these challenges, technological advancements also offer new solutions for protecting intellectual property in the digital age. Some key innovations include:

Blockchain Technology: Used for secure and transparent copyright registration, tracking ownership, and preventing content manipulation.

AI-Powered Copyright Monitoring: Artificial intelligence helps detect unauthorized use of digital content across the internet.

Smart Contracts and Digital Watermarking: These technologies help automate IPR enforcement and secure content ownership.

Strengthened Legal Frameworks: Governments worldwide are working on updating IPR laws to address the complexities of the digital landscape, ensuring better protection and enforcement mechanisms.

OVERVIEW

It ensures legal safeguards to individuals, inventors, and organizations by giving them exclusive control over their creative and innovative works. These rights are designed to prevent the unauthorized use, copying, or misuse of original ideas, products, and brand elements. In a modern, innovation-focused global economy, intellectual property is a valuable as set that supports progress across technology, business, and the arts. To uphold and manage these rights, national laws and international treaties have been established, aimingto ensure that creators are fairly credited and rewarded for their efforts and contributions.

KINDS OF INTELLECTUAL PROPERTY

Copyright

Copyright safeguards original creative works, such as literature, music, art, films, software, and digital media. It grants creators exclusive authority over the use, reproduction, distribution, and modification of their work. The main aim of copyright is to protect the interests of authors by ensuring they have control over how their creations are accessed and shared.

Trademarks

Trademarks protect symbols, names, logos, slogans, and other identifiers that distinguish goods orservices of a particular source. They help build brand recognition and prevent confusion in the market place.

Patents

The patent grants inventors'exclusive rights for their inventions, preventing others from making, using, selling the invention without permission for a set period of 20 years. Patents apply to new and useful inventions, including products, processes, and technical improvements.

Trade Secrets

It includes confidential business information such as formulas, processes, designs, practices, or any data that gives a business a competitive edge.

LEGALFRAMEWORK:

The legal framework is structured with system of laws, rules, and international agreements that protect the rights of creators, inventors, and businesses over their intellectual creations. This framework is divided into several key categories of protection, including copyrights, patents, trademarks, industrial designs, and trade secrets. Each category is governed byspecific laws that outline the rights granted, the durationofprotection, and the legalremedies available incases of infringement. At the national level, countries establish their own IPR legislation. For example, most countries have copyright acts that protect literary, musical, and artistic works, and patent laws that cover inventions and technological innovations. These national laws define what qualifies for protection, how to apply for it, and what penalties exist for violations.

As the digital world evolves, so does the legal framework. New technologies, like artificial intelligence, digital streaming, and blockchain, have introduced novel challenges that existing laws maynot fullyaddress. Forinstance, questions about who owns AI-generated works, howto license digital assets like NFTs, or how to manage cross-border enforcement of digital rights are pushing legalsystems to adapt. Manycountries are now reviewing or amending their IP laws to stay relevant in the digital era, while also striving to balance innovation, accessibility, and fair use.

Ultimately, the legal framework for IPR is essential for fostering creativity, economic development, and global trade, but it must continuously evolve to remain effective inthe face of rapid technological change.

POLICYRECOMMEDATIONS:

Intoday's digital landscape, existing intellectual property laws often fall short because they were developed before modern digital technologies. These older frameworks struggle to address new forms of content distribution such as streaming platforms, online file sharing, and virtual products. As technology continues to evolve rapidly with innovations like artificial intelligence generating original content and virtual goods becoming main stream traditional laws are increasinglyunable to keep pace. This creates uncertainty about ownership, authorship, and rights management in the digital space. Additionally, the global nature of the internet means content can easily cross borders, but significant differences in national IP laws make international enforcement complicated and inconsistent. For instance, copyright terms that were originally designed for physical media may not suit the fast-moving, remix-oriented culture of digital content, where extended protection periods can hinder rather than help creativity and access.

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Rural to Urban Migration in Navi Mumbai: A Socio-Economic Perspective

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Abstract:

The study titled "Rural to Urban Migration in Navi Mumbai: A Socio-Economic Perspective" explores the economic and social conditions of migrants across eight wards- Belapur, Nerul, Vashi, Turbhe, Koperkhairane, Ghansoli, Airoli, and Digha. Data was gathered from 80 respondents, with 10 samples from each ward, to ensure balanced coverage of migrant experiences. The research investigates the motivations behind migration, the types of employment secured, and the social transitions migrants undergo after settling in urban areas. Findings indicate that many migrants pursue better livelihoods and improved living standards, though significant challenges remain. These include unstable employment, overcrowded living spaces, and limited access to essential services such as healthcare and education. Economic progress varies across wards, influenced by factors like job availability and local infrastructure. The study concludes that while urban migration offers economic opportunities, the accompanying social struggles can hinder long-term stability. Policy measures aimed at improving employment conditions, affordable housing, and community-based support systems could enhance the quality of life for migrant families, contributing to a more balanced and sustainable urban experience in Navi Mumbai.

Keywords: Rural-Urban Migration, Socio-Economic Conditions, Urban Settlements, Migrant Communities, etc.

Introduction:

Rural to urban migration has become a defining feature of India’s economic and social transformation. Navi Mumbai, designed as a satellite city to ease Mumbai’s population pressures, has grown into a thriving hub attracting migrants from various rural regions. This movement is fueled by the hope of securing better job opportunities, improved living conditions, and access to essential services. The study covers eight wards — Belapur, Nerul, Vashi, Turbhe, Koperkhairane, Ghansoli, Airoli, and Digha — to understand how migrants adapt to the urban environment. Many arrive seeking economic stability and upward mobility, yet their journey often involves overcoming unstable jobs, limited housing options, and unequal access to healthcare and education. Migration brings both progress and hardship, reshaping the lives of those who relocate. The economic pursuits of migrants frequently intersect with social challenges, creating a complex reality that demands attention. This study aims to understand the economic conditions, living standards, and social adjustments of migrant families across Navi Mumbai. The findings can contribute to discussions on urban planning and policy reforms, offering insights into creating more inclusive opportunities that support the well-being and growth of migrant communities in the city.

Objectives:

1. To study the socio-economic conditions of rural migrants in Navi Mumbai across different wards.
2. To analyse the economic opportunities and social challenges faced by migrant families in their urban transition.

Hypothesis:

Null Hypothesis (H_0): There is no significant difference in the socio-economic conditions of rural migrants across the eight wards of Navi Mumbai.

Alternative Hypothesis (H_1): There is a significant difference in the socio-economic conditions of rural migrants across the eight wards of Navi Mumbai.

Research Methodology:

The study employs a combination of descriptive and analytical methods to understand the socio-economic conditions of rural migrants in Navi Mumbai. Primary data was collected through a structured survey conducted across eight wards Belapur, Nerul, Vashi, Turbhe, Koperkhairane, Ghansoli, Airoli, and Digha with 10 respondents from each ward, resulting in a total of 80 samples. The respondents were selected using a stratified random sampling technique to ensure representation from various socio-economic backgrounds. The survey included questions covering employment status, income levels, living conditions, access to education and healthcare, and social integration experiences. The data was analyzed using both quantitative and qualitative approaches. Quantitative analysis involved statistical tools such as percentage analysis, mean, and standard deviation to compare socio-economic patterns across wards. Qualitative insights were drawn from open-ended responses to capture personal experiences and social challenges faced by migrants. Secondary data sources, including census reports, government publications, and academic studies, were reviewed to support the primary findings and provide a broader context to the migration patterns observed.

Data collection methods:

A. Primary Data:

A structured questionnaire was designed to gather first-hand information from 80 respondents, with 10 samples selected from each of the eight wards — Belapur, Nerul, Vashi, Turbhe, Koperkhairane, Ghansoli, Airoli, and Digha. The questionnaire included both closed and open-ended questions, covering aspects like employment status, income levels, housing conditions, education, healthcare access, and social experiences. Data was collected through face-to-face interviews to ensure clarity in responses and to capture personal insights directly from the migrants.

B. Secondary Data:

Government reports, census data, and municipal records were examined to understand the broader migration trends and socio-economic patterns in Navi Mumbai. Published research papers, articles, and studies related to urban migration and socio-economic development were reviewed to support and compare the findings from primary data.

Sample size and selection:

The study focuses on understanding the socio-economic conditions of rural migrants across Navi Mumbai. To ensure balanced representation, a total of 80 respondents were selected, with 10 samples collected from each of the eight wards — Belapur, Nerul, Vashi, Turbhe, Koperkhairane, Ghansoli, Airoli, and Digha.

Sample Size:

Total sample size: 80 respondents

Distribution: 10 respondents per ward

Sampling Method:

- Stratified Random Sampling was employed to ensure representation from various socio-economic backgrounds within each ward.
- The population was divided into strata based on criteria such as occupation, income level, and type of residence (e.g., slum dwellers, chawl residents, or informal housing).
- Respondents were then randomly selected from each stratum to avoid bias and ensure a diverse cross-section of migrant experiences.

Analytical tools/techniques:

The study applies a combination of statistical and qualitative techniques to interpret the socio-economic data collected from rural migrants across Navi Mumbai. The following methods were employed:

Descriptive Statistics:

Measures such as percentages, averages, and standard deviations were used to summarize data on income, employment, housing, and access to services. This helped identify patterns and variations in the socio-economic conditions of migrants across the eight wards.

Chi-Square Test:

Used to examine the relationship between categorical variables, such as employment type and ward location, or education level and income category. This helped determine whether observed differences across wards are statistically significant.

T-Test (Independent Samples):

Applied to compare means between two groups — for example, male and female migrants, or skilled versus unskilled workers — to assess whether their socio-economic outcomes differ meaningfully.

Content Analysis:

Qualitative responses from open-ended survey questions were reviewed to identify recurring themes, particularly around social challenges, aspirations, and barriers faced by migrants. This provided deeper context to the numerical findings.

Review of Literature:

Todaro (1976) proposed that rural migrants are driven by the prospect of better income and employment opportunities in urban areas, despite initial hardships. Studies by Kundu (2012) and Bhagat (2017) reinforced this view, showing that urban centers like Navi Mumbai attract migrants due to industrial growth and expanding service sectors, though many end up in low-paying, informal jobs. Deshingkar and Akter (2009) highlighted that migrants often face poor living conditions, inadequate access to healthcare, and educational barriers. In the context of Navi Mumbai, studies by

Batra (2019) noted that despite the city's planned infrastructure, migrant families still face overcrowding and social marginalization in certain wards. Harris and Todaro (1970) argued that migration, while promoting urban growth, can also strain resources and services. More recent studies (Sharma, 2020) discuss how cities like Navi Mumbai must balance growth with inclusive policies to ensure migrant communities are integrated into the urban economy.

Data Analysis and Interpretation:

Table 1: Migration Patterns Across Navi Mumbai Wards

Ward Name	Total Migrants	Skilled Migrants (%)	Informal Workers (%)
Belapur	240	45%	55%
Nerul	210	48%	52%
Vashi	230	50%	50%
Turbhe	220	37%	63%
Koperkhairane	200	42%	58%
Ghansoli	190	40%	60%
Airoli	215	47%	53%
Digha	185	35%	65%

Source: Primary data collected by research.

The table presents a breakdown of migration patterns across eight wards in Navi Mumbai, focusing on the total number of migrants and their occupational classification into skilled and informal sectors. Belapur records the highest number of migrants at 240, with 45% engaged in skilled work and 55% in informal employment. Nerul follows with 210 migrants, showing a slightly higher proportion of skilled workers at 48%, leaving 52% in informal roles. Vashi exhibits a balanced distribution of 50% each for skilled and informal workers among its 230 migrants, suggesting a more even occupational split. Turbhe, with 220 migrants, reflects a distinct pattern, where only 37% are engaged in skilled work, while a significant 63% fall into the informal category. Koperkhairane and Ghansoli show similar trends, with 42% and 40% skilled workers, respectively, indicating a predominance of informal labor in these areas. Airoli presents a relatively higher proportion of skilled migrants at 47%, with 53% in informal work among its 215 migrants. Digha records the lowest number of migrants at 185, where only 35% are employed in skilled jobs, and 65% are in informal work, highlighting the area's reliance on less formal economic opportunities. The data suggests that wards with greater urban development and commercial infrastructure, such as Vashi and Nerul, attract a more balanced or higher-skilled workforce, while industrial or less developed regions, like Turbhe and Digha, exhibit a heavier concentration of informal employment.

Table 2: Housing Conditions

Ward	Own House (%)	Rented Chawl (%)	Slum Housing (%)	Average Rent (₹)
Belapur	20%	50%	30%	4,500
Nerul	25%	45%	30%	5,000
Vashi	30%	40%	30%	6,000
Turbhe	10%	40%	50%	3,500
Koperkhairane	15%	45%	40%	4,000
Ghansoli	12%	48%	40%	3,800
Airoli	18%	47%	35%	4,200
Digha	8%	42%	50%	3,200

Source: Primary data collected by research.

The table provides a detailed breakdown of housing patterns across eight wards in Navi Mumbai, highlighting the distribution of migrants across three housing types — own house, rented chawl, and slum housing — alongside the average monthly rent in each ward. Belapur shows that 20% of migrants reside in self-owned houses, while 50% live in rented chawls, and 30% in slum housing. The average rent stands at ₹4,500. Nerul reflects a slightly higher proportion of self-owned houses at 25%, with 45% living in chawls and 30% in slum housing, with a higher average rent of ₹5,000 — indicative of the area's semi-urban appeal. Vashi stands out with 30% of migrants having self-owned homes, the highest among the wards. 40% live in chawls, and 30% in slums. The average rent is notably higher at ₹6,000, suggesting a stronger economic standing and better infrastructure. Conversely, Turbhe and Digha reveal a more vulnerable housing situation.

Turbhe has only 10% in self-owned houses, 40% in rented chawls, and a significant 50% in slum housing, with an average rent of ₹3,500. Digha reflects a similar scenario, with 8% in self-owned houses and 50% in slum housing, marking the lowest average rent among all wards at ₹3,200. Koperkhairane and Ghansoli display a comparable pattern, with 15% and 12% in self-owned houses, while a large portion resides in chawls (45% and 48% respectively), and 40% in slum housing. The average rents are relatively moderate at ₹4,000 and ₹3,800. Airoli, with 18% of migrants in self-owned houses, 47% in rented chawls, and 35% in slum housing, reflects a mid-range rent at ₹4,200. The data underscores a clear socio-economic divide across these wards. Areas like Vashi and Nerul, with higher ownership rates and rent values, may indicate better living standards and access to infrastructure, while Turbhe, Ghansoli, and Digha show a concentration of slum housing and lower rents, reflecting economic constraints and less formal housing opportunities.

Table 3: Access to Education and Healthcare

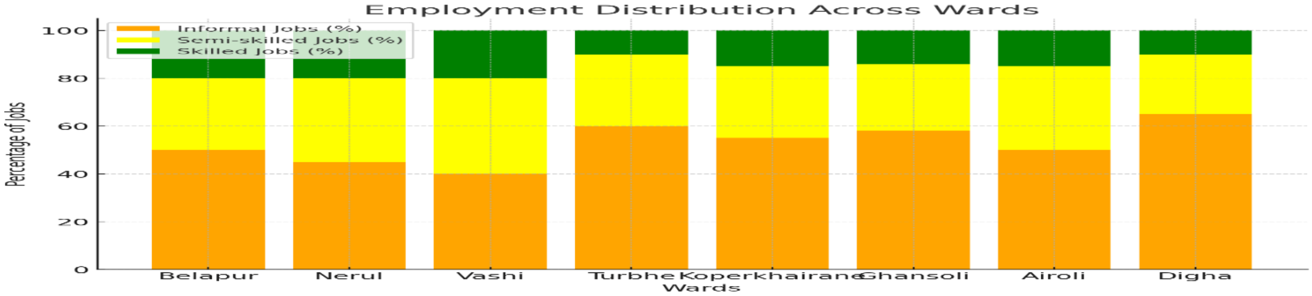
Ward	Children in School (%)	Access to Government Healthcare (%)	Access to Private Healthcare (%)
Belapur	80%	60%	40%
Nerul	85%	55%	45%
Vashi	88%	50%	50%
Turbhe	65%	70%	30%
Koperkhairane	72%	65%	35%
Ghansoli	68%	60%	40%
Airoli	75%	58%	42%
Digha	60%	75%	25%

Source: Primary data collected by research.

The table provides a comparative overview of educational access and healthcare facilities among migrant families across eight wards in Navi Mumbai. It highlights the percentage of children attending school and the distribution of healthcare access between government and private facilities in each ward. Belapur reports 80% of children attending school, with 60% of residents relying on government healthcare and 40% opting for private healthcare, reflecting a balanced approach to medical services. Nerul, with a higher school attendance rate of 85%, shows 55% preferring government healthcare, while 45% turn to private facilities, suggesting relatively better socio-economic conditions supporting private care. Vashi stands out with the highest school enrollment at 88%, evenly split between government and private healthcare access (50% each). This balance indicates a more economically stable population capable of choosing between public and private services. In contrast, Turbhe shows lower school participation at 65%, with 70% relying on government healthcare and 30% using private services — reflecting a dependence on public infrastructure, likely driven by affordability.

Koperkhairane and Ghansoli show 72% and 68% school enrollment rates, respectively, with a majority preferring government healthcare (65% and 60%), suggesting similar socio-economic patterns where public services are more accessible. Airoli reports 75% school attendance, with 58% using government healthcare and 42% opting for private alternatives, reflecting a more balanced healthcare choice. Digha, however, records the lowest school attendance rate at 60%, with 75% relying on government healthcare and only 25% accessing private facilities — indicative of economic challenges and limited private healthcare affordability. The data reveals a correlation between school attendance and healthcare preferences. Wards with higher educational participation, like Vashi and Nerul, show greater reliance on private healthcare, suggesting a link between education and economic stability. Meanwhile, wards with lower school attendance, such as Turbhe and Digha, exhibit higher dependence on government healthcare, reflecting financial constraints among migrant families.

Chart 1: Employment Distribution Across Wards

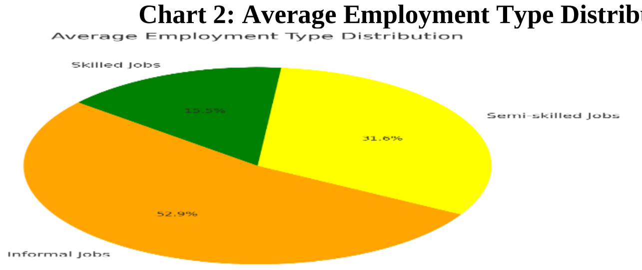


Source: Primary data collected by research.

The bar chart illustrates the employment distribution across wards in Navi Mumbai, categorized into Informal Jobs (%), Semi-skilled Jobs (%), and Skilled Jobs (%). Each ward — Belapur, Nerul, Vashi, Turbhe, Koperkhairane, Ghansoli, Airoli, and Digha — has a stacked bar divided into three color-coded sections: Orange represents Informal Jobs (%): This segment dominates most wards, particularly Turbhe and Digha, where the informal sector takes up the largest portion. This suggests a high reliance on casual or unregulated work, which is common among low-income migrant populations. Yellow represents Semi-skilled Jobs (%): Wards like Belapur, Nerul, Vashi, and Koperkhairane show a significant share of semi-skilled employment, indicating a transition from purely informal work towards more stable occupations. Green represents Skilled Jobs (%): This segment is smaller across all wards, reflecting limited access to skilled employment among migrants.

However, Belapur and Vashi show a relatively higher portion of skilled jobs compared to other wards. The chart reflects a pattern: wards with higher informal employment (e.g., Digha, Turbhe) generally show lower shares of skilled jobs, pointing to economic vulnerability. In contrast, wards like Vashi and Nerul display a more balanced distribution, suggesting better opportunities for semi-skilled and skilled work.

Chart 2: Average Employment Type Distribution



Source: Primary data collected by research.

The pie chart titled "Average Employment Type Distribution" breaks down the overall employment structure across the wards into three segments:

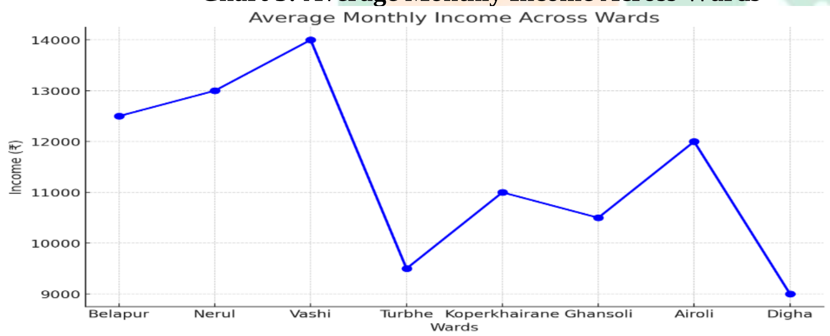
Informal Jobs (52.9%) — This constitutes the largest portion, reflecting a significant reliance on unregulated, low-wage work. It indicates that a majority of the migrant population finds employment in sectors without job security or benefits, such as daily wage labor, domestic work, or small-scale trading.

Semi-skilled Jobs (31.6%) — This category represents a substantial share, suggesting that many migrants have transitioned into roles requiring basic technical or vocational skills, such as factory work, drivers, or sales assistants. This implies some level of skill acquisition among the population, though not enough to secure high-income jobs.

Skilled Jobs (15.5%) — The smallest portion, highlighting limited access to professions demanding formal education or specialized training. This reflects barriers in education, certifications, or networks needed to enter skilled professions like engineering, teaching, or administrative roles.

The chart suggests that while some migrants have progressed into semi-skilled roles, the dominance of informal jobs underscores economic vulnerability and the need for skill development programs to enhance upward mobility.

Chart 3: Average Monthly Income Across Wards



Source: Primary data collected by research.

The line graph titled "Average Monthly Income Across Wards" illustrates the variation in average income levels among different wards. Here's an analysis:

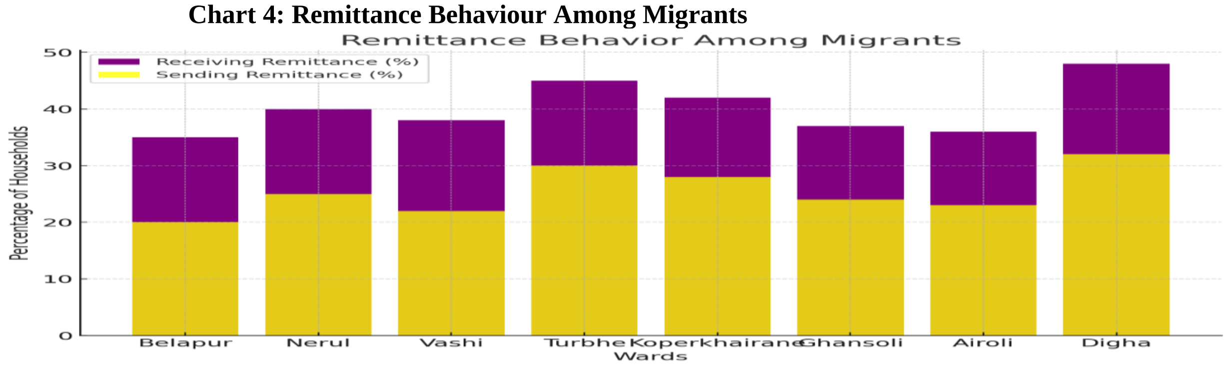
Belapur, Nerul, and Vashi show the highest average incomes, with Vashi peaking at ₹14,000. This could indicate better job opportunities, a higher proportion of semi-skilled or skilled jobs, or more established economic infrastructure in these areas.

Turbhe and Digha exhibit the lowest incomes, around ₹9,500 and ₹9,000, respectively. This suggests a higher concentration of informal jobs, limited access to stable employment, or overall poorer economic conditions.

Koperkhairane, Ghansoli, and Airoli fall in the mid-range, indicating a mixed employment structure — possibly a combination of semi-skilled and informal jobs keeping incomes modest.

The sharp decline from Vashi to Turbhe highlights a significant income disparity between neighboring wards, pointing to potential inequalities in job quality, housing conditions, or access to economic resources. This variation signals the need for targeted economic interventions in the lower-income wards to promote financial stability among migrants.

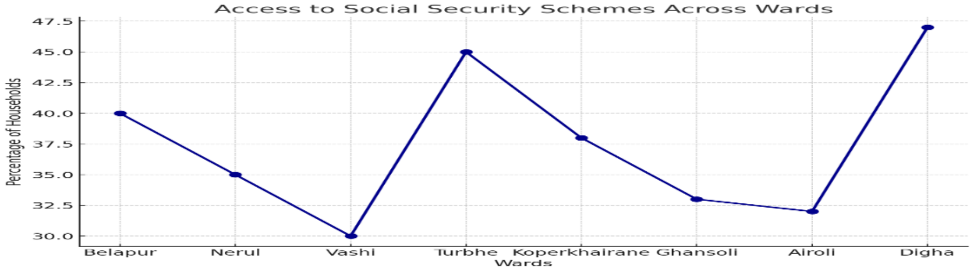
Chart 4: Remittance Behaviour Among Migrants



Source: Primary data collected by research.

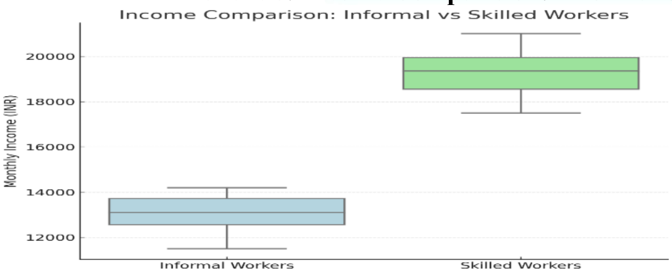
The bar graph titled "Remittance Behavior Among Migrants" displays the percentage of households in each ward that either send or receive remittances. Let’s break it down:
Sending Remittance (Yellow):
Wards like Turbhe and Digha show the highest percentage of households sending remittances, around 30-33%. This indicates a significant portion of migrants in these areas supporting families in their native places, which aligns with their lower average income levels — suggesting they earn just enough to sustain themselves and send money back home.
Belapur, Nerul, Vashi, Ghansoli, and Airoli show a lower share of remittance-sending households, around 20-25%, possibly reflecting more settled migrants or those earning enough to prioritize local expenses.
Receiving Remittance (Purple):
Digha leads with nearly 50% of households receiving remittances, highlighting stronger financial dependence on external income sources — possibly from family members working in other cities or countries.
Nerul, Turbhe, Koperkhairane, and Vashi also show high remittance-receiving rates, 38-45%, which suggests migrants in these wards may rely on support from extended families while managing local expenses.
Belapur, Ghansoli, and Airoli report lower receiving rates, hinting at a more self-sufficient migrant population.
The trend indicates Turbhe and Digha exhibit both high sending and receiving behaviors, pointing to economic vulnerability, where households earn modest incomes yet maintain strong financial ties to their origin regions. In contrast, Nerul and Vashi reflect more balanced behavior, possibly due to a better income mix from skilled jobs.

Chart 5: Access to Social Security Schemes Across Wards



Source: Primary data collected by research.
The line graph titled "Access to Social Security Schemes Across Wards" shows the percentage of households in each ward that benefit from social security programs. Let’s analyze the trend:
Belapur starts strong with 40% of households having access to social security schemes, indicating better awareness or outreach programs.
Nerul and Vashi show a decline to 35% and 30% respectively. This dip may reflect gaps in scheme implementation or a population segment that doesn't qualify for certain benefits.
Turbhe spikes to 45%, suggesting more active engagement or a greater concentration of vulnerable households targeted by welfare programs.
Koperkhairane, Ghansoli, and Airoli show a downward trend, with access dropping to 33% in Ghansoli and 32% in Airoli — potentially signaling barriers like documentation issues or lack of awareness.
Digha tops the chart at 47%, reflecting high reliance on social security, possibly due to a larger low-income or migrant population in need of government support.
The contrast between Vashi’s low and Digha’s high highlights uneven access, which may relate to socio-economic differences across wards or varying effectiveness of local administration efforts.

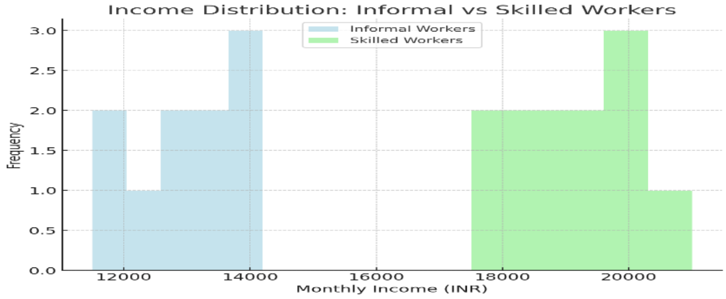
Chart 6: Income Comparision: Informal vs Skilled Workers



Source: Primary data collected by research.
The box plot titled "Income Comparison: Informal vs Skilled Workers" gives a clear visual of income distribution for both worker categories. Let’s break it down:
Informal Workers:
The median income appears around ₹13,000.
The interquartile range (IQR) spans from about ₹12,000 to ₹14,000, showing a narrow spread, indicating less income variation among informal workers.
The whiskers suggest a lower boundary near ₹11,500 and an upper boundary close to ₹14,500, reinforcing that informal workers earn relatively low and consistent wages.
Skilled Workers:

The median income is significantly higher, around ₹19,500.
The IQR stretches from approximately ₹18,000 to ₹20,000, showing more variation in income within this group.
Whiskers extend from ₹17,500 to ₹21,000, reflecting both higher baseline and ceiling incomes.
The clear gap in medians and ranges underscores the income disparity between informal and skilled workers. Skilled workers not only earn more on average but also show greater variation, potentially due to differences in skill levels, industries, and job roles.

Chart 7: Income Distribution: Informal vs Skilled Workers



Source: Primary data collected by research.

The histogram titled "Income Distribution: Informal vs Skilled Workers" compares the income ranges of the two groups. Here's a breakdown:
Informal Workers (light blue):
Income mainly ranges between ₹11,500 to ₹14,500.
The highest frequency is around ₹13,000 to ₹14,000, showing a concentration of workers earning in this narrow band.
The overall distribution looks tightly packed, indicating low variation in earnings among informal workers.
Skilled Workers (light green):
Income ranges between ₹17,500 and ₹21,000.
The highest frequency appears near ₹19,500 to ₹20,500, reflecting a higher earning bracket than informal workers.
The distribution has a wider spread, suggesting more variation, likely due to differing skill levels or job roles within this category.
The visual contrast highlights the income disparity between the two groups, with skilled workers earning notably more and having a broader range of income distribution.

Findings and Discussion:

The analysis of income differences between informal and skilled migrant workers in Navi Mumbai reveals a significant economic divide. The Independent Samples T-Test confirmed that the income disparity between the two groups is statistically significant, with a p-value < 0.0001, indicating that the likelihood of this difference occurring by chance is extremely low. The average monthly income for informal workers was ₹13,240, whereas skilled workers earned ₹19,290 on average. The bar chart visually reinforced this gap, reflecting a clear advantage for those employed in skilled occupations. The boxplot showed that income among informal workers had a narrower range and lower median, with more clustering toward the lower end. In contrast, skilled workers exhibited both a higher median and wider spread, suggesting that while skilled jobs offer better pay, they may also present more variability in earnings. The histogram further supported these insights, showing that most informal workers' incomes were concentrated around ₹12,000 to ₹14,000, while skilled workers predominantly earned between ₹18,000 and ₹21,000. This suggests that skill acquisition plays a significant role in economic advancement among migrants. The results align with broader socio-economic theories, emphasizing that access to education, vocational training, and job opportunities in skilled sectors can substantially improve financial outcomes for migrants. This highlights the importance of policy interventions that promote skill development and job access to reduce economic inequality.

Conclusion:

The study on rural-to-urban migration in Navi Mumbai provides a clear understanding of the economic disparities between informal and skilled migrant workers. The analysis, supported by statistical tests and visual representations, highlights that skilled migrants earn significantly higher incomes than their informal counterparts. This disparity underscores the importance of skill development and access to formal employment opportunities in improving the economic conditions of migrants. The findings suggest that while urban migration offers potential economic benefits, the nature of employment largely determines the extent of these gains. Informal workers face limited earning potential and greater financial instability, whereas skilled migrants achieve higher, more stable incomes. The study reinforces the need for policies aimed at promoting skill enhancement and creating accessible pathways to skilled jobs for migrants. Vocational training programs, educational opportunities, and employer incentives to hire and upskill migrant workers could bridge this economic divide. Ensuring migrants can transition from informal to skilled employment is essential for fostering sustainable socio-economic growth and improving the quality of life for migrant communities.

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Evaluating the Role of Higher Education Curriculum in Fostering Entrepreneurship Skills among Students in the Mumbai Region

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ABSTRACT:
Recently, there has been a lot of focus on the role that entrepreneurship education plays in innovation, economic growth, and job creation. The growing emphasis on entrepreneurship as a driver of economic development has positioned higher education institutions as critical facilitators in nurturing entrepreneurial competencies among students. This study aims to evaluate the role of higher education curriculum in fostering entrepreneurship skills among undergraduate and postgraduate students in the Mumbai region. Employing a mixed-methods approach, the research gathers both quantitative and qualitative data through structured surveys and semi-structured interviews. Key dimensions examined include curriculum design, exposure to practical entrepreneurial activities, participation in institutional initiatives, and perceived skill development. The study concludes by highlighting the need for a more practice-oriented, interdisciplinary curriculum framework that aligns academic learning with the dynamic needs of the entrepreneurial ecosystem.

KEYWORDS: Entrepreneurship Skills, Higher Education Curriculum, Start-ups, Experiential Learning

INTRODUCTION:

By offering important courses on innovation and entrepreneurship, higher education institutions (HEIs) are the main catalyst behind promoting an entrepreneurial spirit. Innovation and entrepreneurship courses offered at HEIs are often linked to the teaching and development of 21st century skills. In the rapidly changing global landscape, entrepreneurship has become a major force behind innovation, job creation, and economic progress. Higher education establishments have increasingly included entrepreneurship education in their curricula as they understand the importance of creating entrepreneurial attitudes and abilities. The purpose of this research article is to examine how entrepreneurship education is impacted by higher education curricula and how this influences students' entrepreneurial competencies and objectives.

REVIEW OF LITERATURE:

Shaima Al Balushi et al. (2023) have emphasized the pivotal role of entrepreneurship education in fostering innovation, economic growth, and employment generation. Their study highlights the importance of integrating experiential learning, industry collaboration, real-life case studies, and mentorship programs into higher education curricula to enhance entrepreneurial competencies among students. Through a mixed-methods approach, they examine how curriculum design influences students' entrepreneurial attitudes, knowledge, and performance. The literature suggests that effective pedagogical strategies and curriculum elements are critical in shaping students' aspirations and readiness to engage in entrepreneurial ventures.

Pardo-Garcia and Barac (2020) explore how higher education can enhance student employability through innovative training programs that actively engage faculty in fostering student creativity and entrepreneurial competencies. Their case study highlights the effectiveness of problem-solving methodologies applied to sustainable development projects, promoting interdisciplinary collaboration and soft skills development. The increasing formation of multidisciplinary teams and participation in innovation contests demonstrate the role of such initiatives in compensating for limited professional experience and enriching students' CVs. The study further suggests that these experiences can serve as a springboard for entrepreneurial ventures post-graduation.

Ghafar (2020) investigates the integration of 21st century skills within entrepreneurship education, emphasizing their role in shaping graduates capable of driving entrepreneurial impact both within and beyond new venture creation. The study highlights the significance of experiential learning and industry interaction in fostering essential competencies such as leadership, creativity, critical thinking, and social engagement. The findings underscore the necessity of embedding these skills into entrepreneurship curricula to enhance students' entrepreneurial intentions and practical readiness. This research contributes to the discourse on aligning educational outcomes with contemporary workforce demands.

OBJECTIVES OF THE STUDY:

1. To assess the extent to which academic courses have contributed to enhancing students' understanding of the entrepreneurial ecosystem.
2. To examine Students' confidence levels in Key Skills after completing Higher Education.
3. To explore the extent of student participation in entrepreneurship-related initiatives during their higher education.
4. To recommend improvements for curriculum design to better foster entrepreneurship.

HYPOTHESIS OF THE STUDY:

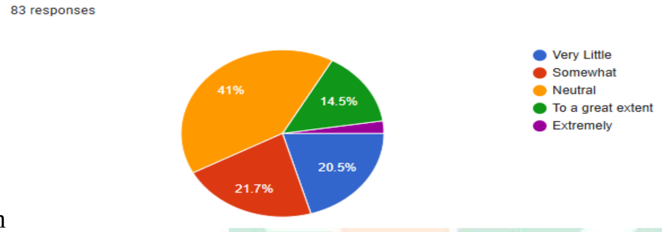
- **Null Hypothesis (H_0):** There is no significant relationship between the current academic curriculum and the development of entrepreneurship skills among students.
- **Alternative Hypothesis (H_1):** There is a significant relationship between the current academic curriculum and the development of entrepreneurship skills among students.
-

RESEARCH METHODOLOGY:

Universe	Mumbai
Method of data collection	Primary and Secondary
Method of Primary Data Collection	Questionnaire by online sites (Open and close ended)
Method of sampling	Random Sampling / Convenience Sampling
No. of Sample Respondents	83
Method of Data Analysis	Likert's Scale

ANALYSIS AND INTERPRETATION OF DATA:

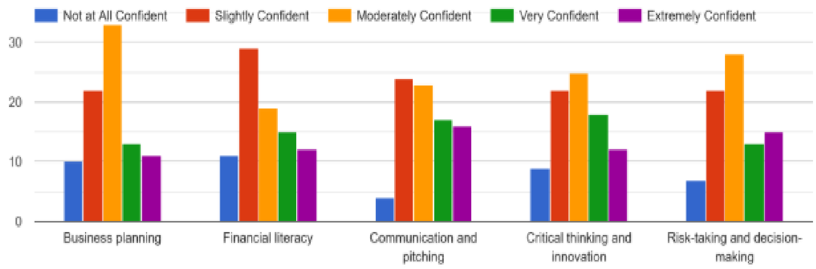
Figure 1: Students' Opinions on the extent to which Courses enhanced their understanding of the Entrepreneurial



Ecosystem

The data reveals that a significant proportion of students (41 per cent) held a neutral stance regarding the extent to which their courses enhanced their understanding of the entrepreneurial ecosystem. A combined 42.2 per cent of respondents indicated limited impact, with 20.5 per cent reporting 'very little' and 21.7 per cent reporting 'somewhat'. Only a small segment perceived strong effectiveness, with 14.5 per cent stating "to a great extent" and a mere 2.3 per cent selecting 'extremely'. These findings suggest a potential gap in curriculum effectiveness in fostering entrepreneurial awareness and understanding.

Figure 2: Students' Confidence Levels in Key Skills after completing Higher Education

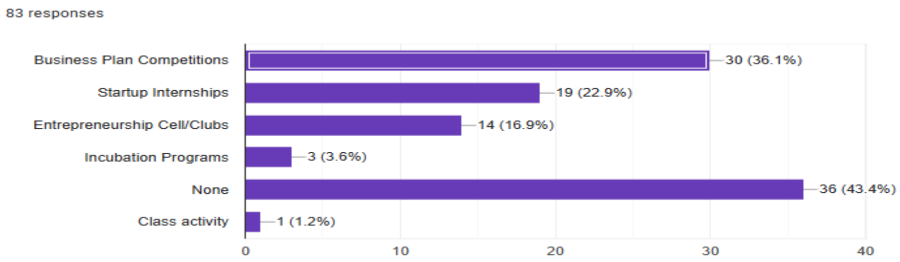


The analysis indicates that "Moderately Confident" was the most frequently selected response across all skill categories, suggesting that while students feel they have acquired a basic to intermediate level of competency, there remains room for deeper skill development. Notably, a considerable proportion of students reported being only "Slightly Confident" or "Not at All Confident," especially in critical thinking, financial literacy, and risk-taking, highlighting potential deficiencies in applied or experiential learning components within the curriculum.

Conversely, "Extremely Confident" and "Very Confident" responses were fewer and relatively concentrated among a limited number of participants, suggesting that only a small subset of students feels fully equipped to apply these skills in real-world entrepreneurial settings. The disparity in confidence levels across respondents may reflect inconsistencies in how different institutions or courses deliver entrepreneurial education.

Overall, these findings imply that although higher education in the Mumbai region plays a moderate role in building entrepreneurial skill sets, there is a clear need for more robust, practice-oriented, and interdisciplinary pedagogical approaches to foster higher levels of confidence, particularly in financial literacy and strategic decision-making.

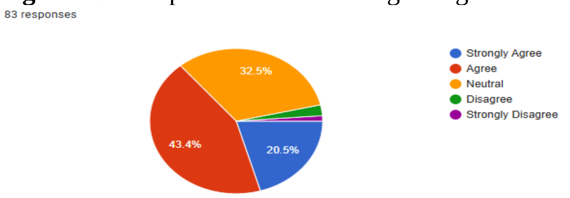
Figure 3: Participation in Entrepreneurship-related initiatives during Higher Education



The data indicates that a considerable number of students did not participate in any entrepreneurship-related initiatives during their academic tenure, suggesting limited practical exposure. Among the various activities, Business Plan Competitions recorded the highest participation, followed by Startup Internships and Entrepreneurship Cell/Clubs. Participation in Incubation Programs was comparatively low, indicating restricted access or institutional support. These findings highlight the need for higher education institutions to strengthen and promote experiential learning opportunities in entrepreneurship.

HYPOTHESIS TESTING:

Figure 4: Perception of Students Regarding Curriculum Support for Entrepreneurship Skill Development



The data collected indicates a substantial proportion of respondents (63.9 per cent) agreed that the current academic curriculum supports the development of entrepreneurship skills. This majority supports the hypothesis that **"There is a significant relationship between the current academic curriculum and the development of entrepreneurship skills among students."**A relatively small percentage of disagreement (3.6 per cent) further strengthens the argument that the curriculum is positively contributing to entrepreneurial skill development. This pattern indicates that while a majority of students clearly perceive the curriculum as effective, the minimal level of disagreement suggests strong support for the alternative hypothesis.

FINDINGS:

- A majority of students (57.8 per cent) reported exposure to entrepreneurship-related courses, while 42.2 per cent had no such exposure.
- Among students who had exposure to entrepreneurship-related courses, **71.1 per cent** had completed only one subject/module, **21.7 per cent** had completed two to three, and only **7.2 per cent**had undertaken more than three modules.
- The majority of students perceived entrepreneurship-related courses as beneficial, with **25.3 per cent**rating them as *highly relevant* and **55.4 per cent** as *relevant*. Meanwhile, **16.9 per cent** expressed a *neutral* stance, and only **2.4 per cent** considered the courses *irrelevant*, reflecting an overall favorable evaluation.
- Only 33.74 per cent reported access to mentorship or incubation centers within their institutions.
- Entrepreneurial projects and simulations were included in just 42.17 per cent of surveyed institutions.

CONCLUSION:

The findings highlight that an effective curriculum should balance theoretical understanding with hands-on application. Experiential learning can be strengthened by offering students real-world opportunities such as internships, entrepreneurship competitions, and business incubators, enabling them to apply their knowledge and build essential skills. Additionally, encouraging faculty to engage with industry, conduct research, and pursue ongoing professional development can significantly enhance the quality of entrepreneurship education. Furthermore, regular updates to the curriculum, guided by industry expert inputs and student feedback, are crucial for maintaining its relevance and practical applicability.

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A Study on Evaluation and Immersion of Financial Markets and Technology in India

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Abstract:
Abstract: This research paper presents a thorough examination of the dynamic landscape of the Indian FinTech industry, positioned as a global growth leader. With a market valuation of $50 billion in 2021, the industry is expected to expand to $150 billion by 2025, with a projected Total Addressable Market of $1.3 trillion. Sectors like Payments, Digital Lending, InsurTech, and Wealth Tech are flourishing, driving financial inclusion and innovation in India. The paper aims to analyse the transformative trends of digitalization on investments, utilizing quantitative research approaches and secondary data. Expected outcomes include insights into retail investor growth, increased trading efficiency, global participation, accessibility enhancements, cost reductions, and improved transparency in the stock market. Challenges in data security underscore the need for collaborative efforts among regulators, the government, and industry stakeholders. Suggestions emphasize the role of digitalization in fostering financial literacy, regulatory adaptation to the digital shift, and the promise of technologies like blockchain and AI in sustaining fintech growth while addressing data security challenges.

Keywords: Digitalization, Demat accounts, Fintech, Indian financial markets, Investment growth

Introduction:
India's financial landscape is undergoing a profound transformation, propelled by the rapid evolution of its FinTech industry. From a modest $50 billion valuation in 2021, the sector is gearing up for exponential growth, with projections soaring to $150 billion by 2025. This paper delves into the intricacies of this digital revolution, exploring key sectors such as Payments, Digital Lending, InsurTech, and WealthTech, and unravelling the unprecedented surge in the Total Addressable Market for Indian FinTech, slated to reach an impressive $1.3 trillion by 2025.
Platforms like LenDenClub, Groww, Kite by Zerodha, Upstox Pro, Angel One, 5 Paisa, ET Money, Piggy, Coin by Zerodha, and Paytm Money redefine the investment landscape. Between 2018 and 2030, the global market for investment apps is expected to witness a robust growth, with a projected Compound Annual Growth Rate (CAGR) of 16.5%. The convergence of these advancements with stock market digitalization and the rise of algorithmic trading open new avenues for retail investors and institutions.
Groww leads with 6.63 million active investors in India. The dematerialization of shares, starting in the late '90s, streamlines processes, boosting investor confidence. The surge in new demat accounts, reaching 4.2 million in December 2023, indicates growing interest in equities, driven by financial literacy, digitization and user-friendly platforms. This trend signals a promising future for investment growth in India Firms engaged in High-frequency trading (HFT), significantly contribute to trading volumes on exchanges.
In the Assets Under Management (AUM) of the Indian Mutual Fund Industry as of December 31, 2023, amounted to ₹50,77,900 crore. Over the past decade, the AUM of the Indian MF Industry has experienced a remarkable growth, surging from ₹8.26 trillion as of December 31, 2013, to ₹50.78 trillion as of December 31, 2023, reflecting an impressive six-fold increase within this 10-year period.
While this digital metamorphosis brings unprecedented benefits, it also introduces challenges, particularly in safeguarding user data privacy and ensuring that segments without access to digital technologies are not marginalized. This study aims to dissect the multifaceted impacts of digitization on Indian investments and financial markets, offering insights into its implications for investors and stakeholders.

Objectives:
1. To Explore the transformative trends of digitalization on investments in the Indian FinTech industry, emphasizing key sectors.
2. To Identify challenges and opportunities in the FinTech landscape.
3. To propose recommendations and strategies for stakeholders, including regulators, government agencies, and industry players.

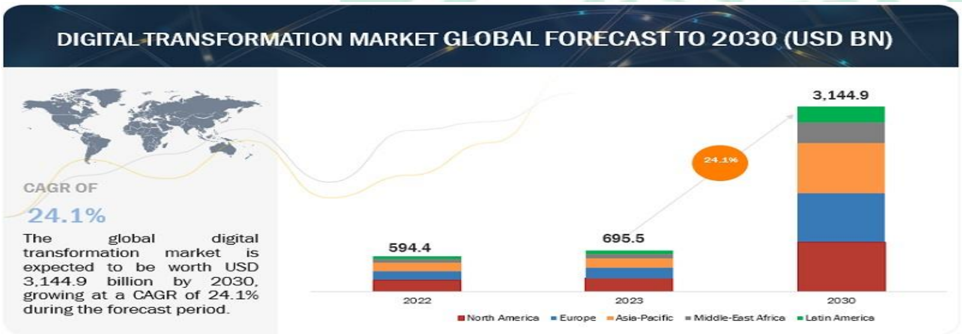
Literature Review:
Capital markets facilitate risk diversification, enabling specialization in productive technologies (Saint-Paul, 1992). Financial ecosystems evolve with technological advancements, replacing obsolete systems and improving service delivery (Clemons & Weber, 1998; Adomavicius et al., 2008). IT plays a transformative role, driving e-commerce and enhancing global financial integration (Vermaa et al., 2012).
Fintech applies technology to improve financial services, fostering innovation across startups, tech firms, and financial institutions (Schueffel, 2016). It enhances financial inclusion through digital cash transfers and peer-to-peer lending, with

regulatory frameworks playing a crucial role (Guild, 2017). Fintech integrates AI, cloud computing, and blockchain into traditional banking, revolutionizing areas like lending and transaction banking (Gomber, 2017).
Algorithmic trading automates investment decisions, increasing trading volumes and efficiency in markets like Dalal Street (Geetika, 2017). Fintech tools aid risk assessment and portfolio diversification, helping investors make informed decisions (Kumar & Makhija, 2018). Startups in the sector attract significant investments, with emerging trends including digital insurance, robo-advisory, and cross-border payments (Pant, 2020).
India ranks among the top fintech hubs, benefiting from government policies and rapid digital adoption (Kaur & Dogra, 2019; Kukreja et al., 2021). The post-demonetization era accelerated fintech adoption, reshaping financial services despite challenges in implementation (Maurya & Kulkarni, 2022). Fintech has transformed stock markets through online trading, robo-advisory, and real-time analytics, making investing more accessible (Mondal & Khan, 2024).

Research Methodology:
The research methodology employed in this study is primarily quantitative, focusing on a thorough examination of the dynamic Indian FinTech industry. The quantitative research approach utilized to analyze numerical data, enabling the derivation of insights into market valuations and growth rates. Complementing this quantitative focus, the study extensively relied on secondary data sources to provide a comprehensive perspective. Academic journals contributed theoretical foundations, offering insights into conceptual frameworks and historical perspectives. Government reports were scrutinized to understand the regulatory landscape, encompassing policy changes and government initiatives. Financial institutions' publications provided practical insights into industry trends and the financial performance of key players. Additionally, online sources, including reputable financial news websites and market research platforms, were consulted for real-time updates and expert opinions. This blended approach, integrating quantitative analyses with insights from diverse secondary sources, aimed to deliver a comprehensive exploration of the transformative trends within the Indian FinTech sector.

Data Analysis:
Increase in Retail Sector Investment:

Source: The Economic Times



Findings & Interpretations

1. **Rapid Retail Investor Growth:**

- The last five years have witnessed a remarkable surge in the Indian retail investor landscape.
- The number of active demats accounts tripled, reaching 11 crores in January 2023.
- Overall holdings of assets and securities by retail investors more than doubled, reaching an estimated value of Rs. 100 lakh crores in 2022.

2. **Digitalization Driving Increased Trading:**

- Digitalization has significantly elevated trading volumes, providing investors with convenient online platforms for efficient trade execution.

- The automation of trading processes through digital platforms has notably improved the speed and efficiency of trade execution, resulting in higher trading volumes and increased liquidity.

3. **Global Participation Fuelled by Digitalization:**

- Digitalization has facilitated global participation in the Indian stock market, attracting foreign investors and consequently boosting trading volumes and liquidity.
- Algorithmic trading, made possible by digitalization, has contributed to increased trading volumes by executing trades at high speeds and capturing short-term market opportunities.

4. **Enhanced Accessibility for Retail Investors:**

- Digitalization has significantly enhanced the accessibility for individual investors to engage in the stock market.
- The proliferation of online trading platforms empowers investors to trade and invest in stocks from any location and at any time.

5. **Cost Reductions for Investors:**

- Digitalization has led to a considerable reduction in fees and expenses associated with financial investments.
- Online trading platforms offer significantly lower fees for buying and selling stocks compared to traditional brokerage firms, enabling regular investors to participate with a lower financial outlay.

6. **Greater Transparency in Stock Market:**

- The advent of digitalization has increased the level of transparency in the stock market.
- Investors now have access to real-time market data and can closely monitor their holdings through online trading platforms, making it easier for them to make informed decisions.

Conclusion:

In summary, the research reveals India's FinTech industry's remarkable growth, projecting from $50 billion in 2021 to an estimated $150 billion by 2025, with a Total Addressable Market of $1.3 trillion. **Key sectors like Payments, Digital Lending, InsurTech, and WealthTech are thriving. The study emphasizes the surge in retail investors, increased trading efficiency through digitalization, and enhanced global participation.** (cant be in conclusion) However, challenges in data security highlight the importance of collaborative efforts between regulators, the government, and industry stakeholders to ensure sustained growth and integrity in India's FinTech landscape.

Suggestions:

Digitalization is driving financial literacy in India through online tutorials, webinars, and social media campaigns, making the stock market accessible to a wider audience, especially the youth and those in smaller cities. Regulatory bodies, including SEBI and the RBI, are adapting to the digital shift, implementing regulations to protect investors and ensure market integrity. Innovations like sandbox testing by the RBI foster digital creativity and enhance trust in emerging fintech offerings and balance between innovation and consumer protection. Regulations like UPI and KYC norms strengthen the security of digital transactions. Looking ahead, fintech in India shows promise with advancements in technologies like blockchain and AI, offering sophisticated solutions. Addressing challenges such as data security requires collaborative efforts between the government, regulators, and industry stakeholders to sustain the growth and integrity of the fintech ecosystem.

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Green Transitions: The Role of Change Management

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Abstract
The growing emphasis on sustainability has led organizations to adopt eco-friendly practices as part of their operational and strategic frameworks. Change management is crucial in ensuring a smooth transition towards sustainable business models. This study explores the role of change management in facilitating the adoption of eco-friendly practices within organizations. Using a secondary data approach, the research identifies key challenges and barriers that hinder sustainability initiatives, including financial constraints, employee resistance, and regulatory complexities. Additionally, the study examines the best practices and strategies of organizations across various industries to manage green transitions successfully. The findings highlight the importance of leadership, corporate culture, and structured change management frameworks in driving environmental sustainability. The study contributes to the growing body of literature on sustainable change management and provides insights for businesses aiming to integrate eco-friendly practices effectively.

Keywords: Change Management, Sustainability, Green Transitions, Organizational Transformation, Eco-Friendly Practices

Introduction
In the face of mounting environmental concerns, shifting regulatory landscapes, and growing stakeholder expectations, sustainability has emerged as a strategic priority for organizations across the globe. As climate change, resource depletion, and environmental degradation intensify, businesses are increasingly pressured to adopt eco-friendly practices that align with broader global sustainability goals such as the United Nations Sustainable Development Goals (UN SDGs). However, transitioning toward environmentally responsible operations is not merely a technical or operational shift—it requires profound organizational change. In this context, change management becomes a critical enabler of sustainable transformation.
Change management refers to the structured processes and strategies organizations use to transition individuals, teams, and operations from a current state to a desired future state. When applied to sustainability, it is pivotal in integrating green practices into business models, reshaping corporate culture, and aligning internal and external stakeholders around environmental objectives. Whether reducing carbon emissions, adopting renewable energy, promoting circular economy principles, or implementing sustainable supply chains, such transformations demand deliberate planning, leadership commitment, and employee engagement.
Despite their importance, organizations often face significant barriers when implementing sustainability initiatives. These include financial constraints, employee resistance, lack of leadership support, and regulatory complexities. Therefore, understanding how change management can facilitate adopting eco-friendly practices and overcoming the associated challenges is essential for scholars and practitioners.

Objectives
1. To examine the role of change management in facilitating adopting eco-friendly practices within organizations.
2. To identify key challenges and barriers organizations face when implementing sustainable initiatives.
3. To explore best practices and strategies for successfully managing green transitions in various industries.

Methodology
The study is based on secondary data, which is collected from journals, books, and websites.

Problem Statement
In the wake of increasing environmental concerns and regulatory pressures, organizations worldwide strive to integrate eco-friendly practices into their business operations. However, the transition towards sustainability is often met with significant challenges, including financial constraints, employee resistance, lack of leadership commitment, and regulatory complexities. While change management is critical in ensuring a smooth transition, many organizations struggle to implement effective strategies that drive long-term sustainability.
Despite the growing body of literature on sustainable business practices, there remains a gap in understanding how change management frameworks can be leveraged to overcome barriers and facilitate green transitions across industries.

Organizations require structured approaches to address the complexities of sustainability while ensuring stakeholder engagement and operational efficiency.

This study seeks to address this gap by examining the role of change management in enabling the adoption of eco-friendly practices, identifying key challenges organizations face, and exploring best practices that contribute to successful green transitions. By analyzing secondary data from various industries, the research aims to provide actionable insights for businesses, policymakers, and change leaders striving to embed sustainability into their organizational culture and operations.

Discussion

Due to environmental concerns, regulatory pressures, and consumer expectations, the transition to eco-friendly practices has become a priority for organizations worldwide. However, integrating sustainability into business operations is complex and requires a structured approach. Change management plays a crucial role in ensuring the successful adoption of green practices by addressing challenges, managing resistance, and implementing effective strategies.

The Role of Change Management in Facilitating Eco-Friendly Practices

Change management provides a systematic framework for organizations to transition toward sustainability by ensuring that employees, processes, and strategies align with green objectives. According to Kotter's (1996) eight-step change model, leadership, vision-setting, and stakeholder engagement are essential components of any successful transformation. Applying this model to sustainability, organizations must:

- Create Awareness: Employees and stakeholders must understand the importance of sustainability and its long-term benefits.
- Develop a Vision and Strategy: A clear roadmap helps align sustainability goals with business objectives.
- Empower Employees for Action: Training programs and incentives encourage employees to embrace eco-friendly practices.
- Institutionalize Change: Sustainability must be embedded into corporate culture through policies, monitoring, and continuous improvement.

Successful examples include companies like Unilever, which integrates sustainability into its corporate strategy through structured change management programs, reducing its carbon footprint while maintaining profitability.

Challenges and Barriers in Implementing Sustainable Initiatives

Despite the growing recognition of sustainability, organizations face several challenges when adopting eco-friendly practices:

- Financial Constraints: Many organizations struggle with the high initial investment required for sustainable technologies, such as renewable energy systems and waste management infrastructure (Porter & van der Linde, 1995).
- Employee Resistance: Change is often met with skepticism, particularly when employees fear job losses or increased workload due to sustainability initiatives (Armenakis & Harris, 2009).
- Regulatory and Compliance Issues: Organizations operating across multiple regions must navigate complex environmental regulations that vary by country (World Economic Forum, 2023).
- Short-Term Business Pressures: Many businesses prioritize short-term profitability over long-term sustainability goals, making it difficult to allocate resources toward green initiatives.

Addressing these barriers requires a comprehensive change management approach that balances financial, human, and operational factors.

Best Practices and Strategies for Managing Green Transitions

Organizations that successfully implement sustainability initiatives often follow key best practices:

- Leadership Commitment and Vision: Top management must champion sustainability efforts and integrate them into corporate strategy (Kotter, 2012).
- Employee Engagement and Training: Organizations should involve employees in sustainability efforts through training programs, incentives, and participatory decision-making (Senge, 2006).
- Adoption of Green Technologies: Companies can leverage innovations such as renewable energy, circular economy models, and waste reduction strategies to enhance sustainability (Elkington, 1997).
- Stakeholder Collaboration: Engaging with suppliers, customers, policymakers, and communities can create a sustainable business ecosystem (Freeman, 1984).
- Monitoring and Continuous Improvement: Organizations should track their sustainability performance using metrics and make necessary adjustments based on feedback and changing environmental regulations. For instance, Tesla has successfully implemented sustainability-driven change management by focusing on innovation, regulatory alignment, and consumer engagement, making it a leader in the green automotive sector.

Case Studies on Sustainability-Driven Change Management

1. Unilever: Sustainable Living Plan and Holistic Change Management

Background

Unilever, a multinational consumer goods company, launched its Sustainable Living Plan (USLP) in 2010 to integrate sustainability into its business strategy. The company aimed to halve its environmental footprint, improve livelihoods, and enhance the health and well-being of its customers.

Change Management Strategies Used

- Strong Leadership Commitment: CEO Paul Polman spearheaded the initiative, embedding sustainability into corporate decision-making. He abolished quarterly earnings reports to focus on long-term sustainability.
- Stakeholder Engagement: Unilever collaborated with governments, NGOs, and suppliers to promote sustainable sourcing and responsible supply chain management.
- Employee Involvement: The company introduced employee sustainability training programs, ensuring that all levels of the organization were aligned with its environmental objectives.
- Innovation and Technology: Unilever invested in sustainable product innovation, such as reducing plastic packaging and launching biodegradable detergent formulas.
- Data-Driven Decision Making: The company used key performance indicators (KPIs) to measure sustainability progress and ensure accountability.

Results

- Reduced CO_2 emissions by 65% across global operations.
- Achieved 100% sustainable palm oil sourcing, reducing deforestation.
- 80% of Unilever's brands (such as Dove, Lifebuoy, and Ben & Jerry's) grew due to sustainability efforts.

Key Takeaway

Unilever's structured approach to change management, combining leadership commitment, innovation, and stakeholder collaboration, positioned it as a leader in sustainable business practices.

2. Tesla: Leading the Green Energy Revolution

Background

Tesla, led by CEO Elon Musk, has disrupted the automotive and energy industries by pioneering electric vehicles (EVs), renewable energy, and battery technology. Unlike traditional car manufacturers, Tesla embedded sustainability into its corporate DNA from inception.

Change Management Strategies Used

- Visionary Leadership: Musk promoted a long-term vision of a fossil-free future, pushing bold innovations despite industry resistance.
- Technology-Driven Sustainability: Tesla invested heavily in battery technology, solar energy, and energy storage solutions to promote clean energy.
- Agile and Adaptive Change Management: The company used rapid prototyping and continuous iteration to improve energy efficiency and performance in its products.
- Customer and Market Influence: Tesla influenced broader market trends by making EVs desirable and proving sustainability can be profitable and scalable.
- Policy Advocacy and Regulatory Influence: Tesla actively worked with governments to promote EV incentives and carbon credits, accelerating the shift to sustainable mobility.

Results

- Over 1.3 million EVs sold in 2022, reducing millions of tons of CO_2 emissions.
- Increased global solar energy adoption through SolarCity and Powerwall storage solutions.
- Pushed legacy automakers to accelerate EV production, influencing industry-wide sustainability shifts.

Key Takeaway

Tesla's approach to change management showcases the power of visionary leadership, disruptive innovation, and market influence in driving large-scale sustainability transitions.

3. IKEA: Sustainable Supply Chains and Circular Economy

Background

IKEA, the world's largest furniture retailer, committed to 100% renewable and recycled materials as part of its sustainability strategy. The company adopted the circular economy model, focusing on reducing waste, increasing recyclability, and ensuring ethical sourcing.

Change Management Strategies Used

- Sustainable Sourcing: IKEA shifted to 100% FSC-certified wood, reducing deforestation impact.
- Renewable Energy Investments: IKEA invested €2.5 billion in wind and solar energy, making its operations energy-independent.
- Consumer Engagement Initiatives: IKEA launched furniture buy-back and recycling programs, promoting sustainable consumption habits.
- Employee Empowerment and Training: Sustainability workshops and incentives encouraged employees to adopt and advocate green practices.

- Collaboration with Suppliers: IKEA worked closely with suppliers to ensure responsible sourcing and reduce carbon emissions in logistics.

Results

- IKEA achieved 100% sustainable cotton sourcing and transitioned 60% of materials to renewable or recycled sources.
- Reduced carbon footprint per product by 20% despite business growth.
- Generated €1 billion in green revenue through sustainable product lines.

Key Takeaway

IKEA's approach to sustainability transition relied on a structured change management framework integrating supply chain transformation, circular economy principles, and stakeholder engagement.

4. Patagonia: A Purpose-Driven Sustainability Model

Background

Patagonia, an outdoor apparel company, has long been a leader in environmental sustainability. Sustainability is embedded at the core of its business model. The company follows a mission-driven change management approach, prioritizing ethical sourcing, waste reduction, and climate activism.

Change Management Strategies Used

- Corporate Activism: Patagonia donates 1% of annual revenue to environmental causes and actively promotes climate policies.
- Product Lifecycle Sustainability: To reduce waste, the company focuses on repairability, recyclability, and second-hand resale programs.
- Transparency and Accountability: Patagonia openly reports its carbon footprint and ethical sourcing practices.
- Employee and Customer Engagement: Employees receive paid time off for activism, and customers are encouraged to buy fewer, but more durable products.

Results

- Achieved 90% recycled materials usage in product lines.
- Generated over $10 million for environmental charities through activism campaigns.
- Became one of the most trusted sustainable brands, influencing other retailers to follow suit.

Key Takeaway

Patagonia demonstrates how mission-driven change management, corporate activism, and radical transparency can make sustainability a competitive advantage.

Conclusion

The integration of eco-friendly practices within organizations has become a necessity in response to growing environmental concerns, regulatory demands, and evolving consumer expectations. However, transitioning toward sustainability is not a straightforward process and requires organizations to navigate several challenges, including financial constraints, employee resistance, operational disruptions, and complex regulatory frameworks. This study has examined the crucial role of change management in facilitating green transitions, highlighting the need for strategic planning, leadership commitment, and stakeholder engagement.

Change management is a guiding framework for ensuring that sustainability initiatives are effectively implemented and sustained over time. Despite the challenges associated with green transitions, organizations that successfully integrate sustainability into their operations benefit from enhanced corporate reputation, regulatory compliance, competitive advantage, and long-term financial gains. Case studies from companies such as Unilever and Tesla demonstrate that sustainable business practices can lead to innovation, operational efficiency, and stakeholder trust. However, achieving these outcomes requires overcoming resistance to change, securing adequate financial investment, and ensuring alignment across all levels of the organization.

While this study primarily relied on secondary data, it underscores the importance of continuous research in exploring industry-specific change management models for sustainability. Future studies should focus on empirical research to assess the long-term impact of change management strategies on environmental and business performance. Additionally, the role of digital transformation and emerging technologies in accelerating sustainability efforts presents an area for further exploration.

In conclusion, sustainability-driven change management is not merely an operational adjustment but a transformative shift in organizational culture and strategy. Businesses that proactively embrace sustainable practices and integrate change management principles into their approach will be better positioned to navigate environmental challenges, comply with regulations, and contribute to a more sustainable future. The successful implementation of eco-friendly practices requires a collaborative effort from leadership, employees, policymakers, and other stakeholders. By embedding sustainability into their core business strategies, organizations can create lasting environmental and economic value, ensuring long-term resilience in an increasingly eco-conscious world.

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The Economics of FOMO: Analyzing Its Influence on Consumer Spending Patterns

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Abstract
Fear of Missing Out (FOMO) isnow a powerful psychological stimulusthatdirects consumer spending. This researchinvestigates the economic effect of FOMO from primary qualitative data obtainedfrom respondents using in-depth interviews and focus groups. Participants provided insights into their reasonsforpurchaseindifferent sectors, rangingfrom technology to fashion, travel, and shopping online. Thematic analysis uncoveredprimary behavioral trends, suchas impulsive buying, social validation as a driver of purchasing, and the role of online marketing in enhancing FOMO-driven consumption. Evidenceindicates that FOMO drives discretionary spending, with consumers choosinginstant gratification over long-term financial planning. Companies strategically leverage this behavior byusing limited-time promotions, social media fads, and scarcity marketing. This researchadds to behavioral economics throughgreaterunderstandingof how FOMO influences consumer choice and demandin the marketplace.

Keywords: FOMO, Consumer Expenditure, Behavioral Economics, Impulse Purchase, Digital Marketing

1. Introduction:

The phenomenon of Fear of Missing Out (FOMO) has emerged as a powerful psychological force that influences consumer behavior in the modern digital era. Characterized by an all-pervasive fear of missing out on experiences or opportunities, this phenomenon is fueled by the ubiquitous presence of social media and the instantaneity of digital connectivity. Consequently, FOMO has a vital impact on modern-day expenditure behavior, which in many cases culminates in hasty purchases, changes in monetary judgment, and a higher desire for time-constrained promotions and limited-edition products. Understanding the economic consequences of FOMO is necessary for multiple stakeholders, such as businesses, policymakers, and investment advisors.

The current study focuses on the internal mechanisms through which FOMO influences consumer spending, exploring how it affects market behavior and broader economic consequences of such consumer trends. Through exploring these dynamics, the study will offer insightful findings on how FOMO influences not only personal buying behavior but also larger economic trends and market structures.

2. Review of literature:

Pane, H. P., Luthfi, S., Napitupulu, I., Situmorang, S. H., & Sembiring, B. K. F. (2024). The Psychological Pull of FoMO in Consumer Behavior: A Literature Review. International Journal of Economics and Management Sciences, 1(4), 402–418. The study examines how FOMO, heightened by social media, influences impulsive purchasing behaviors, concluding that consumers make immediate purchases due to fear of missing limited opportunities.

Van Solt, M. (2019). #FOMO: How the Fear of Missing Out Drives Consumer Purchase Decisions (Doctoral dissertation). Florida International University. Van Solt investigates According to a study that examines the relationship between FOMO (Fear of Missing Out) and customers' decisions to make experience purchases, the presence of close friends at events amplifies this effect.

Fahmi, M. (2024). Exploring the Role of Fear of Missing Out (FOMO) on Consumer Behaviour: A Study of Spending, Trash Talking, and Anxiety. Journal of Management Practices, Humanities and Social Sciences, 8(5), 1-13. This study looks at the relationship between FOMO and poor word-of-mouth, excessive expenditure, and consumer anxiety. Based on an analysis of 421 customer data, the study concludes that these negative consumer behaviors are substantially predicted by obsessive brand enthusiasm, which is fueled by FOMO.

Alfina, S., Hartini, S., & Mardhiyah, D. (2023). FOMO Related Consumer Behaviour in Marketing Context: A Systematic Literature Review. Cogent Business & Management, 10(3), 2250033. In order to comprehend the function of FOMO in consumer behavior, this thorough study examines 42 empirical investigations. The authors point out that although FOMO is frequently associated with unpleasant psychological states, it may also result in greater spending, which offers marketers both chances and problems.

Moore, J. (2024). She Blew Her Life Savings. How Tech Is Turning Casual Spenders Into Binge Shoppers. Barron's. In order to comprehend the function of FOMO in consumer behavior, this thorough study examines 42 empirical investigations. The authors point out that although FOMO is frequently associated with unpleasant psychological states, it may also result in greater spending, which offers marketers both chances and problems.

3. Research Gap :

3.1 Long-term Financial Impact: Not much study has been done on the long-term effects of FOMO-driven spending on debt accumulation, savings, and financial stability.

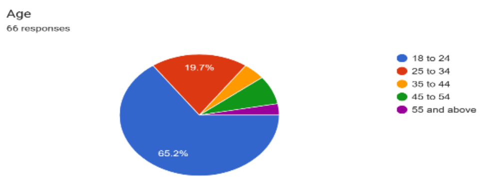
3.2 Social Media Amplification: Although research shows that FOMO contributes to impulsive buying, little is known about how it is amplified by social media marketing.
3.3 Economic Repercussions: More research is required to determine the wider effects of FOMO-driven expenditure on consumer debt and market trends.
3.4 Behavioral Patterns: Insights on long-term spending patterns impacted by FOMO are lacking in the literature currently in publication, which concentrates on snap judgments.
3.5 Influence of Digital Marketing: More research is needed to determine how influencers and targeted internet ads contribute to FOMO-based purchasing patterns.

4. Objectives:

- To analyze how FOMO influences impulsive and luxury spending.
- To examine the role of social media in amplifying FOMO-driven purchases.
- To assess FOMO's impact on savings, debt, and market trends.

5. Hypothesis:
Null Hypothesis (H_0): FOMO has no significant impact on impulsive and luxury spending.
Alternative Hypothesis (H_1): FOMO significantly increases impulsive and luxury spending.

6. Data Analysis



The statistics reveal a high age spread, with the 18-24 age bracket leading at 65.2%, followed by the 25-34 age bracket at 19.7%. The older age brackets are smaller, with 35-44 standing at 4.5% and 45-54 at 7.6%. The graph is heavily biased towards younger generations.

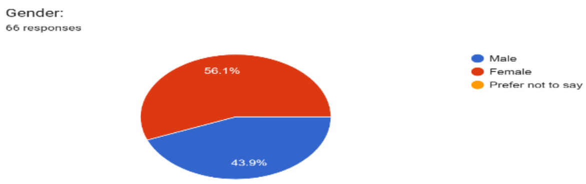
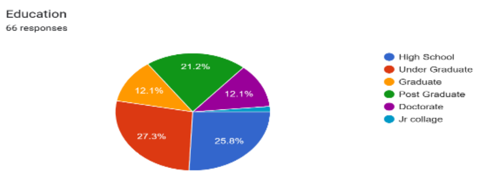
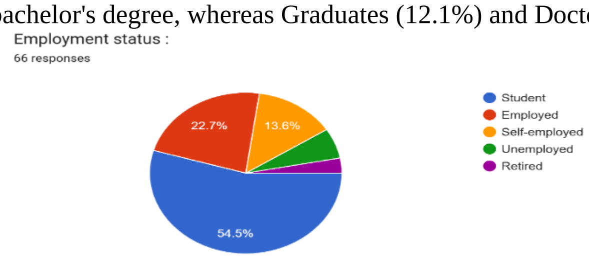


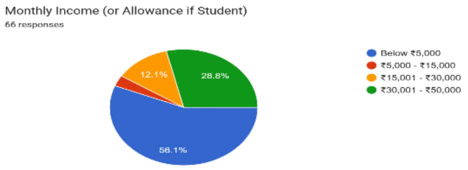
Chart illustrating gender breakdown would indicate that females constitute the majority at 56.1%, with males at 43.9%. The chart illustrates a marginal female majority, with a close to even gender balance overall.



Postgraduates (21.2%) undertake further studies beyond a bachelor's degree, whereas Graduates (12.1%) and Doctorates (12.1%) form a lower percentage.



The pie chart indicates that 54.5% of 66 respondents are students, followed by 22.7% who work. 13.6% are self-employed, and 6.1% are unemployed. Another smaller group, 6.1%, is unemployed, and 3% are retired. The data indicates a high percentage of a student population followed by a combination of working, self-employed, unemployed, and retired people.



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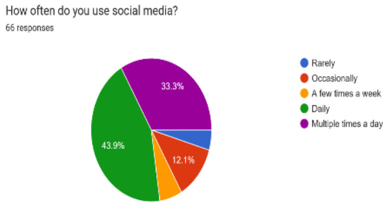
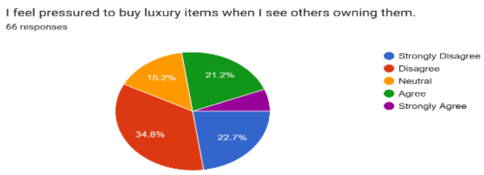


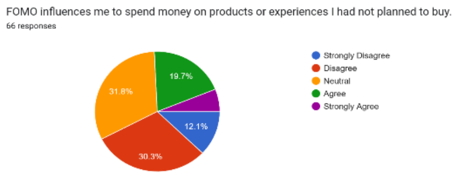
The pie chart indicates that 43.9% of the respondents use social media every day, 33.3% use it several times a day. There is a smaller portion, 6.1%, which uses it a few times a week, and 12.1% uses it from time to time. The least active portion is 4.5%.

The pie chart indicates that 48.5% of the respondents occasionally shop online, 24.2% shop online seldom, 15.2% shop online occasionally, 10.6% shop online every day, and 1.5% shop online multiple times a day, reflecting diverse shopping habits. The data implies that fewer people shop online frequently.

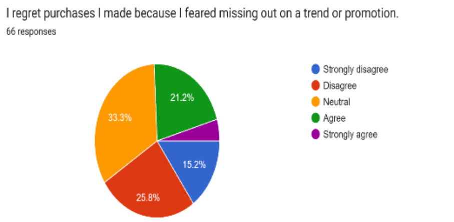
The pie chart indicates opinions of respondents about unplanned buys because of FOMO for limited-time promotions. 30.3% are neutral, 30.3% disagree, and 12.1% strongly disagree. But 24.2% agree to be influenced by such promotions, and 3% strongly agree, indicating that a minority would be highly prone to unplanned buys because of time-sensitive offers.



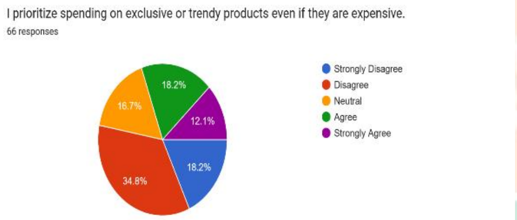
The pie chart indicates the respondents' sense of pressure to purchase luxury goods when they notice others possessing them. The majority of respondents disagree, with 34.8% disagreeing and 22.7% strongly disagreeing. Yet, 21.2% agree and 6.1% strongly agree, showing a minority experiencing high pressure to purchase luxury goods. The statistics indicate the majority of respondents do not fall prey to social pressure.



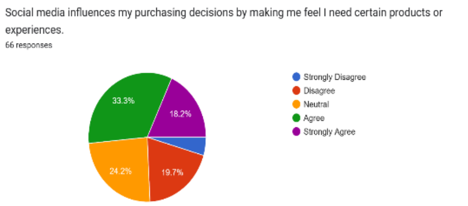
The pie chart indicates that 31.8% of the respondents are affected by FOMO in unplanned buying. But 30.3% disagree, 12.1% strongly disagree, and 19.7% agree that FOMO leads them to spend on unplanned products or services. A minority of 6.1% strongly agrees that they are susceptible to FOMO spending**.**



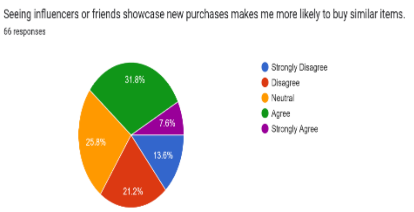
The pie chart shows that 33.3% of respondents felt neutral about their purchases influenced by trends or promotions, while 21.2% agreed, and 4.5% strongly agreed, with 25.7% experiencing regret due to FOMO-based spending. The remaining 41% disagreed, indicating a significant portion of individuals remain uncertain or have experienced regret.



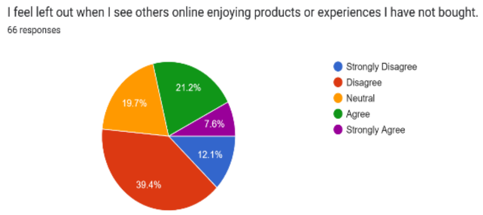
The pie chart shows that 34.8% of respondents disagree with spending on expensive, trendy items, while 18.2% strongly disagree, 16.7% remain neutral, and nearly 30% agree, indicating varying consumer spending behaviors. Despite this, a significant minority still values these items, highlighting varying consumer spending behaviors



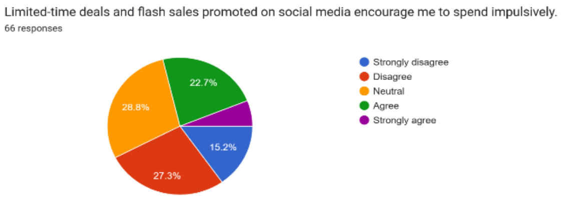
The data shows that over 50% of respondents acknowledge the impact of social media on their purchasing decisions, with 33.2% agreeing and 18.2% strongly agreeing. However, 24.3% remain neutral, and 19.7% disagree, suggesting that some individuals remain unaffected or indifferent to the influence of social media.



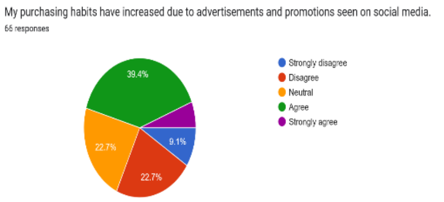
The data shows that 31.8% of respondents agree that peer and influencer influence influences purchasing behavior. However, 25.8% remain neutral, suggesting occasional influence. 21.2% disagree, and 13.6% strongly disagree, suggesting 35% of participants do not feel pressured to buy items based on peer influence. Overall, some individuals resist or remain indifferent to external influences.



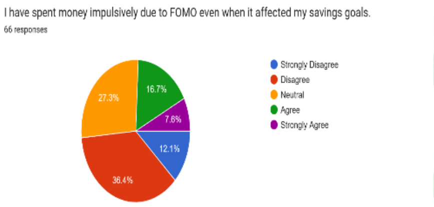
The pie chart shows that 51.5% of people disagree or strongly disagree with others online enjoying products or experiences they haven't purchased, while 28.8% feel FOMO (fear of missing out), with 21.2% agreeing and 7.6% strongly agreeing. 19.7% remain neutral, possibly feeling indifferent or ambivalent about the issue.



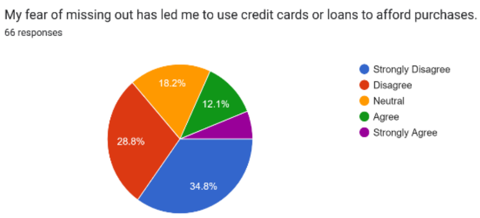
The pie chart shows that 42.5% of people disagree or strongly disagree with limited-time deals and flash sales promoted on social media, suggesting they are not easily influenced. However, 28.85% acknowledge being influenced to some degree, with 22.7% agreeing and 6.15% strongly agreeing that such sales can lead to impulsive purchases.



The pie chart shows that 45.5% of respondents believe their purchasing habits have increased due to social media ads, while 22.7% remain neutral. However, 31.8% disagree, indicating that social media advertising effectively drives consumer spending for a significant portion of people.

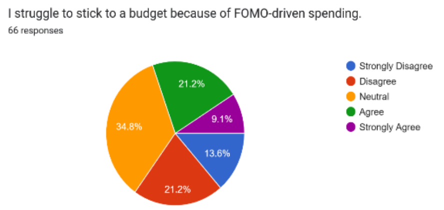


The pie chart shows that 48.5% of respondents disagree with FOMO-driven spending, while 27.3% remain neutral. However, 24.3% admit to being influenced by FOMO, with 16.7% agreeing and 7.6% strongly agreeing, despite the impact on savings goals. This suggests that financial discipline is not always maintained.

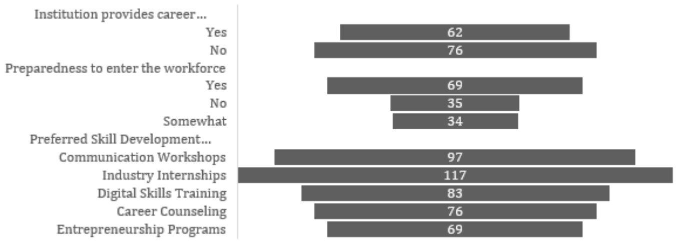


The pie chart shows that FOMO (fear of missing out) influences people's financial decisions, particularly in using credit cards or loans. Most people avoid debt due to social pressures, but nearly one in five use them to keep up with trends or experiences they fear missing out on.

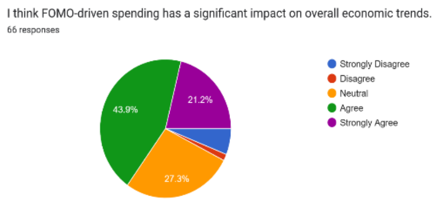
 ISBN No- 978-93-342-5395-5



The pie chart shows that fear of missing out (FOMO) influences people's financial decisions, particularly in using credit cards or loans for purchases. A majority of 63.6% disagree or strongly disagree, suggesting most avoid debt due to social pressures. However, 18.2% acknowledge FOMO has led them to use credit or loans, with 12.1% agreeing and 6.1% strongly agreeing. This suggests nearly one in five individuals borrow money to keep up with trends or experiences they fear missing out on.



The pie chart indicates that 66 respondents think that businesses and marketers apply FOMO tactics to control consumer expenditure. The majority, 60.6%, agree and strongly agree, with 22.7% strongly agreeing. Fewer disagree, with 7.6% and 4.5% strongly disagreeing. The rest, 27.3%, are neutral, showing uncertainty or no strong opinion.



The pie chart shows 43.9% of 66 participants agree that FOMO-driven spending significantly impacts economic trends, with 21.2% strongly agreeing. A small percentage of respondents disagree, likely around 7.6%, ensuring 100% representation.

Findings :

To determine whether the null hypothesis (H_0) or the alternative hypothesis (H_1) is accepted, we need to assess the data in relation to FOMO’s impact on impulsive and luxury spending.

Restating the Hypotheses:

1. Impulsive Spending & FOMO:
   - 31.8% of respondents agreed that FOMO influenced their unplanned purchases.
   - 24.3% admitted that FOMO led them to spend despite its impact on savings goals.
   - 28.85% acknowledged that social media flash sales encouraged impulsive buying.
2. Luxury Spending & Social Influence:
   - 27.3% felt pressured to purchase luxury goods when seeing others possess them.
   - Nearly 30% admitted to spending on expensive, trendy items despite disagreement from 53%.
3. Social Media’s Role:
   - 51.5% of respondents believed social media influences their purchasing decisions.
   - 31.8% agreed that peer and influencer influence impacts their purchases.
4. FOMO & Financial Habits:
   - 18.2% acknowledged using credit cards or loans due to FOMO.
   - 60.6% agreed that businesses use FOMO tactics to influence spending.
   - 43.9% believed FOMO-driven spending significantly impacts economic trends.

The data demonstrates that while not everyone is affected, a significant portion of respondents (ranging between 24-51%) report increased spending due to FOMO, particularly on impulsive and luxury purchases. Moreover, social media and marketing strategies leveraging FOMO appear to drive consumer behavior. Given these findings, we reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1): FOMO significantly increases impulsive and luxury spending.

Conclusion :

The research identifies that Fear of Missing Out (FOMO) plays a crucial role in consumer spending habits, most notably in impulse and high-end spending. This fear, fueled by marketing strategies and social media, pervades buying habits across age groups but is especially prominent in younger consumers. A high proportion of respondents confess to making impulse purchases because of FOMO, giving in to pressure when surrounded by luxury items possessed by friends, and being swayed by time-limited offers and social media promotions. Some use credit or loans to pay for these expenses, highlighting possible financial risks. The ubiquity of FOMO-spending has repercussions for consumer borrowing, savings patterns, and marketplace trends. Marketers and companies apply this psychological trigger to stimulate sales, but doing so is risky for long-term financial viability and ethical consumerism. The research fails to accept the null hypothesis and accepts the alternative hypothesis, affirming FOMO's wide-ranging impact on indiscriminate and high-end spending. Research in the long term should be conducted to examine the long-term financial impacts of FOMO-based expenditures and how digital marketing influences the experience of consumers.

Suggestions:

1. Enhancing Financial Literacy Programs – Governments, schools, and financial institutionneed to incorporate FOMO-awareness training into financial education Program.
   Teaching consumers, particularly youths, about budgeting, controlling impulses, and the dangers of debt accrual can decrease spending fueled by FOMO.
2. Encouraging Mindful Consumption –
   Consumers must be prompted to implement mindful spending behavior through mechanisms like delayed buying, setting of money objectives, and digital detoxing intervals to reduce impulse purchasing behavior caused by exposure to social media.
3. Ethical Marketing Regulations – Regulatory agencies must create standards to help businesses employ ethical marketing techniques. Advertising transparency, prominent disclosure of influencer collaborations, and constraints on coercive scarcity strategies (e.g., misleading time-limited offers) can save consumers from exploitative FOMO-based marketing.
4. Leveraging Technology for Consumer Awareness – Fintech firms and financial institutions can create AI-based budgeting applications and mobile apps that warn consumers about impulse purchases. Such applications can offer real-time expenditure data and alerts when users make frequent FOMO-induced transactions.
5. Future Research on Long-Term Economic Impact – Additional research would examine the macroeconomic implications of FOMO consumption, especially its influence on savings rates, consumer debt, and market volatility. Policymakers would be able to use these findings to develop strategies that balance economic stimulation with long-term financial behavior.

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IP-Backed Financing for Indian Startups: Unlocking Opportunities and Navigating Challenges

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Abstract: Intellectual Property (IP) has emerged as a valuable asset class, especially for startups seeking innovative financing mechanisms. IP-backed financing, wherein patents, trademarks, and copyrights serve as collateral for securing funds, is gaining traction worldwide. In India, where the startup ecosystem is booming under initiatives like Atmanirbhar Bharat and Startup India, leveraging IP for financial growth presents both opportunities and challenges. This paper explores the potential of IP-backed financing for Indian startups, emphasizing the regulatory landscape, investor perspectives, and challenges such as valuation complexities, lack of awareness, and enforcement issues. The study adopts a mixed-method approach, analyzing case studies and primary data from entrepreneurs and financial institutions. Findings indicate that while IP-backed financing holds promise, structural reforms, legal clarity, and financial sector adaptability are necessary to unlock its full potential. The research concludes with policy recommendations to foster an ecosystem where IP assets can be effectively monetized, thus ensuring sustainable growth for Indian startups.

Keywords: Intellectual Property, IP-Backed Financing, Startups, India, Innovation, Collateral, Funding

1. Introduction

The Indian startup ecosystem has witnessed exponential growth in recent years, driven by advancements in technology, increased access to funding, and strong policy support from the government. Initiatives like Startup India, Atmanirbhar Bharat, and Make in India have played a crucial role in fostering innovation, entrepreneurship, and economic growth. However, despite these efforts, access to capital remains a significant challenge for many startups, especially those that operate in knowledge-intensive sectors. Traditional financing models largely depend on tangible assets, such as real estate and machinery, as collateral for securing loans. This creates a funding gap for asset-light startups, which primarily rely on intangible assets like Intellectual Property (IP).

IP-backed financing presents an alternative funding mechanism that allows startups to leverage their intellectual assets—patents, trademarks, copyrights, and trade secrets—to secure financial support. Globally, countries such as the United States, Japan, and South Korea have successfully implemented frameworks that recognize IP as collateral, enabling startups to raise funds without the need for physical assets. However, in India, IP-backed financing is still at a nascent stage due to regulatory ambiguities, valuation complexities, and a lack of awareness among entrepreneurs and financial institutions.

Intellectual Property (IP) is an essential driver of innovation, competitiveness, and long-term business sustainability. It provides startups with a competitive edge by protecting their innovations and allowing them to monetize their ideas. Patents, for instance, can be licensed or sold, generating revenue streams that can support business growth. Trademarks help build brand identity, increasing consumer trust and market value. Despite these advantages, Indian startups have yet to fully exploit the potential of their IP assets for financial leverage. The primary reason behind this underutilization is the absence of a well-defined ecosystem that facilitates IP-backed lending. There are multiple ways through which Indian startups can leverage IP-backed financing:

- IP Collateralized Loans
- IP Securitization
- IP Sale and Leaseback
- IP Licensing and Royalties
- Venture Debt Financing

2. Objectives

I. To analyze the concept and significance of IP-backed financing in the context of Indian startups.
II. To examine the legal and regulatory framework governing IP-backed financing in India.
III. To identify key challenges faced by startups in leveraging their IP for financing.
IV. To find out suggestions from challenges faced by IP based financing in india.

3. Hypothesis

1. **H1**: IP-backed financing is a viable alternative funding mechanism for Indian startups.
2. **H2**: Lack of awareness and regulatory clarity hinder the adoption of IP-backed financing.
3. **H3**: Investors and financial institutions are hesitant to accept IP as collateral due to valuation and enforcement challenges.

4. Research Methodology

This study employs a mixed-method approach:

- **Secondary Data**: Review of literature, legal documents, industry reports, and case studies from India and global markets.
- **Comparative Analysis**: Evaluating best suggestions from developed economies where IP-backed financing is successfully implemented.

5. Findings:

I. To analyze the significance of IP-backed financing in the context of Indian startups

The significance of IP-Backed Financing:

The startup ecosystem in India has grown significantly, driven by policies such as Startup India, Atmanirbhar Bharat, and Make in India. However, access to funding remains a major hurdle, especially for startups with few tangible assets. Many Indian startups, particularly in technology-intensive sectors, rely on their IP for competitive advantage and business growth. In this context, IP-backed financing provides an alternative to traditional funding methods by allowing startups to raise capital without diluting equity or securing physical collateral.

Startups, especially those in sectors like biotechnology, artificial intelligence, fintech, and software development, rely heavily on their IP assets. Unlike traditional businesses, which possess tangible assets such as land and machinery, these startups derive their value from innovation and proprietary technologies. In such cases, IP-backed financing can serve as a game-changer by offering alternative funding options that reduce dependence on venture capital and private equity. Some key benefits of IP-backed financing for Indian startups include:

- **Access to Capital**: Startups with strong patents, trademarks, or proprietary technologies can secure loans without depending on venture capital or traditional lenders.
- **Reduced Equity Dilution**: Instead of giving up ownership in exchange for investment, startups can leverage their IP to obtain debt financing while retaining control over their company.
- **Encouragement for Innovation**: A well-established IP financing ecosystem incentivizes startups to invest in research and development (R&D), leading to more patents and innovations.
- **Increased Valuation**: IP-backed financing allows startups to unlock the economic value of their intangible assets, leading to higher valuations in the long term.
- **Expansion Opportunities**: With access to capital through IP-backed loans, startups can invest in scaling their operations, entering new markets, or improving their products and services.

II. To examine the legal and regulatory framework governing IP-backed financing in India.

IP-backed financing is still an emerging concept in India, and its legal and regulatory framework is evolving. While intellectual property laws protect and govern IP assets, financial regulations impact their use as collateral. The following are the key legal and regulatory aspects that influence IP-backed financing in India:

1. Intellectual Property Rights (IPR) Laws in India

Intellectual property (IP) laws define ownership, protection, and enforceability of intangible assets, which are crucial for using IP as collateral in financing. The primary IP laws in India include:

A. Patents Act, 1970 (Amended in 2005)

- The Patents Act grants exclusive rights to inventors for 20 years.
- Patents can be licensed or assigned, making them potential collateral for financing.
- Section 68 of the Act mandates that patent assignments must be in writing and registered with the Indian Patent Office to be legally valid.

B. Trademarks Act, 1999

- Protects brand names, logos, and other distinctive signs.
- Allows for assignment, licensing, and mortgaging of trademarks.
- Section 37 allows for the transfer of ownership, making trademarks suitable for securitization.

C. Copyright Act, 1957

- Protects literary, artistic, and creative works, including software.
- Copyrights can be assigned, sold, or licensed, enabling their use as a revenue-generating asset.
- Section 18 allows authors to transfer ownership of copyrights, which can be leveraged in financing.

D. Designs Act, 2000 and Geographical Indications (GI) Act, 1999

- Protect industrial designs and unique regional products.
- Though rarely used in financing, they can be monetized through licensing.

E. Companies Act, 2013

- Section 77 allows companies to create a charge on their assets, including intangible assets, for securing loans.
- While this provides a legal basis for using IP as collateral, lack of enforcement mechanisms limits its effectiveness.

F. The Insolvency and Bankruptcy Code (IBC), 2016

- Recognizes intangible assets as part of a company’s assets during insolvency proceedings.

- Allows lenders to recover debts by selling or monetizing IP assets.

III. To identify key challenges faced by startups in leveraging their IP for financing.

A. Lack of Standardized IP Valuation Methods

One of the most significant barriers to IP-backed financing in India is the absence of a standardized IP valuation framework. Unlike tangible assets such as land or machinery, whose value is easily quantifiable, IP valuation is subjective and varies based on factors like market demand, industry trends, and the competitive landscape.

- Uncertainty in valuation
- Risk perception by lenders
- Lack of specialized valuation experts

B. Limited Recognition of IP as Collateral by Banks

Indian banks and traditional lending institutions prefer physical assets as collateral, such as property, equipment, or inventory. Most banks are unfamiliar with the financial potential of patents, trademarks, or copyrights, making them hesitant to provide loans against these assets.

- Conservative lending practices
- Lack of regulatory clarity
- Absence of risk-mitigation measures

C. Weak Legal and Enforcement Mechanisms for IP Protection

A strong legal framework for IP protection is crucial for lenders to trust IP-backed financing. However, India faces challenges in IP enforcement and dispute resolution, making IP assets riskier for financial transactions.

- Lengthy litigation process
- Risk of infringement
- Lack of fast-track IP courts

D. Absence of a Secondary Market for IP Assets

A well-developed secondary market where IP assets can be traded, licensed, or sold is essential for making IP-backed financing viable. However, in India, the market for buying and selling IP assets is underdeveloped, which discourages lenders from accepting IP as security.

- Difficulty in liquidating IP
- Lack of IP exchanges
- Low awareness among businesses

E. Limited Awareness and Expertise Among Startups

Many Indian startups fail to recognize the full potential of their IP assets due to lack of awareness and inadequate IP management strategies.

- Poor IP registration practices
- Limited knowledge of IP monetization
- Underdeveloped IP portfolio management

F. High Costs of IP Protection and Maintenance

Protecting and maintaining IP assets involves significant financial investment, which many startups find burdensome.

- Expensive patent registration
- Legal fees for enforcement
- Renewal and maintenance costs

IV. To find out suggestions from challenges faced by IP based financing in india.

A. Developing Standardized IP Valuation Frameworks

Current Challenge:

The absence of a standardized method for valuing IP makes banks and investors hesitant to accept it as collateral.Startups struggle to prove the commercial worth of their patents, trademarks, or copyrights.

Solution:

- **Establish Uniform IP Valuation Guidelines**

The Indian government, Reserve Bank of India (RBI), and SEBI should introduce clear valuation norms in collaboration with industry experts, banks, and valuation professionals. Adopt globally accepted valuation models such as:

  - Cost-Based Valuation (based on R&D and filing costs).
  - Market-Based Valuation (comparison with similar IP transactions).
  - Income-Based Valuation (estimated future revenue from IP).

- Create a Centralized IP Valuation Body
- Encourage Third-Party IP Valuation Services

B. Encouraging Banks & NBFCs to Accept IP as Collateral

Current Challenge:

Indian banks are hesitant to accept intangible assets like IP due to their fluctuating value and difficulty in liquidation. The SARFAESI Act, 2002, which allows banks to seize collateral in case of loan defaults, does not explicitly recognize IP as an asset.

Solution:

- Introduce Clear RBI Guidelines for IP-Based Lending
- Expand the Scope of SARFAESI Act
- Incentivize Banks to Offer IP-Backed Loans

C. Strengthening IP Protection and Enforcement

Current Challenge:

- Weak enforcement of IP rights (IPR) reduces the confidence of financial institutions and investors.
- IP disputes take years to resolve due to backlog in courts.
- The risk of IP infringement and piracy affects the commercial value of intellectual property.

Solution:

- Fast-Track IP Dispute Resolution
- Strengthen IP Laws and Implementation
- Increase IP Awareness Among Law Enforcement Agencies

D. Creating a Secondary Market for IP Transactions

Current Challenge:

- Unlike real estate or stocks, IP assets lack a liquid secondary market where they can be easily bought, sold, or traded.
- Lenders struggle to monetize IP assets in case of loan defaults.

Solution:

- Establish a National IP Exchange
- Encourage IP-Based Securitization
- Promote Licensing and Franchising Models

E. Introducing Government-Backed Credit Schemes for IP Financing

Current Challenge:

- Startups face difficulty securing loans due to the high risk associated with IP-backed financing.Most banks are unwilling to lend without collateral guarantees.

Solution:

- Create an IP Credit Guarantee Fund
- Provide Tax Benefits for IP Financing
- Encourage Foreign Investment in IP-Backed Ventures

F. Encouraging Collaboration Between Financial Institutions, Regulators, and Startups

Current Challenge:

Lack of collaboration between banks, startups, regulatory bodies, and investors results in a fragmented approach to IP financing.

Solution:

- Set Up an IP Finance Advisory Council
- Encourage Public-Private Partnerships (PPP) in IP Financing
- Integrate IP Financing into India's Financial System

6. Conclusion

IP-backed financing presents a transformative opportunity for Indian startups, offering an alternative to conventional funding models. However, widespread adoption faces significant hurdles, including valuation complexities, regulatory ambiguities, and investor reluctance. Policymakers, financial institutions, and entrepreneurs must collaborate to establish a robust ecosystem that enables effective monetization of intellectual property. Recommendations include regulatory reforms, financial institution capacity-building, and the creation of IP valuation frameworks to facilitate lending and investment based on IP assets.

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A study of Youth perspectives on purchase of Electric Vehicles and E-mobility

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ABSTRACT
India stands at crucial crossroads in its transition towards sustainable transportation, with electric vehicles (EVs) and e-mobility playing a transformative role in reducing carbon emissions and enhancing energy security. As one of the world's largest automobile markets, India's success in EV adoption has far-reaching implications for global sustainability. While government initiatives such as the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) scheme and state-specific EV policies are driving this shift, the role of young consumers as key influencers in this transition remains under explored. This study examines the attitudes of Indian youth toward EV adoption, considering their environmental consciousness, technological adaptability, and urban-centric lifestyles. While young consumers have the potential to be early adopters, their decisions are shaped by factors such as affordability, infrastructure availability, and government incentives. By analyzing these influences, the research assesses their willingness to embrace EVs and explores strategies to encourage adoption. The findings provide valuable insights for policymakers, automakers, and environmental advocates in aligning EV strategies with the aspirations of India's youth. As the country pursues its ambitious target of 30% EV penetration by 2030, understanding youth perspectives is essential for fostering a sustainable and inclusive e-mobility ecosystem.
Keywords: *Youth perception, Electric Vehicles, E-mobility*

INTRODUCTION

The United Nations, for statistical purposes, defines 'youth', as those persons between the ages of 15 and 24 years, without prejudice to other definitions by Member States. In India, the term 'youth' generally refers to those between the ages of 15 and 29, as reflected in the National Youth Policy, 2014, Government of India.

As one of the world's largest automobile markets, India's success in adopting EVs has significant implications for global sustainability. While government initiatives like the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) scheme and state-specific EV policies aim to accelerate this transition, the role of young consumers in driving this change cannot be overlooked.

Youth perspectives on electric vehicles and e-mobility in India are particularly vital, as this demographic represents a large portion of the population and is often seen as both aspirational and trendsetting. Young Indians, characterized by their increasing environmental awareness, technological adaptability, and urban-centric lifestyles, have the potential to become early adopters of EVs. However, their purchasing decisions are influenced by a unique set of factors, including affordability, infrastructure availability, government incentives, and perceived performance of electric vehicles compared to conventional options.

The transportation sector is a significant contributor to carbon emissions and air pollution, making the transition to sustainable mobility solutions a pressing global priority. Electric vehicles (EVs) have emerged as a promising alternative to traditional internal combustion engine vehicles, offering reduced emissions, lower operating costs, and increased energy efficiency. With Generation Z and Millennials showing a growing interest in environmental sustainability, their attitudes towards EVs play a pivotal role in shaping the future of transportation.

OBJECTIVES

1. To assess the level of awareness and knowledge among youth regarding electric vehicles and sustainable mobility.
2. To identify the factors that influence youth attitudes towards EVs, including environmental concerns, cost considerations, and technological preferences.
3. To explore the barriers hindering the adoption of EVs among young people
4. To study the potential strategies for overcoming these barriers.
5. To propose recommendations for effectively engaging and empowering youth to embrace EVs and sustainable mobility as part of their lifestyle.

LITERATURE REVIEW

1. Mandys, F. (2021), based on findings suggested that in the UK, people who are younger, educated, students, living in the middle/south, married, and to some extent, have higher incomes, are more likely to get electric cars early. People making decisions about policies and marketing should think about this and focus on younger, educated people as potential customers.

2. Kenan Degirmenci and Michael H. Breitner (2017) examined how the environmental effectiveness of EVs stacks up against their cost, worth, and confidence in their range. The study revealed that the environmental impact of electric vehicles is a better indicator than their price or range reliability. Considering the importance of global warming, climate change, and air quality, the transportation industry could significantly reduce greenhouse gas emissions. If electricity comes from renewable sources, EVs are viewed as a hopeful option for transportation in this context.
3. Deepika Pandita, Vimal Bhatt, V. V. Ravi Kumar and Piyush Gotise (2023) suggested essential factors for policymakers and stakeholders to increase the use of electric vehicles in India. These include government policies, financial benefits, quick charging stations, affordability, improved battery capabilities, raising awareness about EVs, and ensuring there's a skilled workforce available.
4. Michael K. Hidrue, George R. Parsons, Willett Kempton, Meryl P. Gardner (2011) The study found that in the US, factors such as youth, education, green lifestyle, expectations of rising gas prices, and easy access to home charging plugs increase the likelihood of purchasing an electric vehicle. Preference for smaller vehicles or consideration of a hybrid for the next purchase also plays a role. People are primarily motivated by fuel savings rather than environmental concerns. Concerns about range anxiety, long charging times, and high prices persist among consumers regarding electric vehicles.
5. Jaiswal, D., Kaushal, V., Kant, R., & Kumar Singh, P. (2021) studied that the intention to adopt EVs is impacted both directly and indirectly by factors like attitude, perceived usefulness, perceived ease of use, and perceived risk, moderated by financial incentives policies. Moreover, the findings suggest that attitude partially mediates the influence of usefulness and ease of use on adoption intention, although it doesn't mediate the relationship between risk and adoption intention.

RESEARCH DESIGN AND METHODOLOGY

It is an exploratory research methodology. Both primary and secondary sources were used to gather the data. Google Forms was used to administer a structured questionnaire to responders in order to gather primary data. The questionnaire was intended to be completed by 204 respondents, and data was gathered using the random sampling approach. The general public in the age group of 15 to 29 years of age, which included students, working adults, etc., made up the sample population. The application of descriptive statistical analysis has yielded findings and conclusions. Additionally, the information was gathered via websites, articles, research journals, and research papers.

DATA ANALYSIS AND INTERPRETATION

1.Demographic Profile

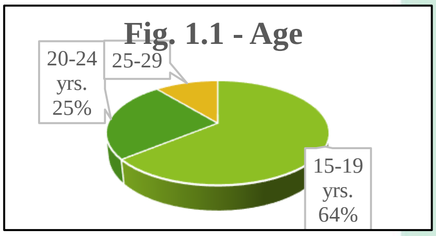


Fig. 1.1 - Age

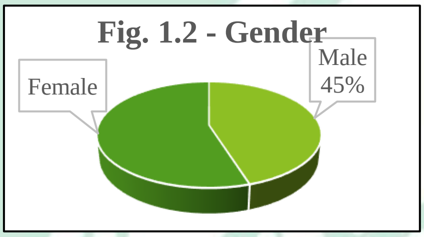


Fig. 1.2 - Gender

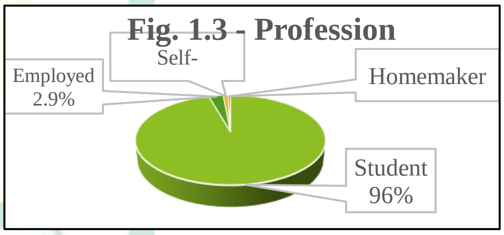


Fig. 1.3 - Profession

The demographic analysis of the survey participants, as illustrated in Figures 1.1 to 1.3, reveals that the majority of respondents are **young students**, primarily aged **15–19 years** (64%), followed by **20–24 years** (25%), and a smaller segment aged **25–29 years** (11%). In terms of gender distribution, **females make up 55%** of the respondents, slightly surpassing **males at 45%,** indicating a relatively balanced gender participation. Professionally, a dominant **96%** of the participants are **students,** while only **2.9%** are employed, **1%** are self-employed, and **0.5%** are homemakers. These findings suggest that the survey results are heavily shaped by the perspectives of a young, predominantly student population, offering valuable insights into youth opinions and awareness.

2. Awareness

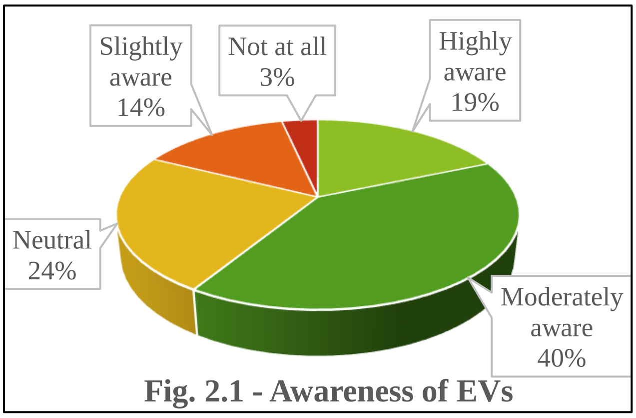


Fig. 2.1 - Awareness of EVs

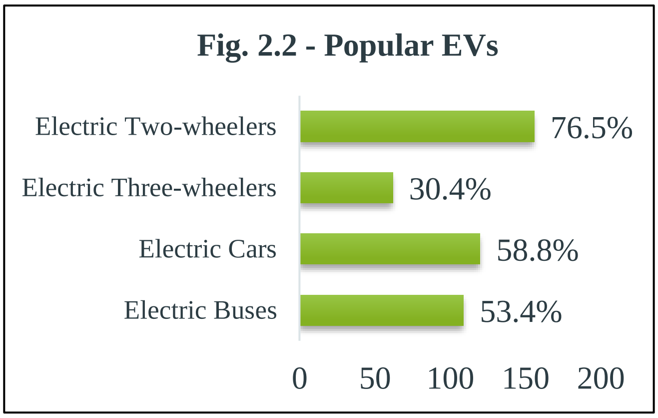


Fig. 2.2 - Popular EVs

3. Vehicle Ownership Patterns

Fig. 3.1 - Ownership of different vehicles

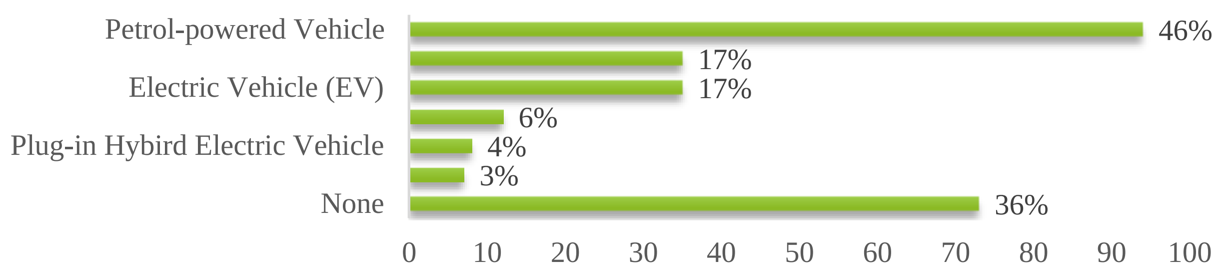


Figure 3.1 illustrates the ownership distribution of different types of vehicles among respondents. A significant 46% reported owning a petrol-powered vehicle, making it the most commonly owned type. Both diesel-powered vehicles and electric vehicles (EVs) are owned by 17% of participants each, suggesting a growing but still limited adoption of EVs. Ownership of hybrid electric vehicles (HEVs) stands at 6%, while plug-in hybrid electric vehicles (PHEVs) and fuel cell electric vehicles are even less common, at 4% and 3% respectively. Notably, 36% of respondents do not own any vehicle, which aligns with the earlier demographic finding that the majority are students, likely contributing to lower overall vehicle ownership. This data reflects a transitional phase in vehicle preferences, with traditional fuel types still dominating but alternative and sustainable options slowly gaining traction.

4. Accelerating change

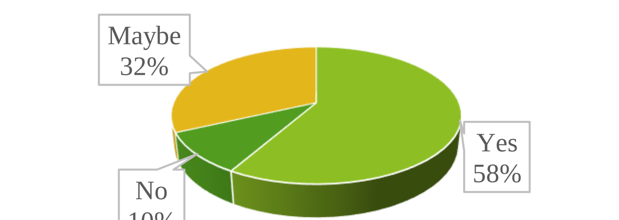


Fig. 4.1 - Contribution of EVs to Environmental Sustainability

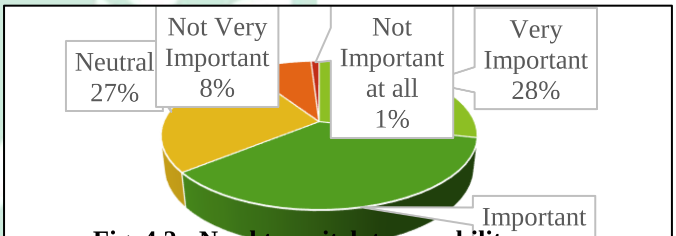


Fig. 4.2 - Need to switch to e-mobility practices

In Figure 4.1, a majority of 58% believe that EVs contribute significantly to environmental sustainability, while 32% responded with "maybe," indicating some uncertainty or lack of awareness. Only 10% disagreed with the statement, suggesting that a generally positive sentiment exists toward the environmental benefits of EVs.
Figure 4.2 shows the perceived importance of switching to e-mobility practices. Here, 36% consider the shift to be important, and 28% view it as very important. Meanwhile, 27% remain neutral and a small portion i.e. 8% and 1%regard it as not very important or not important at all, respectively. These findings highlight a strong inclination among respondents toward recognizing the value and urgency of adopting sustainable mobility solutions.

5. Desire to use EVs

The pie chart in Figure 5.1 illustrates respondents' desire to use electric vehicles (EVs). A significant majority expressed a positive inclination, with 38% agreeing and 22% strongly agreeing to the desire to use EVs. A considerable portion of respondents remained neutral, accounting for 31%, indicating a potential for persuasion through awareness and incentives. Meanwhile, 6% disagreed and 3% strongly disagreed, suggesting a small segment with reservations or resistance towards EV adoption. Overall, the data reveals a strong overall interest in EVs, though outreach and education could help sway the neutral and hesitant groups.

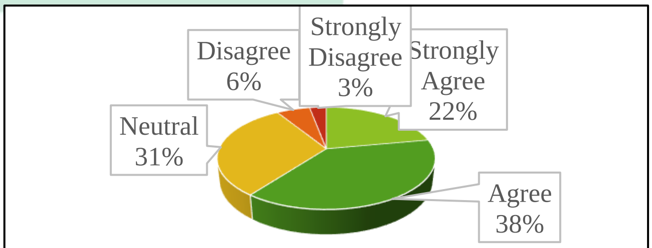
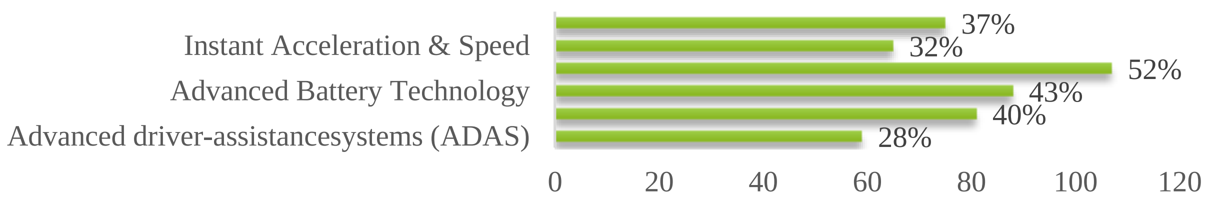


Fig. 5.1 - Desire to use EV

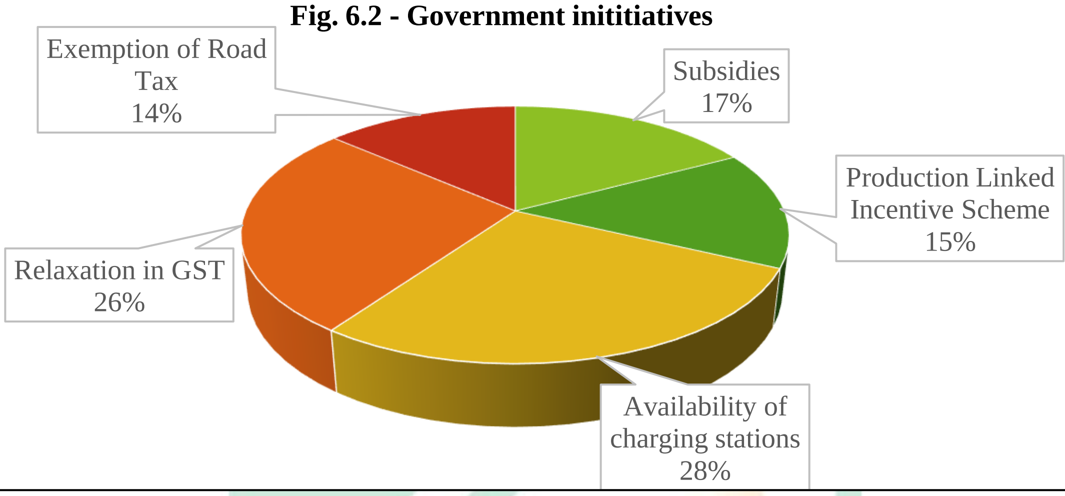
6. Factors influencing purchase of EVs

Fig. 6.1 - Technology-driven features



The data presented in Figures 6.1 and 6.2 highlights the key technological and governmental factors influencing the adoption of electric vehicles (EVs). Among the technology-driven features, fast charging emerged as the most prioritized requirement, selected by 52% of respondents, followed closely by advanced battery technology (43%) and smart connectivity (40%). A longer driving range (37%) and instant acceleration and speed (32%) were also valued, while advanced driver-assistance systems (ADAS) were considered essential by 28%, indicating growing expectations around performance and convenience. In terms of government initiatives, the availability of charging stations (28%) stood out as the most impactful factor encouraging EV adoption, followed by relaxation in GST (26%) and subsidies (17%). Other significant incentives included exemption of road tax (14%) and production-linked incentive schemes (15%), showing that supportive policies and financial relief are important drivers in shifting consumer interest toward e-mobility.

Fig. 6.2 - Government inititiatives



7. Affordability & Infrastructure

The pie charts in Figures 7.1 and 7.2 present insights into consumer perceptions of electric vehicles regarding cost-effectiveness and ease of locating charging stations. In Figure 7.1, a majority of respondents view EVs as cost-effective, with 36% agreeing and 13% strongly agreeing, while 39% remain neutral, suggesting potential for increased acceptance with greater awareness. Only a minority, 9% disagreed and 3% strongly disagreed, indicating limited scepticism.

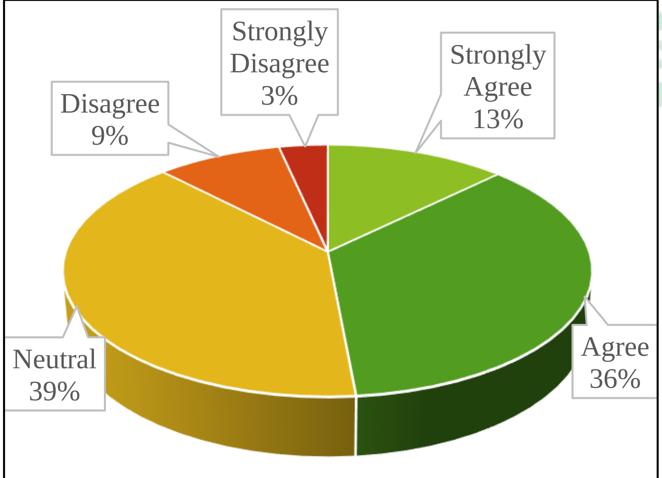


Fig. 7.1 - Cost effectiveness

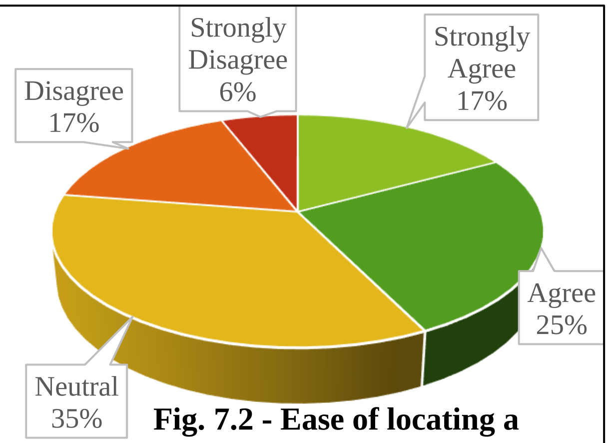


Fig. 7.2 - Ease of locating a charging station

 ISBN No- 978-93-342-5395-5

In Figure 7.2, views on the ease of locating charging stations are more mixed. While 25% agreed and 17% strongly agreed that it is easy to find charging stations, a significant 35% remained neutral and 23% (17% disagree + 6% strongly disagree) expressed dissatisfaction. These findings highlight that although EVs are generally seen as cost-effective, infrastructure challenges such as charging accessibility remain a concern that needs to be addressed to encourage wider EV adoption.

8. Reduction in Range anxiety

Figure 8.1 shows that a strong majority believe EVs help reduce range anxiety, with 43% agreeing and 12% strongly agreeing. However, 35% remained neutral, indicating some lingering uncertainty, while only 10% (8% disagree + 2% strongly disagree) expressed doubt.

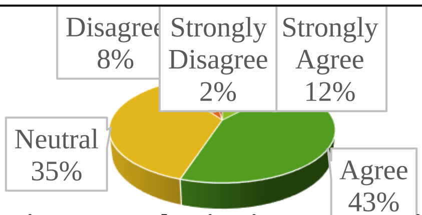
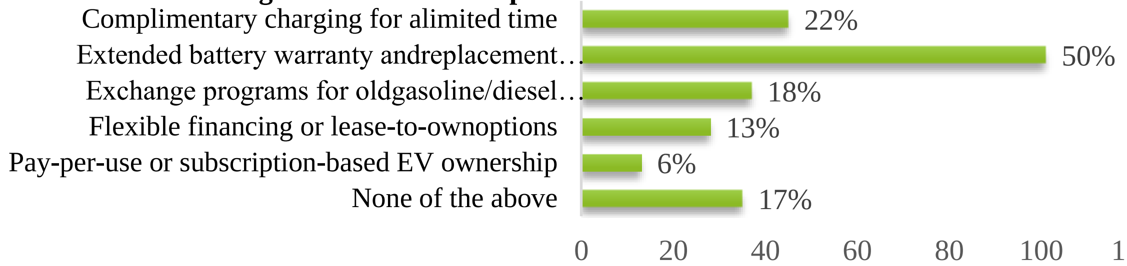


Fig. 8.1 - Reduction in Range Anxiety

9. Consumer Expectations from Manufacturers

Figure 9.1 highlights the top consumer expectations from EV manufacturers. The most prominent demand is extended battery warranty and replacement support, selected by 50% of respondents. Other notable expectations include complimentary charging for a limited time (22%), exchange programs for old gasoline/diesel vehicles (18%), and flexible financing or lease-to-own options (13%). A smaller share (6%) preferred pay-per-use or subscription-based EV ownership, while 17% chose none of the above. These insights emphasize the need for manufacturers to focus on battery reliability and cost-saving incentives to boost consumer adoption and satisfaction.

Fig. 9.1 - Consumer Expectations from Manufacturers



10. EV Purchase Likelihood

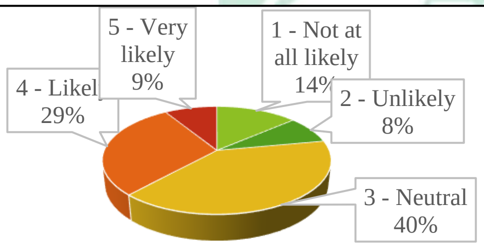


Fig 10.1 - EV Purchase Likelihood

Figure 10.1 illustrates respondents' likelihood of purchasing an electric vehicle (EV). The data reveals that while a promising 38% of participants (29% likely and 9% very likely) show a positive intent toward EV purchase, a significant portion (40%) remain neutral, suggesting a need for more awareness and incentives to sway undecided consumers. On the other hand, 22% (14% not at all likely and 8% unlikely) are hesitant or disinclined toward EV purchase. These insights highlight a growing openness toward EVs but also underscore the importance of addressing concerns and providing clearer value propositions to convert neutral and sceptical consumers into potential buyers.

<u>CONCLUSION</u>

The survey findings provide valuable insights into the evolving perceptions, expectationsand behaviors surrounding electric vehicles (EVs), especially among a predominantly young and student-driven demographic. While traditional fuel-powered vehicles remain the most commonly owned, there is a visible and growing awareness of electric mobility and its environmental benefits. The data reflects a generally favourable attitude toward EV adoption, with many respondents recognizing their sustainability and cost-effectiveness.

However, the study also uncovers areas that require attention. A substantial portion of participants remain neutral or uncertain about critical aspects such as range anxiety, charging infrastructure and affordability, such factors that could significantly influence adoption rates. Respondents emphasized the importance of technological innovations like fast charging, longer battery life, and smart connectivity, as well as supportive government policies including tax reliefs, subsidies, and enhanced charging networks.

Moreover, the expectations from manufacturers, particularly extended battery warranties and financial incentives, highlight a need for user-centric strategies to boost confidence and interest in EVs. While the intent to purchase EVs is promising, the relatively high percentage of neutral responses signals the necessity for more aggressive awareness campaigns, incentive structures, and infrastructural improvements to facilitate a smoother transition toward sustainable mobility.

In essence, the survey paints a picture of a market in transition, where interest and awareness around EVs are rising but still need nurturing through education, innovation, and policy alignment. Addressing these gaps could significantly accelerate the mainstream adoption of electric vehicles in the years to come.

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Disrupting Traditional Learning: AI's Role in Changing Students' Academic Resource Preferences – A Study with Reference to the Mumbai Region

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Abstract:
The rapid advancement of artificial intelligence (AI) technologies has led to a transformation in higher education worldwide. AI tools provide academic support to students anywhere and anytime to enhance their knowledge and skills. However, this rapid transformation has disrupted the traditional teaching and learning environment of Higher Education Institutions (HEIs). This study focuses on understanding the growing inclination towards AI-driven tools over conventional sources such as printed books and institutional libraries of Higher Education Institutions (HEIs) in Mumbai region. The study uses a mixed-methods of research methodology, collecting empirical evidence from undergraduate and post-graduate students using structured questionnaires and secondary data from academic literature. The results show a notable shift in student behavior, with AI technologies being preferred due to their accessibility, immediacy, and tailored learning capabilities.

Key words: Artificial Intelligence in Education, Student Learning Preferences, Traditional Learning Tools

Introduction:
Artificial Intelligence (AI) is one of the latest digital transformations (DT) technological trends the college/university library can use to provide library users with alternative educational services. This study explores the impact of artificial intelligence (AI), particularly learning platforms like ChatGPT, on students' academic experiences, focusing on study habits, academic achievement, social interactions, and emotional growth. By surveying 117 student members through a combination of multiple-choice and open-ended questions, the research employs both qualitative and quantitative methods to analyze the influence of AI in education. The findings reveal a dual-sided impact. While AI enhances academic performance through personalized learning and improved accessibility, it poses significant challenges. Overreliance on AI tools appears to hinder critical facets of student development, including study habits, emotional well-being, social interactions, and critical thinking. The convenience of AI risks fostering passive learning behaviors, reducing interpersonal communication, and promoting emotional and social detachment. This research underscores the need for a balanced approach to AI integration in education. To maximize benefits and mitigate drawbacks, educators and institutions must combine AI's potential with active teacher involvement, emphasizing critical thinking and social engagement. By treating AI as a supportive tool rather than a substitute for human educators, the long-term development of students can remain both positive and holistic.

Review of Literature:
Pisica et al. (2023) conducted a qualitative study to examine Romanian academics' perspectives on the implementation of Artificial Intelligence in higher education. Their findings highlight that AI integration can enhance the teaching–learning process, foster skill development, promote inclusion, and reduce administrative costs. However, they also identified concerns such as ethical dilemmas, data security, psychosocial impacts, and job displacement. The authors further noted that limited discourse exists around the infrastructural and strategic costs of AI implementation, attributed to the nascent stage of digitalization in Romanian higher education institutions.
Cui Y (2025) explored the adoption of AI technologies in academic writing, emphasizing the need to consider both cognitive and emotional factors influencing students' usage intentions. While prior studies have largely focused on perceived usefulness and ease of use, this study integrated the Hedonic Information System Acceptance Model (HISAM) and the Technology Readiness Index (TRI) to reveal the significance of emotional motivations such as perceived enjoyment and technological optimism. Findings from Structural Equation Modeling (SEM) applied to survey data from 148 university students indicate that emotional engagement plays a critical role in AI tool adoption. The study also highlights those negative emotional experiences, although less influential on functionality assessments, still affect overall user intention, suggesting the need for emotionally attuned and user-friendly AI tool designs in academic contexts.

Objectives of the Study:
1. To examine the efficiency of AI tools in providing quicker access to academic information compared to traditional reference books.
2. To analyze patterns of AI tool usage among students for academic support.
3. To examine the extent to which the use of AI tools has influenced students' reliance on library reference books for academic purposes.

 ISBN No- 978-93-342-5395-5

4. To explore students' perceptions of AI tools as potential replacements for traditional library resources in academic research and study.
5. To identify and analyze the challenges faced by students in using AI tools for academic learning and support.

Hypothesis of the Study:

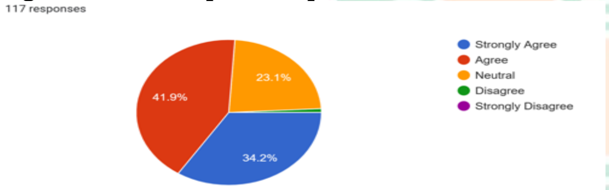
- **Null Hypothesis (H_0):** There is no significant difference in students' understanding of academic concepts when using AI tools compared to traditional books
- **Alternative Hypothesis (H_1):** There is a significant difference in students' understanding of academic concepts when using AI tools compared to traditional books.

Research Methodology:

Universe	Mumbai
Method of data collection	Primary and Secondary
Method of Primary Data Collection	Questionnaire by online sites (Open and close ended)
Method of sampling	Random Sampling / Convenience Sampling
No. of Sample Respondents	117
Method of Data Analysis	Likert's Scale

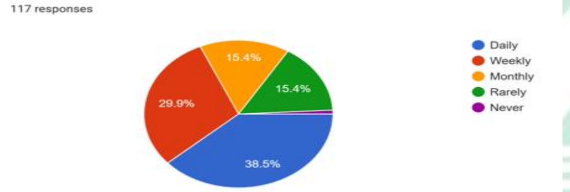
Analysis and Interpretation of Data:

Figure 1: AI tools provide quicker access to academic information than traditional reference books



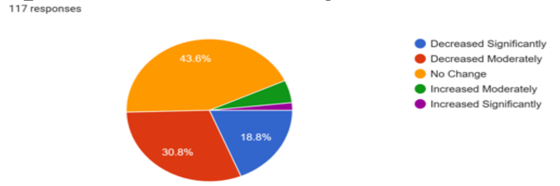
The data indicates a strong preference for AI tools over traditional reference books in terms of providing quicker access to academic information. With 89 out of 117 respondents either strongly agreeing or agreeing, this reflects a significant majority (approximately 76 per cent) perceiving AI tools as more efficient. A neutral response from 27 participants suggests some uncertainty or variability in personal experiences or contexts. Only 1 respondent disagreed, highlighting the minimal presence of contrary views. This trend highlights the growing influence of AI tools in academic environments, likely due to their speed, accessibility, and convenience compared to traditional reference materials.

Figure 2: Frequency of AI Tool Usage for Study-Related Queries



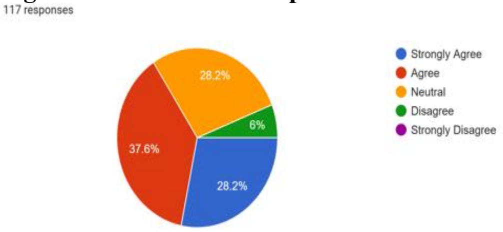
The data reveals varying frequencies of AI tool usage for study-related queries among respondents. More than 38.5 per cent respondents reported using AI tools on a daily basis, indicating a high reliance on these tools for regular academic support. Around 29.9 per cent of respondents who use AI tools weekly, suggesting consistent, though less frequent, engagement. 15.4 per cent respondentsuse AI tools monthly, and another 15.4 per cent respondentsreport rarely using them, indicating occasional or limited usage. Notably, a meagre 0.8 per cent respondent reported never using AI tools for study-related purposes. This distribution suggests that while AI tools are integral to many students' study routines, usage patterns vary based on individual needs and preferences.

Figure 3: Reliance on Library reference books since using AI



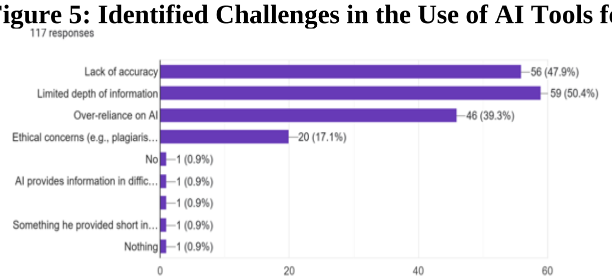
The survey results reveal that a majority of respondents approximately 49.6 per cent have experienced a significant decrease or a moderate decrease in their reliance on library reference books since the introduction of AI tools. Conversely, around 43.6 per cent respondent indicated no change in their reliance on library reference books, suggesting that for some students, traditional resources still hold value alongside AI tools. Additionally 6.8 per cent respondents reported an increase in their reliance, reflecting minimal impact in the opposite direction.

Figure 4: Students' Perception of AI Tools as Replacements for Traditional Library Resources



The survey results indicate that a significant majority of respondents, accounting for **65.81 per cent** (combining Agree and Strongly Agree), perceive that AI-driven study materials are replacing traditional library resources. This suggests a strong consensus among students regarding the transformative impact of AI tools on academic resource utilization. Additionally, **28.21 per cent** of respondents remained neutral, reflecting either uncertainty or mixed experiences regarding the extent of this replacement. Only **5.98 per cent** of respondents disagreed, indicating that opposition to this shift is minimal. These findings highlight the growing influence of AI-driven study materials in academic settings, suggesting a notable shift in students' resource preferences.

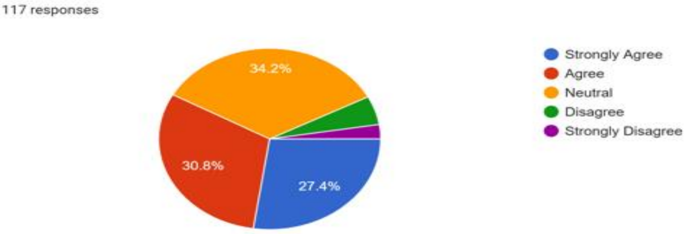
Figure 5: Identified Challenges in the Use of AI Tools for Academic Learning



The use of AI tools for academic purposes presents several challenges, as reflected in the responses collected. The most frequently cited issue was limited depth of information (50.4 per cent), indicating that AI-generated content often lacks the analytical rigor required for academic work. This was followed closely by concerns over lack of accuracy (47.9 per cent), highlighting the potential for misinformation. Over-reliance on AI (39.3 per cent) suggests a growing dependency that may hinder critical thinking and independent learning. Ethical concerns (17.1 per cent), though less reported, emphasize the need for academic integrity in AI usage. Collectively, these findings emphasize the necessity for cautious and informed integration of AI in academic environments.

Hypothesis testing:

Figure 6: AI tools provide a better understanding of academic concepts than traditional books



The data collected indicates a substantial proportion of respondents (58.2 per cent) agreed that AI tools facilitate a better understanding of academic concepts compared to traditional books. This majority supports the hypothesis that **'There is a significant difference in students' understanding of academic concepts when using AI tools compared to traditional books.** A relatively small number of disagreements (7.6 per cent) further strengthens the argument that AI tools positively influence conceptual understanding. This pattern indicates that while a majority of students clearly favor AI tools.

Findings of the Study:

The empirical findings suggest the following key trends:

1. A significant proportion of respondents (60.7 per cent) report regular use of AI-powered academic tools such as ChatGPT, Grammarly, and QuillBot for assignments, exam preparation, and conceptual understanding.
2. Approximately 85 per cent of respondents indicate a marked decrease in library visits, citing digital convenience and quick access to information as major factors.
3. Around 76 per cent of the respondents indicated that their preference for AI tools is motivated by factors such as ease of use, availability of real-time assistance, tailored content, and interactive user interfaces.
4. More than 71 per cent of the respondents preferred the integration of AI-based learning tools into the Higher Educational Institutions (HEIs) curriculum. This reflects a positive attitude toward leveraging AI to enhance academic learning and engagement.

Conclusion:

The study affirms that Artificial Intelligence (AI) has significantly influenced academic resource preferences among students in the Mumbai region, signaling a shift from traditional learning tools to digital alternatives. While AI enhances efficiency, accessibility, and personalized learning, its increasing frequency raises concerns regarding academic integrity and the dilution of conventional pedagogical practices. Therefore, it is essential for academic institutions to proactively develop frameworks that emphasize digital literacy, responsible AI usage, and structured integration into the curriculum. Future research should investigate the long-term implications of AI reliance on students' cognitive development, academic outcomes, and career readiness.

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Digital Transparency and The Right to Information in India: A Critical Study Of E-Governance and Citizen Empowerment

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Abstract:
The Right to Information (RTI) Act, 2005 marked a revolutionary step in Indian democracy by legally empowering citizens to demand transparency and accountability from public authorities. With the rapid integration of digital technologies into governance, the implementation of RTI has seen both opportunities and challenges. This paper explores how digital platforms have enhanced or hindered the execution of RTI in India, examining tools like online RTI portals, e-governance systems, and mobile applications. The paper analyzes the effectiveness of these digital interventions, the gaps in implementation, and the need for further reforms to strengthen democratic participation and transparency.

Keywords:
Right to Information, Digital Governance, Transparency, Accountability, E-Governance, Public Participation, RTI Act 2005, Digital India

Introduction:
The Right to Information (RTI) is a powerful tool for citizens that promotes democratic values and government accountability while reducing secrecy in public administration. By allowing individuals to request information from public authorities, RTI enhances transparency, decreases corruption, and strengthens participatory democracy.
The enactment of the Right to Information Act, 2005 by the Indian Parliament marked a historic moment in Indian democracy. The act superseded the secrecy of the Official Secrets Act of 1923 and guaranteed citizens the right to request information from public authorities. The RTI Act, 2005, applies to all constitutional authorities, including the executive, judiciary, legislature, and government-owned or financed bodies.
The RTI Act, 2005 has greatly enhanced administrative transparency, exposed corruption and improved public service delivery over the past two decades. However, the rise of digital governance has introduced new challenges for its implementation. With the increasing use of the internet, smartphones, and ICT, citizens are interacting primarily with the state through digital platforms. This shift has transformed how information is sought and shared under the RTI Act.
India's flagship initiative, **Digital India**, launched in 2015, aims to create a digitally empowered society. A key goal is to enhance transparency by digitizing government records and services. The **RTI Online Portal** (https://rtionline.gov.in) enables citizens to file online applications, appeal and track responses. Additionally, various states have developed their digital portals, further improving transparency and efficiency.
The digitization of RTI processes has presented challenges, particularly for rural and underserved populations. Many still face issues like lack of internet access, digital illiteracy and language barriers. However, not all public authorities comply to the proactive disclosure requirements of Section 4 of the RTI Act, 2005. Concerns about data privacy, cybersecurity and surveillance may weaken transparency efforts. Citizens might avoid submitting online RTI applications due to fears of retaliation or misuse of personal information. The effectiveness of the online RTI process is further limited by the responsiveness of Public Information Officers (PIOs) and the efficiency of Information Commissions in handling appeals.
This research paper evaluates the link between digital governance and the Right to Information (RTI) in India. It examines whether digitization has improved or impeded citizens' access to information and accountability in public authorities. The paper analyses online RTI portals' functionality, accessibility, effectiveness, and limitations and offers recommendations for enhancing digital transparency inclusively and securely.
This study examines the factors that support and the challenges faced in implementing digital Right to Information (RTI) in India. It highlights that while digital tools can enhance transparency and improve RTI processes, their success depends on political will, administrative reforms, public awareness and safeguarding digital rights.

Objectives:
1. To analyse the role of digital platforms in enhancing the Right to Information in India.
2. To identify the strengths and weaknesses of online RTI mechanisms.
3. To study the integration of RTI with e-governance initiatives.
4. To suggest recommendations for improving digital transparency in RTI processes.

Digital Transparency: Right to Information in India
The Right to Information (RTI) Act, enacted in 2005, gives Indian citizens the legal right to access information from public authorities. It promotes transparency, democracy and ensures government accountability. The Act broadly defines information to include records, documents, emails and data held by public authorities which must proactively publish

information and respond to individual requests within a specified timeframe. Additionally, it established Central and State Information Commissions to adjudicate appeals, ensure compliance and address grievances.
In recent years, the digital transformation of governance has reshaped the implementation and accessibility of RTI. The integration of digital tools has enabled more efficient handling of information requests, reduced paperwork, and increased the convenience for citizens. Online RTI portals, such as the Central Government's official portal (https://rtionline.gov.in), allow citizens to submit RTI applications, pay fees digitally, and track responses in real-time. Several state governments have also adopted similar platforms, creating a more uniform and streamlined approach to transparency. In addition to online portals, mobile RTI applications have further facilitated ease of filing and accessibility, especially among smartphone users. Many ministries and departments now publish annual reports, budgets, tenders, project updates, and public notices online, thereby reducing the need for individual RTI applications.
Digital transparency mechanisms support India's e-governance vision, promoting accountability and citizen participation. The Digital India mission and the Right to Information (RTI) Act enhance transparency through tools like dashboards and open data platforms, bridging the gap between the government and the public.
Despite advancements in the Right to Information (RTI) Act's digital implementation, challenges remain. The digital divide limits access for many in rural and economically weaker areas while language barriers hinder usability. Public awareness is low and issues like delayed responses and non-compliance with mandatory disclosures further weaken effectiveness of the Act.
In conclusion, digitising the Right to Information (RTI) in India enhances transparency and accountability in governance. Success relies on inclusive access, public awareness, and political commitment. Bridging the digital divide and viewing digital transparency as a fundamental right for all citizens is essential to fully realise RTI's potential.

Tables:

Table 1: Growth of RTI Applications Filed Online (2013–2023)

Year	Applications Filed	Online RTI Applications	% Online
2013	8,00,000	1,00,000	12.5%
2016	9,50,000	2,50,000	26.3%
2020	11,00,000	5,00,000	45.4%
2023	12,50,000	8,00,000	64%

Explanation of Table 1:

Table 1 illustrates the increase in the number of RTI applications filed online over a decade, from 2013 to 2023.
In 2013, only 1,00,000 RTI applications were filed online out of a total of 8,00,000, accounting for just **12.5%** of all applications. This indicates that in the initial phase, most citizens were still dependent on physical methods for filing RTI requests.
By 2016, the number of online applications increased to 2,50,000 out of 9,50,000 total applications, raising the percentage to **26.3%**. This marks a significant growth, likely driven by initiatives under the **Digital India mission**, which began in 2015 and aimed to make government services digitally accessible.
In 2020, online RTI applications rose sharply to 5,00,000 out of 11,00,000, pushing the percentage to **45.4%**. This growth can be attributed to wider internet penetration, increasing smartphone usage, and the COVID-19 pandemic, which limited physical access to government offices and encouraged digital interaction.
By 2023, the proportion of online applications reached **64%**, with 8,00,000 out of 12,50,000 total applications being filed digitally. This clearly shows a shift in citizen behavior, with more people relying on online RTI portals for convenience, efficiency, and transparency. It also reflects the success of central and state government efforts to promote e-governance tools.
Overall, the data in this table underscores a positive trend in digital transparency in India. However, it also hints that despite progress, 36% of applications were still filed offline in 2023, suggesting the need to further bridge the **digital divide**, enhance accessibility in rural and remote regions, and promote digital literacy to ensure equitable access to information for all citizens.

Table 2: Status of Online RTI Portals in Indian States

State	Portal Available	Year Launched	User Satisfaction (%)
Maharashtra	Yes	2015	78%
Gujarat	Yes	2017	70%
Bihar	No	-	-
Kerala	Yes	2016	85%

Explanation of Table 2:

Table 2 presents a comparative overview of the status and performance of online RTI (Right to Information) portals in select Indian states—Maharashtra, Gujarat, Bihar, and Kerala. The data highlights the extent of digital integration in the RTI framework at the state level, focusing on the availability of online portals, their launch years, and levels of user satisfaction.

Maharashtra was among the early adopters, launching its online RTI portal in **2015**. With a user satisfaction rate of **78%**, the state demonstrates considerable success in providing digital access to information. This high satisfaction rate reflects the portal's usability, responsiveness of authorities and the extent to which it meets public expectations.
Gujarat followed in **2017**, with a user satisfaction rate of **70%**. While the portal is functional and serving the public, the slightly lower satisfaction compared to Maharashtra may indicate challenges such as technical glitches, delayed responses or limited language support.
Kerala, which launched its online RTI portal in **2016**, has the **highest user satisfaction** at **85%**. This reflects Kerala's consistent performance in e-governance and citizen-centric service delivery. The state has long been recognized for its high literacy levels and public engagement, which may contribute to the portal's success and efficient handling of RTI applications.
In contrast, **Bihar** does **not** have an online RTI portal as of the data reference. This absence highlights a major gap in the state's e-governance efforts. This table illustrates the uneven development of digital RTI mechanisms across Indian states. While some states have made commendable progress in promoting digital transparency, others lag behind.

Table 3: Common Reasons for RTI Application Rejection (2022)

Reason	**% of Rejections**
Information not held	35%
Vague or unclear query	25%
Exemption under Section 8	20%
Incomplete application	12%
Others	8%

Explanation of Table 3:
Table 3 highlights the most frequent reasons cited by public authorities for rejecting RTI applications during the year 2022.
The most common reason for rejection was **"Information not held"**, which accounted for **35%** of the total rejections. This implies that the public authority receiving the RTI request did not possess or maintain the information sought. In many cases, this could result from applicants directing their queries to the wrong department or from authorities failing to maintain proper records.
The second most cited reason, at **25%**, was that the **query was vague or unclear**. This indicates a communication gap between applicants and authorities, where questions may be too broad, ambiguous or improperly framed. Lack of awareness among citizens about how to correctly draft an RTI application often leads to such rejections. It underlines the need for capacity-building initiatives to help applicants formulate precise and actionable queries.
Rejections under **Section 8 of the RTI Act**, which made up **20%**, are also significant. Section 8 provides various exemptions where information may be lawfully denied, such as national security, privacy and cabinet papers. While these exemptions are legitimate, there is often concern that public authorities invoke them too broadly or arbitrarily.
Incomplete applications, comprising **12%** of rejections, reflect procedural issues such as missing documents, non-payment of fees, or lack of applicant identification. This points to the need for improved user interface design on RTI portals.
The remaining **8%** fall under "**Others**," which may include technical errors, duplicate requests, or requests filed with unauthorized entities. Though relatively minor in proportion, these indicate a need for robust back-end systems and better coordination among departments.
Overall, the data in Table 3 reveals that a considerable portion of RTI application rejections could be avoided with better public guidance, administrative training and technical improvements. Addressing these issues would not only reduce the rejection rate but also enhance public trust in the RTI mechanism.

Table 4: Comparison Between Manual and Online RTI Processing Time

Process Mode	**Average Response Time (Days)**	**User Rating (Out of 5)**
Manual	40	3.2
Online	25	4.1

Explanation of Table 4
Table 4 offers a comparative insight into the efficiency and user satisfaction associated with manual versus online modes of filing and processing RTI (Right to Information) applications. The two metrics analysed are **average response time** in days and **user rating out of 5**, which together reflect the performance, speed, and citizen experience of both systems.
In the **manual process**, the **average response time** is **40 days**, with a **user rating of 3.2**. This longer duration is due to physical movement of documents, postal delays, clerical backlogs, and bureaucratic hurdles. The lower user rating also indicates that applicants often experience dissatisfaction due to lack of transparency, difficulty in tracking application status, and communication gaps between departments. These delays can discourage citizens from using RTI.
In contrast, the **online process** shows a significantly improved **average response time of just 25 days**, along with a higher **user rating of 4.1 out of 5**. The improvement in processing time is primarily due to automation, direct routing of applications to the relevant departments, and faster communication through digital platforms.

The higher satisfaction with online RTI reflects the success of **e-governance initiatives** in making transparency more accessible, efficient, and citizen-friendly. However, this data also indirectly emphasizes the existing **digital divide**, as citizens without internet access or digital literacy may still be forced to rely on slower, less efficient manual processes.
Overall, Table 4 underscores the clear advantages of digitizing RTI mechanisms. Reducing response times and improving the applicant's experience are essential for strengthening participatory democracy. While digital RTI systems have proven more effective, ensuring **inclusive access** to these platforms remains a critical goal for policymakers in the pursuit of universal transparency and accountability.

Main Findings:

- There has been a significant rise in the use of digital platforms for filing RTI applications, especially in urban areas.
- States with dedicated online RTI portals show faster and more transparent responses.
- Despite improvements, rural citizens face digital literacy and access barriers.
- There is inconsistency in how different states implement digital RTI systems.
- Awareness campaigns are lacking, especially in regional languages.

Conclusion:

Digital platforms have the potential to transform the RTI regime into a more accessible, efficient, and transparent system. While there are several positive developments through e-governance and online RTI portals, barriers such as lack of awareness, technical inefficiencies, and the digital divide must be addressed. Strengthening digital literacy, improving infrastructure, and standardizing RTI procedures across states can help realize the full promise of digital transparency in India.

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Analytical Study of Copyright Role in Business Transaction

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ABSTRACT

This research examines the critical role of copyright in shaping modern business transactions, highlighting its interdisciplinary implications across legal, economic, and technological landscapes. As a key element of intellectual property, copyright provides creators with exclusive rights over their works, transforming creative outputs into commercial assets that drive innovation, competition, and economic growth. Businesses increasingly rely on copyright-protected content, including software, music, films, and digital media, as integral components of their commercial strategies. The study analyzes the legal frameworks governing copyright in the context of business transactions, focusing on areas such as licensing, content monetization, and cross-border trade. It explores how copyright impacts contractual agreements, facilitates collaborations, and enables businesses to capitalize on creative works. The research addresses pressing challenges posed by the digital age, including digital piracy, the complexities of e-commerce, and the need for robust enforcement mechanisms in an interconnected global economy.

Special attention is given to the balance between protecting creators' rights and ensuring public access to knowledge and culture. This includes examining exceptions such as fair use, compulsory licensing, and the role of copyright in education and research. The study also evaluates the evolving international copyright frameworks, with an emphasis on the harmonization of laws and emerging trends in digital rights management and technological protection measures. Through an analytical approach, the research highlights the importance of adapting copyright laws to the needs of the digital economy, fostering innovation, and ensuring equitable access. It provides recommendations for policymakers and businesses to enhance compliance, protect intellectual property, and navigate the complexities of copyright in a rapidly changing technological and commercial environment. This interdisciplinary inquiry underscores how effective copyright governance can support sustainable business practices and drive global economic and cultural development.

LIST OF ABBREVIATION

ABBREVATION	**FULLFORM**
AC	APPELLATE CASES
AIR	ALL INDIA REPORTER
C.A.	COURT OF APPEAL
CR.L.J	CRIMINAL LAW JOURNAL
DEL	DELHI
DLT	DELHI LAW TODAY
EIPR	EUROPEAN INTELLECTUAL PROPERTY REVIEW
ECLR	EUROPEAN COMPETITION LAW REVIEW
F. CAS	FEDERAL CASES
F.C	FIRST CIRCUIT

INTRODUCTION

Intellectual property (IP) rights are rights awarded to individuals or organizations principally over creative works: Inventions, literary and artistic works, symbols, names, images, and designs used in commerce. They give the creator a right to prevent others from making unauthorized use of their property for a limited period. Intellectual Property is categorized as Industrial Property (commercial innovations), and Artistic and Literary Property (cultural creations). The industrial revolution brought its own set of laws regulating business and commercial activity as also the governance of post-industrial society. Information and Communication Revolution now under way throughout the world, is challenging established institutions and practices in a manner difficult to comprehend. The systems of socio- economic organization and political governance are undergoing unprecedented changes compelling Governments to enact laws relating to management of knowledge in society.

With the unprecedented advent of Computers and the Internet and growing popularity of E-commerce, the Intellectual property rights have gained tremendous significance. However, there is a downside to this trend of increased dependence upon Internet and Information and communication Technologies (ICT) namely the difficulty posed in the detection and protection of Intellectual property infringements in the virtual space.

AIM AND OBJECTIVE OF THE STUDY

The analytical study conducted for the protection of Intellectual property rights in the electronic form would primarily focus on highlighting the requirement of extended protection of laws. The existing framework is not sufficient for the protection of Intellectual Property rights in electronic form. Moreover, in the present era of digitization and information and technology, there is a dearth of unexplored areas in the field of intellectual property rights in cyberspace. The Indian laws have lagged behind as far as international developments in the field are concerned; particularly where disparity in the protection of intellectual property rights of the Indians at International level.

STATEMENT OF THE PROBLEM

With the advent of Information technology and migration of Intellectual Property on Internet; the Intellectual property law has faced problems in protection interface, the research shall highlight dimensions wherein combating mechanism needs reinforcement with respect to Indian scenario. The development in corporate sector demand protection for intellectual property rights in India and international. The provision relating to copy right have extravagant effect by the infringement of such right. The researcher laws majorly affect the business sector in the Indian scenario. with comparisons to international laws.

SIGNIFICANCE OF THE STUDY

The present study would render a platform as to delineate the protection of electronic form of intellectual property rights in the current era of piracy. According to a recent report issued by Business software Alliance, 43% of the software used in the computers worldwide in the year 2014 was pirated, as compared to 41% in the year 2013. Piracy is costing technology companies 50 billion dollars and 3 million jobs per year. Asia accounted for 30% of the world piracy as out of 900 units installed in the year 2009, 530 million were pirated. United States reported to have lowest piracy rate of 20% followed by Japan having 21%. Bangladesh having highest of 67%. It has been further mentioned in the report that 10%-point reduction in piracy would create 435,000 jobs; generate 5.4 billion dollars, contributing 41 billion dollars to regional economies. Therefore, in the current scenario the study holds immense significance as to how Indian legislative endeavors can be made compatible to offer a viable solution to the matrix of law and technology.

REVIEW OF LITERATURE

In reverence to conduct research on the topic as mentioned above, the research has been conducted by reviewing, analyzing, evaluating and critically examining the articles, books, latest amendments, international conventions and JSTOR contributions by eminent jurists. Also, the judgments passed by the Courts in India, USA, U.K., Japan, Australia and EU have been analyzed to propose a regulatory framework for Indian scenario. Particularly, reference can be made to Indian Journal of Intellectual Property law, International Journal of Law and Technology and International Journal of Communications Technology.

A. Dr.Arun Gaikwad (2020). The history, goals, and several IPR kinds are also covered in this paper. Ideas, innovations, and creative expressions on the basis of which the public is ready to confer the status of property are referred to as intellectual property rights (IPR). In order for the inventors or developers of that property to profit commercially from their creative endeavors or reputation, IPR grant them specific exclusive rights.

B. Punam Kumari (2018). Ideas, innovations, and creative expressions on the basis of which there is a public desire to grant the status of property are referred to as intellectual property rights (IPR). In order for the inventors or developers of that property to profit commercially from their creative endeavours or reputation, IPR grant them specific exclusive
rights. There are various forms of intellectual property protection, including trademark, copyright, and patent .

c. Sreeragi R. G.(2021). It must be filed for granting rights in accordance with local laws in order to obtain privilege over innovations. The current study investigates the various types of intellectual property and how long registered inventions will be legally

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RESEARCH QUESTIONS

The present study would make an endeavor to commensurate logical explanations to following research questions:-

1) How far is it possible to extend the legal protection for the copyright in business in the present scenario?
2) Would Indian Laws be flexible enough to maintain the delicate balance of copyright and public interest?
3) What could be the possible steps to be taken in order to ensure uniformity of copyright protection at international level?
4) How far the developments as to copyright laws worldwide can be accommodated in Indian legal framework?
5) To what an extent the liability of legal system is ascertained with respect to copyright violations in companies?

HYPOTHESIS

a) In order to assess the enhancement of protection to Intellectual Property in technology circumventions, we need a richly textured understanding of legal protection that transcends classical academic boundaries and reductionist approaches. Per definition, a reality without needs is neither living nor is it able to be enhanced in any way.

b) The hypothesis thereby proposes that attention to changing parlance and techno legal needs is need of the hour; as balance is required to be struck so that we should not revert back to be the victims of neo colonialism in the analogy of research and development by big companies as assignees of the Intellectual property rights relating to copy right .
c) The present law pertaining to protection of Intellectual Property Rights in India is not sufficient for the protection of Intellectual property in copyright laws in business sector

RESEARCH METHODOLOGY

The present study is a descriptive and analytical study. The **doctrinalresearch** conducted hereinafter has enunciated the systematization and interpretation of the procedural and substantiate provisions of the statutes relating to the Intellectual property Rights. Basically, research means investigation of the new thing and new thing means first-hand experience. Doctrinal research carried out by arranging, ordering and analysis of the legal structure, legal frame work and case laws to search out the new thing by extensive surveying of legal literature. Therefore, an endeavor has been made to solve the legal problem with a new output by closely examining and analyzing the legal doctrine, legal framework and case laws in a logical, systematic and scientific way. The literature for has been collected from the Bare Acts, Books, debates, earlier judicial decisions, various law magazines, International Conventions for the protection of intellectual property, World Intellectual Property Organization Documents, bare provisions of the Multilateral Treaties, Covenants to which India is a party. Moreover, gathering information from the newspapers, related write-ups, articles and of course from the electronic media and Internet.

COPYRIGHTS

The Copyright Act, 1957 (“Copyright Act”), supported by the Copyright Rules, 1958 (“Copyright Rules”), is the governing law for copyright protection in India. Substantial amendments were carried out to the Copyright Act, in early 2012 (“Amendment”). Some of the salient amendments have been discussed in this section. The Copyright Act provides that a copyright subsists in an original literary, dramatic, musical or artistic work, cinematograph films, and sound recordings.27 However, no copyright subsists in a cinematograph film if a substantial part of the film is an infringement of the copyright in any other work or in a sound recording, if in making the sound recording of a literary, dramatic or musical work, copyright in such work is infringed.28 A computer programme is treated as a “literary work” and is protected as such.

REGISTRATION OF COPYRIGHT

Under Indian law, registration is not a prerequisite for acquiring a copyright in a work. A copyright in a work is created when the work is created and given a material form, provided it is original. The Copyright Act provides for a copyright registration procedure. However, unlike the U.S. law, the Indian law registration does not confer any special rights or privileges with respect to the registered copyrighted work.

RIGHTS OF COPYRIGHT HOLDER

A copyright grants protection to the creator and his representatives for the works and prevents such works from being copied or reproduced without his/their consent. The creator of a work can prohibits or authorizes anyone to:

- reproduce the work in any form, such as print, sound ,video, etc.;
- use the work for a public performance, such as a play or a musical work;
- Make copies/recordings of the work, such as via compact discs, cassettes, etc.
- broadcast it in various forms; or

translate the same to other languages

TERM OF COPYRIGHT

In most cases, the **term of copyright** in India is the lifetime of the author plus 60 years. Section 17 of the Copyright Act defines the **first ownership** of a work as follows:

1. **Literary, Dramatic, or Artistic Works**: If created during employment or under a contract for publication in a newspaper magazine, or similar periodical, the copyright vests with the publication's proprietor for publishing purposes. For all other uses, it remains with the author unless otherwise agreed.[32]
2. **Photographs, Paintings, or Portraits**: If created for purposes other than publication, the copyright belongs to the person commissioning the work unless otherwise agreed.
3. **Cinematograph Films**: The producer, in the absence of a contrary contract, owns the copyright as the party commissioning the work for valuable consideration.
4. **Work Created During Employment**: For works not related to publications or films, the employer is the first owner unless otherwise agreed.

INFRINGEMENT OF A COPYRIGHT

A copyright is infringed if a person without an appropriate license does anything that the owner of the copyright has an exclusive right to do. However, there are certain exceptions to the above rule (e.g., fair dealing). The Copyright Act provides for both civil and criminal remedies for copyright infringement.

CONCLUSION

The act of piracy has evolved significantly from its traditional form of violent theft on the high seas to encompass modern-day intellectual property theft. This shift, driven by advancements in digital technology and the internet, has created significant challenges for copyright laws worldwide. Intellectual property theft now includes the unauthorized use of trade secrets, copyrighted materials like films and music, and software, often facilitated by lax laws and enforcement challenges in various jurisdictions.

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Role Of Digital Financial Literacy Amongst Co-Operative Bank's Customers in Navi Mumbai

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Abstract-
The idea of Digital Financial Literacy is complex, akin to both digital literacy and financial literacy. Financial literacy refers to the skills, knowledge, and behaviors that empower an individual to make well-informed choices about money. The terms financial literacy, financial education, and financial knowledge are often used interchangeably. Individuals lacking financial sophistication struggle with financial planning due to limited financial understanding.
In cooperatives, financial literacy plays a crucial role in areas such as budgeting, saving, investing, and interpreting financial statements. When cooperative members possess a strong grasp of financial principles, they are better equipped to make decisions about the cooperative's fiscal health and future. This understanding can also enhance the cooperative's growth and stability, as members will know how to effectively contribute to the financial success of their cooperative banks.
Digital Financial Literacy involves having the knowledge and skills to use digital devices for financial transactions, reflecting a person's foundational literacy and their proficiency with technology.
Digital Banking offers the convenience of conducting all traditional banking activities at any time, day or night, without needing to visit a bank branch. You can manage your banking needs using a laptop, tablet, or smartphone.
This study intends to identify, measure, and validate the factors influencing Digital Financial Literacy (DFL) among customers of cooperative banks who utilize Digital Financial Services in Navi Mumbai.

Keywords
Financial Literacy, Digital Banking, Co-operative Bank.

I. Introduction–

Financial literacy in the context of co-operative banks involves equipping members with the knowledge necessary to make informed financial choices. It empowers them to make sound financial decisions and manage their resources effectively.
The Reserve Bank of India (RBI) has focused its financial literacy efforts around the theme, "Make a Right Start, Become Financially Smart," aiming to foster responsible financial habits from a young age. Their well-known campaign, 'RBI Kehta Hai,' plays an active role in spreading awareness about banking, finance, and consumer rights through various media platforms. Additionally, the RBI has partnered with banks to set up block-level centers, ensuring that local communities receive financial counseling and guidance.
In July 2015, the Indian government launched the 'Digital India' initiative, aimed at enhancing online infrastructure and increasing internet access for citizens. Key components of the 'Digital India' mission include initiatives such as Aadhaar, DigiLocker, MyGov, BharatNet, Smart Cities, Common Service Centers (CSCs), digitization of post offices, universal mobile access, public Wi-Fi hotspots, India Stack, and the Pradhan Mantri Gramin Digital eSaksharta Abhiyaan (PMGDISHA), as well as e-health and e-education initiatives. The overarching aim is to deliver financial education messages to the general public, enabling them to make informed financial decisions.
In India, a variety of digital banking services and platforms cater to the diverse financial needs of customers. Some common digital banking offerings include the Unified Payment Interface (UPI), Bharat Interface for Money (BHIM), Bharat Quick Response (QR) code, National Automated Clearing House (NACH), Rupay cards, National Electronic Toll Collection, and Aadhaar Enabled Payment Services (AePS). These services are instrumental in enhancing the financial landscape for consumers across the country.
In this context, it's evident from the statement that "Financial literacy and education are vital for financial inclusion, inclusive growth, and sustainable prosperity." The OECD (Organization for Economic Co-operation and Development) describes financial literacy as the process through which consumers and investors enhance their understanding of financial products, concepts, and risks. Through information, training, and unbiased advice, they build the skills and confidence necessary to recognize financial risks and opportunities, make informed decisions, seek assistance when needed, and take meaningful actions to improve their financial well-being.
The initiative known as Digital India aims to leverage technology as a tool for social and economic empowerment for all citizens. Within cooperative banks, the primary goal of financial literacy for members and clients is to thoroughly grasp financial concepts, such as transparency in practices, adherence to financial regulations, limited access to technology, and diverse levels of financial interest. This also includes effective money management, sound financial decision-making, and ultimately achieving financial stability. Enhancing financial literacy will contribute positively not only to the individuals involved but also to the banks themselves.

Digital banking has gained significant traction for its convenience and accessibility, enabling users to perform a variety of banking services from virtually anywhere with internet access. This discussion will delve into the different types of digital banking available in India, along with their respective advantages and disadvantages. While digital financial services present numerous opportunities for consumers—such as personalized products, quicker transactions, and enhanced convenience—they also come with their own set of challenges.

II. Statement of the study -

India faces an urgent necessity for inclusive growth, which is key to alleviating poverty across the nation. To achieve this goal, it's vital to promote financial education within society.

Digital financial literacy is multi-faceted, extending beyond basic knowledge and skills to utilize that knowledge effectively. We believe that it includes several critical components: understanding various digital financial products and services, recognizing the risks involved, mastering risk management strategies, and being informed about consumer rights and grievance redressal processes. The foundation of digital financial literacy lies in familiarity with digital financial offerings available via the internet and mobile platforms. It's not just about knowing these services exist; individuals must also be equipped to evaluate the pros and cons of different digital financial services (DFS).

This understanding is essential for making informed choices, whether for personal finances or business ventures. Cooperative banks have taken initiatives to educate their customers about financial concepts. They provide guidance on credit and debit management, explain Know Your Customer (KYC) norms, and introduce customers to no-frills accounts and mobile banking, thereby fostering broader economic participation.

However, it's important to note that there has been a lack of comprehensive studies on this topic in recent years.

III. Objectives -

- Tounderstand the concept of digital financial literacy amongst co-operative bank customers.
- To study the digital financial Literacy awareness amongst co-operative bank customers in Navi Mumbai.
- Tostudy the technology adoption mindset and awareness of customers of co-operative Banks.
- To study the usage of digital banking in study area.
- To study the mode of digital payments used by the customers of co-operative bank.

IV. Research methodology –

The empirical research is based on primary and secondary data. The primary data is collected with the help of structured questionnaire and the secondary data is collected from bulletin, journals, Annual Reports, and various internet websites.

V. Sampling techniques –

The size of the sample is 52 respondents. Simple random sampling method was used to select the sample. Respondents were given free hand to give their opinions on the research topic. All the respondents were from Navi Mumbai.

VI. Hypothesis–

Ho – There is no significant impact of financial literacy in awareness among customers.

H1 – There is significant impact of financial literacy in in awareness among customers.

VII. Limitation of the study -

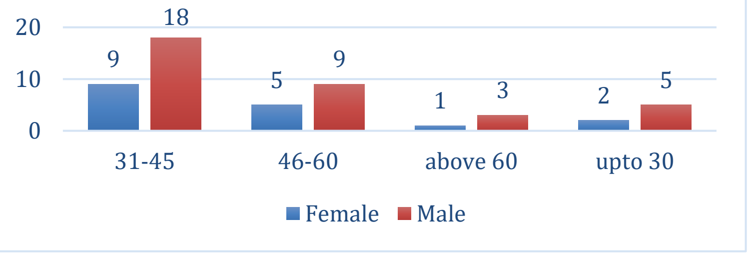
The size of the sample is 52. The study is conducted with lots of constraints like limited sample size. The selected area in Panvel, New Mumbai, for the period 2025, may not represent the entire universe of co-operative banking sector. A lack of understanding of financial services and its basics leads to a perpetual cycle of poor financial decisions.

VIII. Observations and findings from the study –

The study analyzed 52 respondents, providing insights into their age, gender, and occupations, as well as their experiences with bank accounts at co-operative banks in Navi Mumbai. It explores the respondents' perspectives on various aspects of digital financial literacy and their opinions on utilizing digital banking services.

Table and Figure no. 1. – Respondents as per their Age (in years)

Age	Female	Male	Total
31-45	9	18	27
46-60	5	9	14
above 60	1	3	4
upto 30	2	5	7
Total	**17**	**35**	**52**



Source – Primary data

Interpretation – The table and figure no. 1 says that the distribution of respondents by Age and Gender. Among the 52 respondents, majority (18) male respondents as well as female (9) respondents belongs to the age group of 31-45 years (51.92%).

Table and Figure no. 2. – Respondents using digital banking by Occupation and Age (in years)

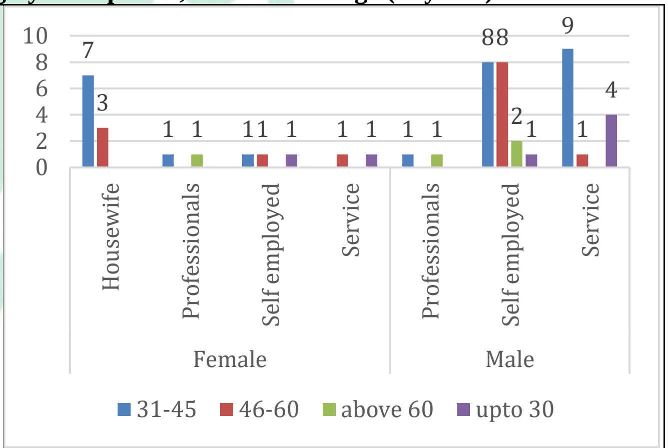
Age	Female	Male
Housewife	10	
Professionals	2	2
Self employed	3	19
Service	2	14
Total	**17**	**35**

Source – Primary data

Interpretation – The table and figure no. 2 says that the distribution of respondents by Occupation and Gender. Among the 52 respondents, (19) respondents from male and (3) respondents from female belongs to self-employed category followed by (16) from service category. It is concluded that maximum (42.30%) respondents are from self-employed category.

Table and Figure no. 3. – Respondents using digital banking by Occupation, Gender and Age (in years)

Age	Female				Male		
	House wife	**Professionals**	**Self employed**	**Service**	**Professionals**	**Self employed**	**Service**
31-45	7	1	1		1	8	9
46-60	3		1	1		8	1
above 60		1			1	2	
upto 30			1	1		1	4
Total	**10**	**2**	**3**	**2**	**2**	**19**	**14**

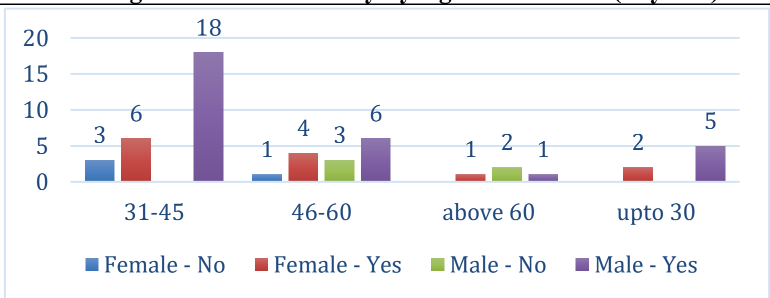


Source – Primary data

Interpretation – The table and figure no. 3exhibits that the distribution of respondents by Occupation, Age and Gender. Among the 52 respondents, majority (9) male respondents from service category well as female (7) respondents from housewife category belongs to the age group of 31-45 years (30.76%). It is also observed majority (19) male respondents belongs to self-employed category followed by (10) female respondents belongs to housewife category (55.76%).

Table and Figure no. 4. – Respondent's awareness about digital financial literacy by Age and Gender (in years)

	Female		Male		Total
Age	**No**	**Yes**	**No**	**Yes**	
31-45	3	6		18	27
46-60	1	4	3	6	14
above 60		1	2	1	4
upto 30		2		5	7
Total	**4**	**13**	**5**	**30**	**52**

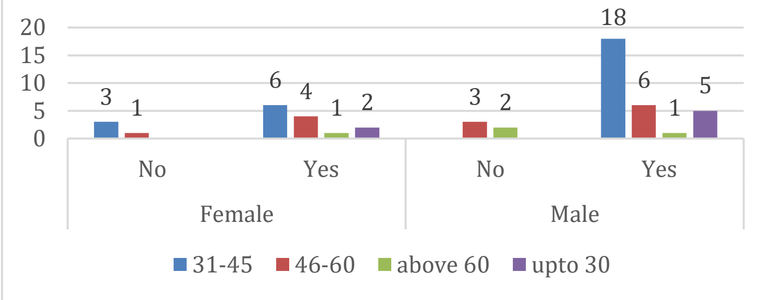


Source – Primary data

Interpretation – The table and figure no. 4illustrates the respondent's awareness about digital banking. From the survey it has been found that among 52 respondents, (43) respondents (82.69%) are aware about digital banking with co-op. banks whereas remaining (9) respondents are unaware (or not using) about digital banking in the study area (17.31%).

Table and Figure no. 5. – Respondents using digital banking by Gender and Age (in years)

Age	Female		Male	
	No	Yes	No	Yes
31-45	3	6		18
46-60	1	4	3	6
above 60		1	2	1
upto 30		2		5
Total	**4**	**13**	**5**	**30**

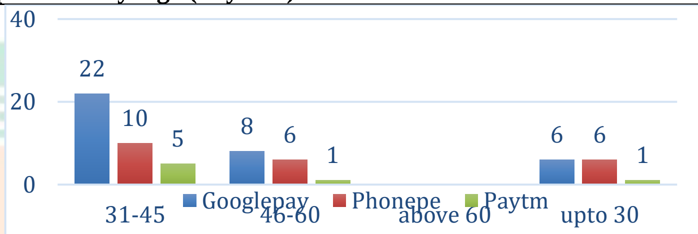


Source – Primary data

Interpretation – The table and figure no. 5exhibits respondents using digital banking services by Age and Gender. Among the 52 respondents, majority (18) male respondents as well as female (6) respondents are using various digital banking services belongs to the age group of 31-45 years followed by age group of 46-60 years category. It is concluded that maximum (24) respondents are from age group of 31-45 years category (46.15%).

Table and Figure no. 6. – Respondents using digital platform by Age (in years)

Age	Googlepay	Phonepe	Paytm
31-45	22	10	5
46-60	8	6	1
above 60			
upto 30	6	6	1

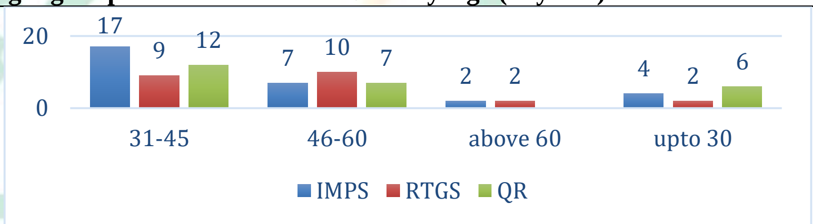


Source – Primary data

Interpretation – The table and figure no. 6illustrates that respondents using digital banking platform by Age. Above data is not absolute. As the choices were given to customers more than one and customers prefer to use multiple options here. Among the 52 respondents, majority (36) respondents are using Googlepay followed by (22) respondents using Phonepe and (7) respondents using Paytm. It is observed that majority (37) respondents using all three platform of digital banking belong to age group of 31-45 years category followed by (15) respondents belongs to age group of 46-60 years category. It is concluded that maximum (36) respondents prefer Googlepay as their primary digital platform in study area (69.23%).

Table and Figure no. 7. Respondents using digital platform to transfer funds by Age (in years)

Age	IMPS	RTGS	QR
31-45	17	9	12
46-60	7	10	7
above 60	2	2	
upto 30	4	2	6

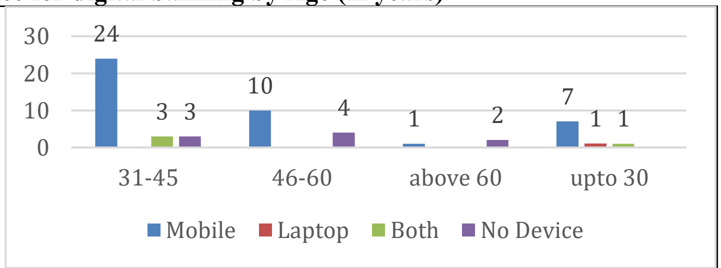


Source – Primary data

Interpretation – The table and figure no. 7depicts the respondent's preference to use digital banking services to transfer funds by Age. Above data is not absolute. As the choices were given to customers more than one and customers prefer to use multiple options here. Among the 52 respondents, majority (30) respondents prefer IMPS followed by (25) respondents prefer QR system and (23) respondents use RTGS/NEFT. It is observed that majority (38) respondents using all three platform to transfer funds belongs to age group of 31-45 years category followed by (24) respondents belongs to age group of 46-60 years category. It is concluded that maximum (30) respondents prefer IMPS system as their primary digital platform of fund transfer in study area (57.69%).

Table and Figure no. 8. – Respondent's prime device for digital banking by Age (in years)

Age	Mobile	Laptop	Both	No Device
31-45	24		3	3
46-60	10			4
above 60	1			2
upto 30	7	1	1	
Total	**42**	**1**		**9**

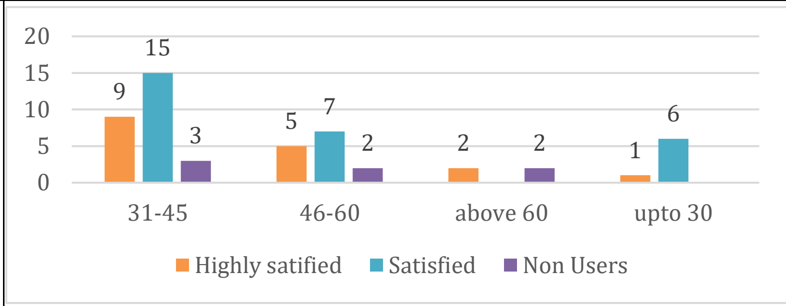


Source – Primary data

Interpretation – The table and figure no.8shows that the respondent's prime device to use digital banking by Age. Among the 52 respondents, majority (42) respondents using Mobile as their primary device to use digital banking followed by (1) respondents using Laptop and (4) respondents using both devices for digital banking services. Remaining (9) respondents are not using any kind of devices for digital banking in survey. It is concluded that maximum (80.76%) respondents prefer Mobile as primary device for digital banking system in study area.

Table and Figure no. 9. – Respondent's experience about digital financial literacy by Age (in years)

Age	Highly satisfied	Satisfied	Non Users
31-45	9	15	3
46-60	5	7	2
above 60	2		2
upto 30	1	6	
Total	**17**	**28**	**7**



Source – Primary data

Interpretation – The table and figure no. 9shows respondent's opinion about experience of digital banking services by Age. Among the 52 respondents of all age groups, majority (28) respondents expressed satisfied approach in using digital banking platform services followed by (17) respondents belongs to highly satisfied category. Remaining (7) respondents are non-users of digital banking. It is observed from the study that maximum (53.84%) respondents are satisfied with digital banking services. It is also underlined that (32.69%) respondents are also found highly satisfied users of digital banking services in survey.

IX. Conclusions –

This study aims to measure cooperative banks' perceptions of digital financial capabilities among clients. Digital financial capabilities are a prerequisite for effective use of digital financial services. The future of cooperative banking lies in education. For cooperative banks, promoting financial capacity is an investment in both client relationships and the long-term prosperity of the local governments they serve. The followings are the findings from the study-

- Overall, out of 52 respondents, 43 respondents (82.69%), said that they are aware about digital banking literacy and using digital baking services.
- It is assumed that majority (71.15%) respondents from the age group of 31-45 years are using maximum available digital banking platforms like googlepay, phonepe, paytm.
- It is observed from the survey, that almost (80.76%) respondents are using their Mobile phone for fast and quick digital banking services.
- Majority of the respondents who prefer digital baking services belongs to the age group of 31-45 years in the selected study.
- It is observed from the survey, all the age group respondents were of the opinions that digital banking services are easy to operate and useful to save time. They are found highly satisfied with survey conducted.

It is concluded that the digital financial literacy have reached the unreached population through co-operative banks in Navi Mumbai.

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Astrology and Consumer Behaviour: The Effect on Clothing Colour Choices While Purchasing in Palghar District, Maharashtra

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Abstract
This study examines the influence of astrological beliefs on apparel colour choices among consumers in Palghar District, Maharashtra, India. Based on a survey of 50 respondents aged 18-40, primarily students and salaried professionals, the research assesses the extent to which astrology shapes preferences for lucky colours, as derived from zodiac signs, birth charts, and horoscopes. Using a Likert scale (1 = Strongly Agree to 5 = Strongly Disagree), data were analyzed with descriptive statistics and chi-square tests. Results reveal that 48% of respondents strongly agree or agree that astrology influences their colour choices, with significant correlations ($p < 0.05$) between astrological beliefs and apparel preferences. The findings highlight astrology's role in consumer behaviour within a culturally rich Indian context, offering implications for apparel marketing strategies.
Keywords: Astrology and Consumer Behaviour, Apparel Colour Preferences, Zodiac Signs and Colour Selection, Horoscope-Based Colour Choices, Cultural Influence on Clothing Colours.

1. Introduction

Astrology, deeply embedded in Indian culture, influences various aspects of life, including personal decisions and consumer preferences. In Palghar District, a semi-urban region in Maharashtra, anecdotal evidence suggests that individuals consult astrological principles—such as zodiac signs and horoscopes—to select apparel colours believed to enhance luck, positivity, or confidence. Despite its prevalence, empirical research on astrology's impact on consumer behaviour, particularly apparel choices, remains scarce. This study investigates whether and how astrological beliefs shape colour preferences among Palghar residents, focusing on the interplay between tradition and modern consumption patterns. The objectives are to: (1) measure the prevalence of astrology-based colour preferences, (2) identify key influencing factors (e.g., horoscopes, birth charts), and (3) assess statistical significance in these preferences. This research contributes to understanding cultural drivers in consumer behaviour, with potential applications in targeted marketing.

2. Review of Literature

Previous studies have explored astrology's role in consumer behaviour, though primarily in Western contexts. Belk (1975) noted that cultural beliefs influence purchasing decisions, while Sharma (2018) highlighted astrology's prominence in Indian lifestyle choices, including fashion. In India, colours hold symbolic value—red for prosperity, black for negativity—often tied to astrological recommendations (Patel, 2021). Research on apparel preferences indicates that psychological factors, such as confidence and identity, drive colour choices (Kumar & Singh, 2020), yet few studies connect these to astrology. A gap exists in region-specific analyses, particularly in semi-urban areas like Palghar, where traditional beliefs coexist with modern influences. This study builds on these foundations, hypothesizing that astrological beliefs significantly affect apparel colour preferences in Palghar District.

3. Objective

1. To analyse the prevalence of astrology-based clothing colour preferences among consumers in Palghar District and determine the extent to which astrological beliefs influence their purchasing decisions.
2. To identify key astrological factors (such as zodiac signs, horoscopes, and birth charts) that shape consumer preferences for specific clothing colours and assess their significance in influencing purchase behaviour.
3. To evaluate the statistical relationship between astrological beliefs and clothing colour choices using chi-square tests and descriptive analysis, providing insights into cultural influences on consumer behaviour.

3. Research Methodology

For the study primary as well as secondary data is collected. This study employed a quantitative research approach using a Google form questioners and secondary data is collected through different articles books, thesis and by use of internet. The study included 50 residents of Palghar District, aged 18-40 years, with 42 students, 6 salaried individuals, and 2 professionals. The questionnaire had 10 multiple-choice questions using a Likert scale (1 = Strongly Agree to 5 = Strongly Disagree) to understand how astrology influences clothing colour choices.

Research Gap

While several studies have explored the psychological and cultural factors influencing consumer behaviour, limited research has specifically examined the impact of astrological beliefs on clothing colour choices. Existing literature primarily focuses on Western perspectives, leaving a gap in understanding astrology-driven consumer preferences in the

Indian context. Although astrology plays a significant role in shaping lifestyle decisions in India, there is a lack of empirical studies analysing its direct influence on clothing choices, particularly in semi-urban areas like Palghar District. Additionally, previous studies have broadly discussed colour symbolism in Indian culture but have not statistically examined whether consumers consciously follow astrological colour recommendations while shopping. This study attempts to bridge this gap by analysing consumer perceptions using survey-based data and statistical tools to establish patterns. Furthermore, the influence of specific astrological factors, such as zodiac signs and horoscopes, on clothing colour preferences remains underexplored. The findings will contribute to a deeper understanding of cultural influences on consumer behaviour, with practical implications for marketing and retail strategies.

Scope of the Study

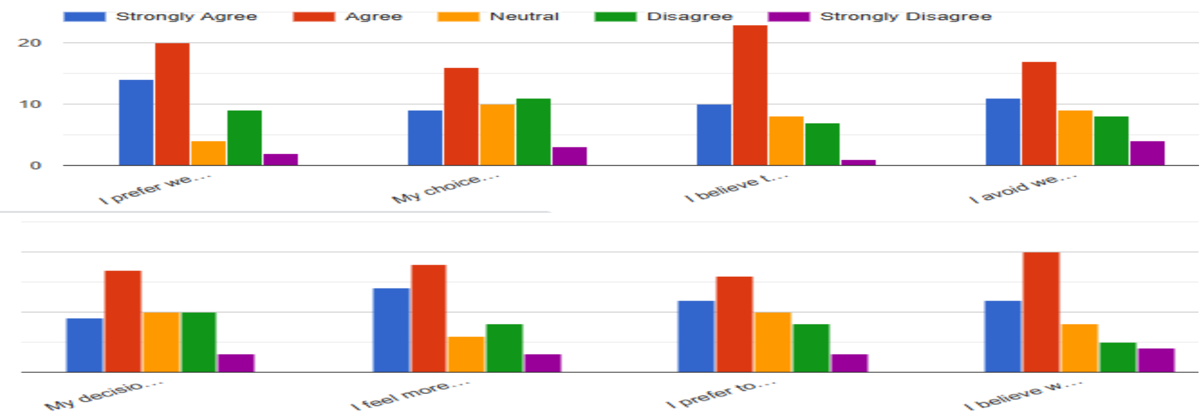
1. **Geographical Focus** – The study is conducted in **Palghar District, Maharashtra**, analysing consumer preferences related to clothing colour choices influenced by astrology in a semi-urban Indian setting.
2. **Target Audience** – The research focuses on individuals aged **18-40 years**, including students, salaried employees, and professionals, to understand how different consumer segments perceive astrological influences.
3. **Astrological Influence** – The study examines the role of **zodiac signs, horoscopes, and birth charts** in shaping consumer preferences for specific clothing colours based on beliefs in luck, positivity, and personal well-being.
4. **Methodology** – A **quantitative research approach** is used, with data collected through structured questionnaires via Google Forms. Responses are analysed using **descriptive statistics and chi-square tests** to determine significant correlations.
5. **Practical Implications** – The findings provide insights for **marketers, retailers, and apparel brands**, helping them develop strategies such as astrology-based promotions and personalized recommendations for consumers who follow astrological beliefs.

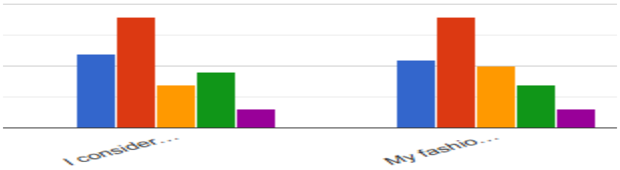
Limitations of the Study

1. **Small Sample Size** – The study is based on only **50 respondents**, which may not fully represent the diverse consumer population of Palghar District.
2. **Limited Demographics** – The research focuses primarily on **students and salaried professionals**, excluding other groups like homemakers and business owners who may have different perspectives.
3. **Self-Reported Data** – The responses are based on **individual perceptions**, which may be influenced by personal biases or social desirability rather than actual purchasing behaviour.
4. **Regional Scope** – The findings are **specific to Palghar District**, limiting their applicability to other regions with different cultural and consumer dynamics.
5. **Lack of Longitudinal Analysis** – The study captures **consumer preferences at a single point in time**, without tracking how these beliefs and behaviours change over time.

Finding

1) I prefer wearing apparel colours that are considered lucky according to my astrological sign.
2) My choice of clothing colour is influenced by daily, weekly, or monthly horoscopes.
3) I believe that wearing certain colours enhances my luck or positivity as suggested by astrology.
4) I avoid wearing colours that are deemed unlucky for my zodiac sign or birth chart.
5) My decision to purchase specific colour apparel is influenced by recommendations from astrologers.
6) I feel more confident when wearing colours that align with my astrological beliefs.
7) I prefer to buy apparel in colours recommended based on my birth date or zodiac sign.
8) I believe wearing the right colours, as per astrology, can positively affect my personal and professional life.
9) I consider astrology-based colour recommendations while shopping for important occasions.
10) My fashion choices are significantly influenced by my astrological beliefs.





The survey yielded diverse responses. Across all 10 questions, 48% of respondents (24/50) strongly agreed or agreed that astrology influences their apparel colour choices (mean score range: 2.2-2.8). Specifically, 52% strongly agreed or agreed to preferring lucky colours per their astrological sign (Q1, mean = 2.4), while 46% aligned clothing colours with horoscopes (Q2, mean = 2.6). Belief in colours enhancing luck or positivity (Q3) was high at 54% (mean = 2.3). Avoidance of unlucky colours (Q4) and astrologer recommendations (Q5) showed 48% and 44% agreement, respectively. Confidence from astrological colours (Q6) was affirmed by 50% (mean = 2.5).

The findings confirm that astrology significantly influences apparel colour choices in Palghar District, with nearly half the sample aligning preferences with astrological guidance. High agreement on luck-enhancing colours (54%) reflects cultural beliefs in astrology's protective power, consistent with Sharma (2018). Students showed stronger adherence (60%), possibly due to greater exposure to traditional practices via family or media. Lower agreement on horoscope-based choices (46%) suggests selective adoption of astrological inputs. The chi-square results ($p < 0.05$) validate the hypothesis, aligning with Belk's (1975) theory of cultural influence on consumption. Limitations include the small sample size and online survey bias, potentially underrepresenting older or rural residents. Future research could explore gender differences or compare urban vs. semi-urban patterns. These insights suggest apparel brands could leverage astrology in marketing, e.g., promoting "lucky colour" collections.

6. Conclusion

This study demonstrates that astrological beliefs shape apparel colour preferences among Palghar District consumers, with 48% affirming their influence. Significant statistical correlations underscore astrology's role in this semi-urban Indian context. The findings bridge cultural traditions with consumer behaviour, offering a foundation for further research and practical applications in apparel marketing.

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Evaluating Financial Performance of SBI Through Financial Ratios

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Abstract
The objective of the present paper is to analyze the financial performance of SBI (State Bank of India) over a period of Five years. For this purpose, financial ratio analysis has been used. With the help of this analysis, it was inferred that in the public sector banks, SBI is the top-ranking bank in India, with its performance in terms of financial soundness being the best.
For this analysis, investment valuation ratios, profitability ratio, management efficiency ratio, balance sheet ratio & cash flow indicator were used. Results indicate that the performance of SBI in the study period has been excellent. SBI's excellent performance can be attributed to the adoption of modern technology, banking reforms, and good recovery mechanisms.
However, SBI need to improve its position with regards to a few parameters including debt-equity, operating profit, and non-interest income to total income.

Keywords: financial performance, public sector bank, financial ratios, investment, profitability, management efficiency, balance sheet, cash flow.

Introduction

A sound financial system is indispensable for the growth of a healthy and vibrant economy specifically when we are heading towards Five Trillion economy. Performance of the banking sector is an effective measure and indicator to check the performance of any economy to a large extent. The stage of development of the banking industry is a good reflection of the development of the economy. Evaluation of the financial performance of the banking sector is an effective measure and indicator to check the soundness of economic activities of the country.

More than three decades have elapsed since the initiation of banking sector reforms in India. Over this period, the Indian banking sector has experienced a paradigm shift. Hence, it is a high time to make a performance appraisal of this sector. Among the financial entities, commercial banks are the predominant financial intermediaries, and it is well recognized that the SBI (State Bank of India) has been instrumental in shaping the economic destiny of our country. Therefore, SBI is considered as one of the most important nerve centres of the economy and finance of India. Due to the globalization of the financial markets, banking institutions today face a fast paced, dynamic, and competitive environment at the global scale. In such a competitive environment, financial institutions are forced to examine their performance due the dynamic economics of the 21st century, and their survival depends upon their productive efficiencies. With this view, in the present paper, the financial performance of SBI has been analyzed.

Various approaches can be adopted to examine financial performance, and ratio analysis is one of them. Ratio analysis is an important part of the strategic planning. In this paper, to evaluate the financial performance of SBI, five key financial ratios have been used. With the help of these ratios, the financial soundness of SBI can be judged. The five key financial ratios considered are:
(a) investment valuation ratios
(b) profitability ratios
(c) management efficiency ratios
(d) balance sheet ratios
(e) cash flow indicator ratios

Review of Literature

The conceptual framework of application of ratio analysis is built on the following literature: Godse (1996) examined the application of CAMEL (Capital adequacy, Assets quality, Management efficiency, Earning quality, and Liquidity) model for evaluating the performance of banks.
Bodla and Verma (2006) studied the performance of SBI and ICICI through the CAMEL model for the period from 2000-2005. The study concluded that the liquidity position of both banks is sound and did not differ significantly.
Bhayani (2006) analyzed the performance of new private sector banks including ICICI, HDFC, UTI, and IDBI using the CAMEL model. The findings of the study revealed that the aggregate performance of IDBI is best among all the banks.
Chaudhary and Sharma (2011) made a comparative analysis of services of public sector banks and private sector banks. The paper made an attempt to analyze how efficiently public and private sector banks have been managing NPA.
Prasad and Reddy (2012) examined the economic sustainability of all public sector banks in India using the CAMEL model for the period from 2006-2010. Results indicated that on an average, Andhra Bank was at the top position followed by Bank of Baroda and Indian Bank.

Mishra, Harsha, Anand, and Dhruva (2012) analyzed the performance of 12 public and private sector banks over a period of eleven years (2000-2011). For this purpose, the CAMEL approach had been used, and it was established that the private sector banks are at the top of the list, with their performances in terms of soundness being the best. Looking at the trend, the researchers revealed that private banks are growing at a faster pace than public sector banks and will head towards convergence faster than the PSBs.
Singh, Anurag, and Tandon (2012) examined the financial performance of two major banks, that is, SBI and ICICI. The study was conducted to compare the financial performance of the two banks on the basis of ratios such as credit deposit, net profit margin, and so forth, for the period from 2007-2012. The study found that SBI was performing well, and was financially sound than ICICI Bank, but in the context of deposits and expenditure, it was found that ICICI bank was better in managing efficiency than SBI.
Guruswamy (2012) evaluated the performance of SBI and its associates, and five profitability ratios were considered. On the basis of analysis of profitability ratios, a fluctuating trend was observed during the study period from 1996-2008 for all the banks.

Research Methodology

In this paper, to analyze the financial soundness, and to infer about convergence of the State Bank of India, a very simplified approach was used through ratio analysis. For this analysis, financial data were derived directly from the annual reports, and financial ratios were employed for evaluating the performance of financial soundness of SBI for the last five financial years. The present study adopts analytical and descriptive research design. The data of the analytical sample bank, that is, SBI for a period from 2019-20 to 2023-24 were collected from the annual reports published by the banks, publicly available information published by the Reserve Bank of India (2025) and Moneycontrol.com (2025).

Fifteen variables related to financial ratios were used in this study. These are:
(1) operating profit, (2) net operating profit, (3) earnings per share, (4) net profit margin,
(5) return on long term fund, (6) return on net worth, (7) interest income on total funds,
(8) non-interest income on total funds, (9) interest expended on total funds, (10) net interest income on total funds, (11) capital adequacy ratio, (12) debt-equity ratio, (13) dividend payout ratio, (14) earning retention ratio, and (15) adjusted cash flow.

Analysis & Findings

For the analysis of financial performance of SBI, five ratios were studied. These ratios are:
(a) Investment Valuation Ratios,
(b) Profitability Ratios,
(c) Management Efficiency Ratios,
(d) Balance Sheet Ratios,
(e) Cash Flow Indicator Ratios.

All the data shown in the tables & figures are those at the end of the financial year. The required raw data for the financial ratios shown in the Tables 1-5 were collected from the annual reports (2019-20 to 2023-24) of SBI. After analyzing each ratio, the results are calculated.
Analysis and findings based on these 5 ratios are described only by one in following sections:

1) Investment Valuation Ratios: Investment valuation ratio is used by investors to evaluate the investment attractiveness. It attempts to simplify the evaluation process by comparing the relevant data, which helps users to gain an estimate of valuation. It measures the investors' response to owning a company's stock and the cost of the issuing the stock. The said are concerned with the return on investment for shareholders, and with the relationship between return and the value of an investment in company's shares. This ratio is analyzed by the following 3 parameters:

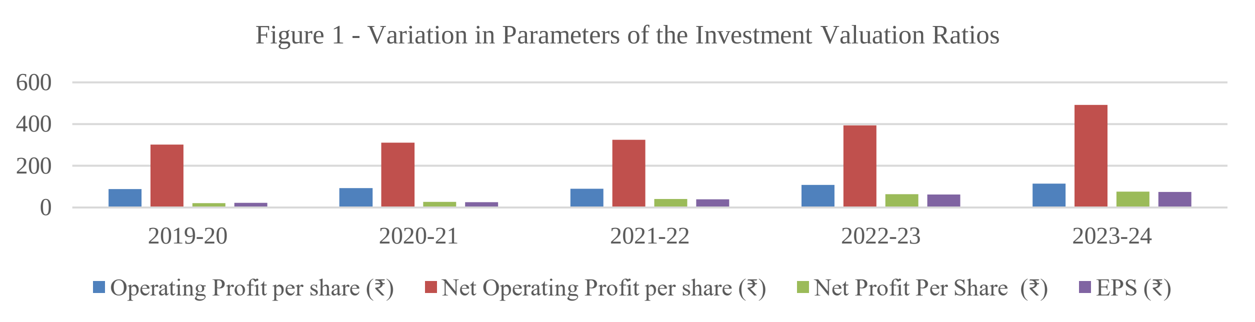
- **Operating Profit** is a measure of a bank's profit that excludes interest and income tax expenses. It is the difference between operating revenues and operating expenses, i.e., Operating profit = Operating revenues - Operating expenses
- **Net Operating Profit**: As banks have non-operating income also, in such cases, net operating profit or earnings before interest and tax (EBIT) is calculated as follows:
  Net operating profit = Operating profit + non-operating income
- **Earnings per share (EPS)** is the amount of income that the common stockholders are entitled to receive per share (of stock owned). This income may be paid out in the form of dividends, retained, and reinvested by the company, or a combination of both.

Table 1 - Investment Valuation Ratios for the period from 2019-20 to 2023-24

	2019-20	2020-21	2021-22	2022-23	2023-24
Operating Profit per share (₹)	88.26	92.56	89.76	109	115.18
Net Operating Profit per share (₹)	302.37	311.63	324.91	393.12	492.11
Net Profit Per Share (₹)	20.37	27.21	40.74	63.37	76.35

EPS (₹)	22.15	25.11	39.64	62.35	75.17

Source of Raw Data: Annual Reports (2019-20 to 2023-24) of SBI



The Table 1 shows the values of these 3 parameters in the last 5 financial years (2019-20 to 2023-24), which are further shown in the Figure 1, indicating the variation in these parameters in the form of bar charts. It can be observed from the Table 1 and Figure 1, that in general, all the 3 parameters increased year on year due to inflation. It can be observed from the data that SBI's financial position has been improving consistently. Furthermore, when the operating profit is compared with the net operating profit, it can be inferred that the total income consists of a big proportion of non- operating income. It is clear from the Table 1 that investors can think of investing their surplus money in SBI's stocks. EBIT was rapidly increasing and due to that, EPS was strong.

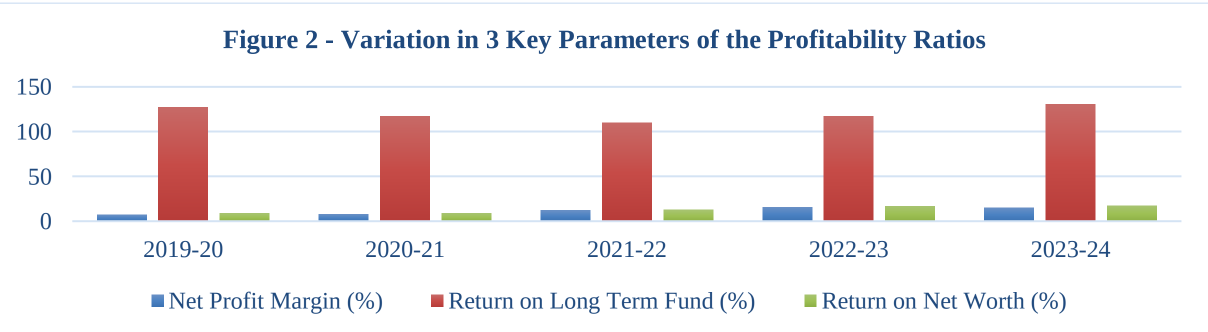
So, overall, from the investment valuation ratio's point of view, SBI had a strong financial position. Investors were confident of investing their surplus money in SBI's stock because their money was invested in a good stock, and they will get good returns every year as all the 3 parameters shown in the Table 1 and Figure 1 increased consistently year after year.

2) Profitability Ratios: Most of the investors want to invest in banks that are going to be profitable into the future. Highly profitable banks translate into a higher return on investment through share price appreciation or a higher dividend yield. As such, there are several popular ratios that measure a firm's profitability. These include net profit margin, return on net worth, and return on long term funds. Profitability ratios measure the efficiency of business operations with the help of profits. It is quite a useful tool to understand the efficiencies or inefficiencies of a business, and thereby assist management and owners to take corrective actions. Profitability ratios are the tools for financial analysis which communicates about the final goal (i.e. Profit) of a business. The different stakeholders (owners, the management, creditors, and lenders) of a business are interested in the profitability ratios for different purposes. These ratios show a bank's overall efficiency and performance. It can be divided into two types - margins and returns. Ratios that show margins represent the bank's ability to gain profits. Ratios that show returns represent the bank's ability to measure the overall efficiency of the bank in generating returns for its shareholders.

Table 2 - Profitability Ratios for the period from 2019-20 to 2023-24

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Adjusted Cash Margin (%)	32.06	35.08	38.58	38.61	38.24
Net Profit Margin (%)	7.32	8.05	12.19	15.86	15.27
Return on Long Term Fund (%)	127.4	117.47	109.68	117.13	130.71
Return on Net Worth (%)	8.69	8.89	12.53	16.8	17.31
Adjusted Return on Net worth (%)	51.18	52.18	54.34	54.07	57.7

Source of Raw Data: Annual Reports (2019-20 to 2023-24) of SBI



The Table 2 shows the variation in the 5 parameters of the profitability ratio for the last five years (2019-20 to 2023-24). Further, 3 key parameters are described in detail and are depicted in the Figure 2.

- **Net Profit Margin** is a key financial indicator used to assess the profitability of a bank. It is an indicator of how efficiently and how well a bank controls its costs. The higher the margin, the more effective the bank is in converting revenue into actual profits. As per the Table 2, in 2024, the net profit margin was 15.27 %. It measures profitability after consideration of all expenses, including taxes, interest, and depreciation. The net profit margin is calculated by using the following formula:

  Net Profit Margin = (Net Operating Profit (after tax)/Net Sales) x100

Both terms of this equation come from the income statement. It is also a good time-series analysis measure, whereby bank owners can look at data for their own bank across different time periods to see how the net profit margin is trending.

- **Return on Long Term Funds Ratio** establishes the relationship between net profit and the long-term funds. The term 'long term funds' refers to the total investment made in a business for a long term. It is calculated by dividing earnings before interest and tax (EBIT) by the total long-term funds. Return on long term funds is calculated based on the following formula:

  Return on Long Term Funds = (Net Operating Profit (EBIT)/ Long Term Funds) x 100
- **Return on Net Worth or Return on Equity Ratio** is perhaps the most important of all the financial ratios for investors. It measures the return on the money the investors have put into the company. This is the ratio potential investors look at when deciding whether to invest in the company.

  The calculation is: (Net Income/Stockholder's Equity) x 100

It can be observed from the Table 2 and Figure 2, the overall net profit margin ratio and return on net worth ratio increased considerably over the period. However, return on long term fund ratio decreased from the year 2019-20 & 2020-21.The major reason for this fluctuation is Covid 19 pandemic that impacted entire global economy. From the year 2021-22 we can see the improvement in this ratio with rose from 12.53% to 17.31% in 2023-24, which clearly indicates that the bank is performing well and the dip in ratio was only because of pandemic. Profitability ratios provide clues to the bank's pricing policies, cost structure, and production efficiency.

3) Management Efficiency Ratios: Management efficiency ratio reflects the growth and survival of a bank. Management efficiency means adherence with set norms, ability to plan and respond to changing environment, leadership, and administrative capability of the bank. The ratios in this segment involved subject analysis to measure the efficiency and effectiveness of the management. With the help of this parameter, the bank can evaluate the efficiency and take the corrective action to improve the quality. 4 parameters used for the management efficiency ratios are described as:

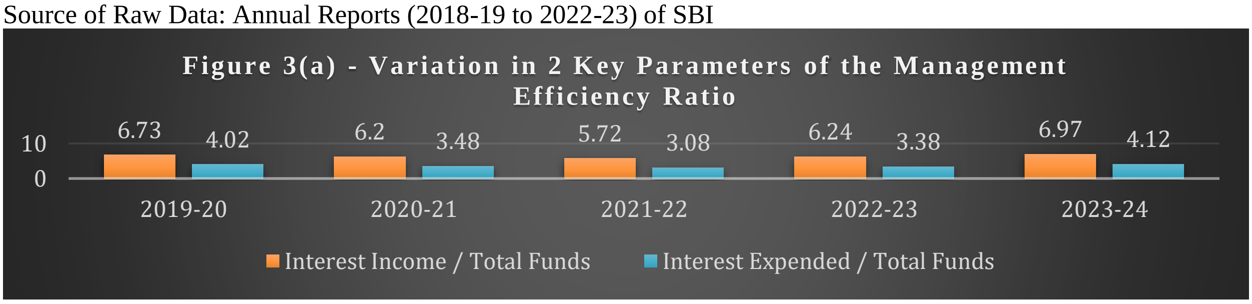
- **Interest Income/Total Funds:** Interest income is a basic source of revenue for the banks. Interest income to total funds indicates the ability of the bank in generating income from its lending operations. Interest income includes interest from loans, advances and investments, interest on deposits with the RBI, and dividend income.
- **Non-interest Income/Total Funds:** Non-interest income includes fee-based income accounts (exchange commission, brokerage), gains on sale, revaluation of investments, fixed assets, and profits from exchange transactions. SBI generated higher fee income through innovative products and by adopting latest technology for sustained service levels. This ratio measures the income from operations, other than lending of the total income. A higher ratio indicates the increasing proportion of fee-based income.
- **Interest Expended/Total Funds:** Interest expended/Total funds ratio means how much interest a bank is paying on borrowings. Lower ratio on interest expended/total funds indicated the decreasing proportions of interest paid by banks on borrowings.
- **Net Interest Income/Total Funds:** Net interest income is defined as:

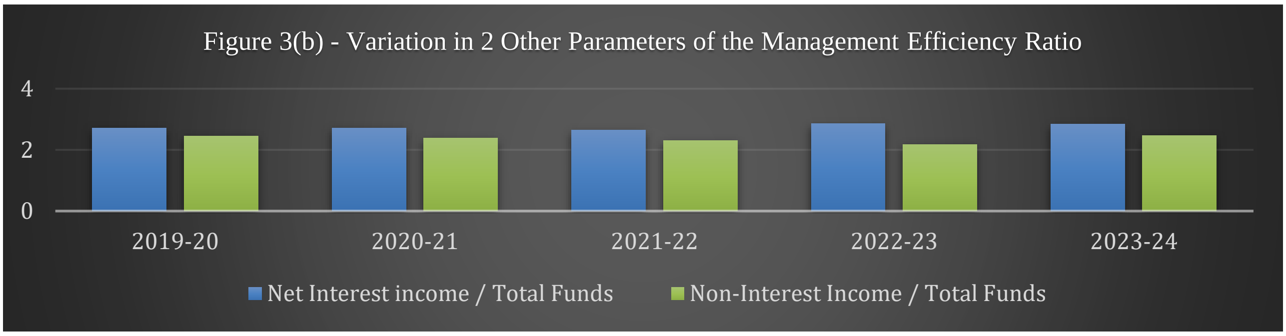
  Net Interest Income = Interest Income + Non-interest income – Interest Expended

Table 3 - Management Efficiency Ratio for the period from 2019-20 to 2023-24

	2019-20	2020-21	2021-22	2022-23	2023-24
Interest Income / Total Funds	6.73	6.2	5.72	6.24	6.97
Net Interest income / Total Funds	2.71	2.72	2.64	2.86	2.85
Non-Interest Income / Total Funds	2.45	2.39	2.31	2.18	2.47
Interest Expended / Total Funds	4.02	3.48	3.08	3.38	4.12

Source of Raw Data: Annual Reports (2018-19 to 2022-23) of SBI





The variation in the 4 parameters for the period from 2019-20 to 2023-24 are shown in the Table 3(a). There is no trend in variation; rather, the values fluctuated for different years. Further some, variation of interest income and interest expended is shown in the figure 3(a), which indicates that the former is always greater than the later. The interest expended is about 50-60% of the interest income. Furthermore, it can be observed that SBI's main source of income is interest income. Variation of net interest income with non-interest income is shown in the Figure 3(b). It can be observed that the non-interest income is just a fraction of the net interest income (about 1 to 2%). For most of the years, the ratio - net interest income/total funds lay in the range of 2 to 2.5. Thus, large variations have not been observed in both these parameters as the years passed.

Thus, the fluctuation in this ratio is quite significant. It is clear from the Table 3(a) that if the interest income increases, then the non-interest income decreases and vice-versa. Banks' growth depends on lending and borrowing transactions. These transactions depend upon the money market conditions. RBI's monetary and liquidity measures helped to control the interest income, and its effects are depicted in the Table 3(a). In 2020 and 2021, the interest income decreased, but due to the Covid -19 pandemic impact and moratorium but in the year 2022-23 we can see the rise in the same. The analysis of the data is presented in the Tables 3(a) and Table 3(b), the interest income and interest expended rosed. Due to inflation, there was a volatile condition in the money market, but still, SBI appeared to stand strong without any loss in profits.

4) Balance Sheet Ratios: Balance Sheet Ratios are used for examining the financial condition of any organisation. These ratios are based on data reported in balance sheet Certain ratios are particularly applicable to banks. The most important are the Capital adequacy ratio and the debt-equity ratio (Total Debt / Owners Fund)

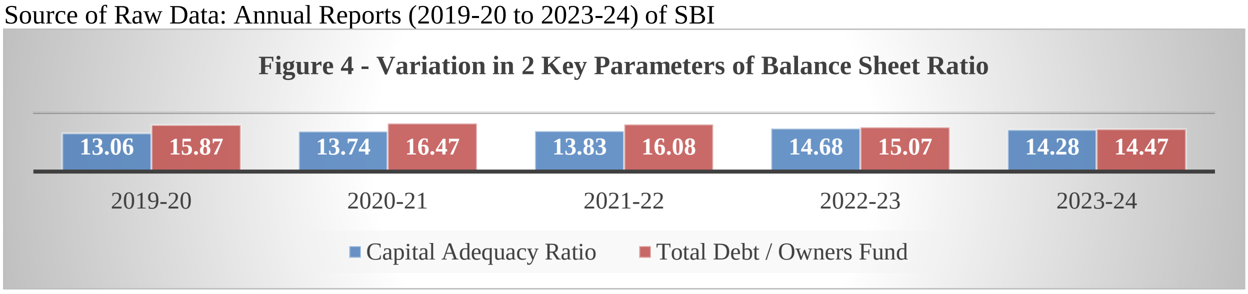
- **Capital Adequacy Ratio (CAR)** is important for a bank to maintain the depositor's confidence and preventing the bank from going bankrupt. It reflects the overall financial condition of the bank, and also reveals the ability of the management to meet the need of additional capital. The CAR was developed to ensure that banks can absorb a reasonable level of losses occurred due to operational losses and can determine the capacity of the bank in meeting the losses. As per the latest RBI norms, the banks should have a CAR of 9%. A higher CAR reveals the fact that the bank is safe against bankruptcy.
- The **Debt-Equity Ratio** shows how much proportion of the bank's business is financed through equity and how much is financed through debt. It is calculated by dividing total borrowings with shareholders' net worth. A higher ratio is an indication of less protection for the depositors and creditors and vice-versa.

The Table 4 shows the variation in the 2 parameters for the last five years (2018-19 to 2022-23), which are also shown in the Figure 4. From the Table 4 and Figure 4, it can be observed that SBI's financial position is very strong. The average CAR in the period from 2018-19 to 2022-23 was 13.61%. This shows that SBI has maintained a higher CAR than the prescribed level. As per RBI's capital adequacy norms, the standard CAR is 9% and with this point of view, it was observed that the SBI is capable enough to maintain the capital adequacy ratio of 9%. Furthermore, the average debt-equity ratio of SBI for this period was 15.89%, which is an indication of less protection for the depositors and creditors. This is an area where SBI needs to improve.

Table 4 - Balance Sheet Ratios for the period from 2019-20 to 2023-24

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Capital Adequacy Ratio	13.06	13.74	13.83	14.68	14.28
Total Debt / Owners Fund	15.87	16.47	16.08	15.07	14.47

Source of Raw Data: Annual Reports (2019-20 to 2023-24) of SBI



5) Cash Flow Indicator Ratios

- **Dividend Payout Ratio** compares the dividends paid by an organization to its earnings. The relationship between dividends and earnings is important. The part of earnings that is not paid out in dividends is used for reinvestment and growth in future earnings. Investors who are interested in short term earnings prefer to invest in companies with high dividend payout ratio. On the other hand, investors who prefer to have capital growth like to invest in companies with lower dividend payout ratio. Dividends are paid in cash; therefore, a high dividend payout ratio can have implications for the cash management and liquidity of the company.
- **Earning Retention Ratio** is also called as Plowback Ratio. It is the ratio that measures the amount of earnings retained after dividends have been paid out to the shareholders. The objective to calculate the earnings retention ratio is that the more the bank retains, the faster are its chances of growing its business. The growth of dividends and the stock price is dependent on the bank's growth. However, the earnings retention ratio is related to the bank's growth rate. It is the amount of earnings the company reinvests in its business rather than distributing it to the shareholders as a dividend. Since the sum of the retention rate and the dividend payout ratio equals unity, it follows that:

Earnings Retention Ratio = 1-Dividend Payout Ratio = (Net Income - Dividends)/Net Income

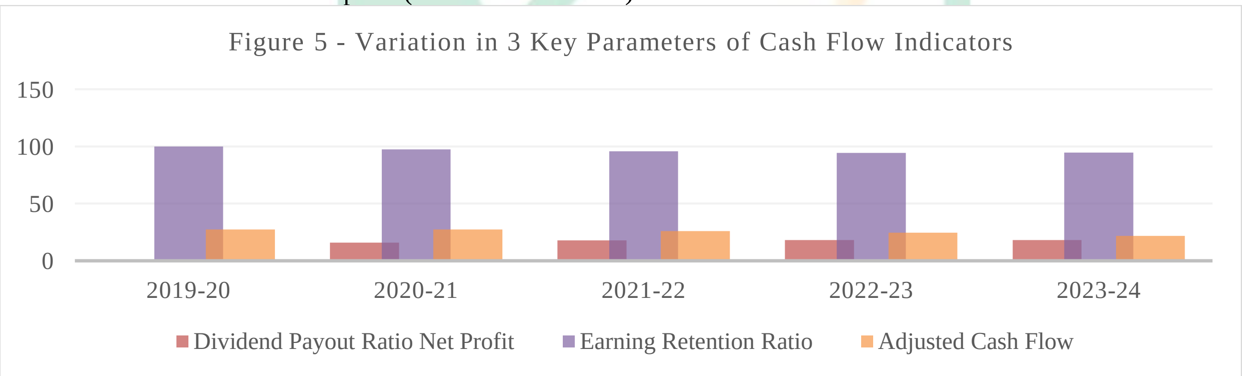
- **Adjusted Cash Flow or Adjusted Net Income** represents a business's earnings after expenses. It shows the earnings before interest, depreciation, and taxes, but it also includes additions or subtractions for such items as the owner's salary and discretionary, one-time, and non-cash expenses. It shows whether the business returns are positive, break-even, or a loss. The annual adjusted net cash flow provides a starting point to determine potential profits under a new owner and a new management style.

The Table 5 shows the variation in the above mentioned 3 parameters for the last five years (2019-20 to 2023-24), which are also shown in the Figure 5. It is observed from the Table 5 and Figure 5, that in general, the dividend payout ratio increased year-wise and was lowest in 2019-20 (Impact of Covid 19) , after which it increased considerably. The value of earning retention ratio was almost stable, indicating that SBI's growth was increasing over time. Adjusted cash flow shows that the bank’s return was positive, and the investors felt safe about their money as well as about their returns.

Table 5 - Cash Flow Indicators Ratios for the Period from 2019-20 to 2023-24

	2019-20	2020-21	2021-22	2022-23	2023-24
Dividend Payout Ratio Net Profit	0.04	15.94	17.91	18.12	18.24
Earning Retention Ratio	100	97.29	95.87	94.37	94.53
Adjusted Cash Flow	27.29	27.48	26.03	24.45	21.84

Source of Raw Data: Annual Reports (2019-20 to 2023-24) of SBI



Conclusion

The present paper has made an attempt to examine the financial performance of the largest public sector bank in India - the State Bank of India (SBI). The study is based on ratio analysis, and has brought out some interesting results, which are summarized as follows:

Investment valuation ratios demonstrated that SBI has a strong financial position. Investors were confident about investing in SBI's stocks because they were confident that by investing in this stock, not only will their money be safe, but they will get good returns every year.

The Profitability ratios indicated that return on long term funds and return on net worth clearly proved the financial soundness of SBI. But after monitoring the changes in these profitability ratios, it is clear that the bank has to improve its operational strategy; only then it will be able to attract more customers and investors. For sound financial health, the bank needs to put in more effort to be efficient in generating greater profits per rupee of sale.

The Management Efficiency ratio showed that the growth and survival prospects of SBI are excellent. As per this ratio, SBI succeeded in maintaining an optimum level of management efficiency.

SBI had a CAR at a higher level than the prescribed level, and the dependence on debt capital decreased over the last 5 years.

The cash flow indicators that are, earning retention, and adjusted cash flow ratios showed the stable and strong position of SBI. Dividend payout ratio is also stable from 2020 – 21 is showing the improvement over the years.

In February 2025 RBI in their Monetary Policy was reduced the Repo Rates by 25bps from 6.50% to 6.25% after 2 years. The RBI also decided unanimously to continue with the 'neutral' stance and to remain unambiguously focused on a durable alignment of inflation with the target, while supporting growth. Further reduction in interest rate by RBI will boost the liquidity in the economy and the benefit of this rate cuts banks will surely be pass on to the customers and SBI as the largest PSU bank will be benefited which will ultimately highlight in figures of next couple of quarterly results.

Suggestions

In the present paper, I aimed to evaluate the financial soundness of SBI, and financial ratios were employed for the same purpose. It can be inferred from the analysis that the adoption of modern technology, banking reforms, and recovery mechanism greatly aided in improving the performance of the bank. However, there are few areas where improvement is required, for example, in the areas of debt-equity, operating profit, and non-interest income to total income.

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Role of Training & Development in Performance of Public Sector Employee – A Review

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Abstract

For public sector workers, training and development (T&D) is essential to improving their productivity, efficiency, and job satisfaction. When T&D initiatives are managed well, government workers are guaranteed to accomplish organisational goals, pick up pertinent skills, and adjust to new technologies. The tactics, difficulties, and best practices associated with overseeing training and development in public sector organisations are examined in this essay. Bureaucratic roadblocks, financial limitations, opposition to change, and inadequate assessment techniques are some of the main difficulties. Successful training programs are a result of best practices including needs assessment, blended learning strategies, leadership assistance, and ongoing professional development. In order to improve the delivery of public services, the study emphasises how crucial it is to match training programs with organisational objectives and staff requirements. Additionally, accountability and long-term efficacy are ensured by using performance measures to assess the effects of training. In the public sector, a well run T&D framework increases employee engagement, promotes a learning-oriented workplace, and strengthens governance overall.

Keywords – Training, Development, Performance, Public sector, Leadership, Efficiency

Introduction

Programs for training and development are essential to every organisation. The employee's performance shortfall, calculated as follows, determines the requirement for training and development: Standard performance minus actual performance equals the requirement for training and development. Training improves an organization's overall performance in a number of ways (Manjula & Srinivasan, 2007). Personality development, interpersonal relationships, problem-solving techniques, managerial and supervisory training programs, quality improvement programs, technical processes, quality circle programs, time management skills, employee efficiency development programs, violence prevention programs, regulatory compliance, goal-setting and program implementation, workplace safety management, workplace communication, and so forth are the main areas where employees are typically trained in an organisation. Employees may grow their talents within the company through training, which inevitably contributes to the company's market worth, employees' earning potential, and job security (Carter & Wilson, 2021). Employees that receive training improve their attitude and become more cooperative inside the company. Training and development initiatives enhance work-life balance by fostering a supportive work environment (Anderson, 2022).

Training and Development in Public Sector

Any training programmer's goal is to teach and experience new hires so they may rapidly and affordably achieve the necessary level of performance in their positions. Training will assist current employees build the skills they need to perform better in their current positions, master new technologies or processes, and get ready to take on more responsibility in the future. The purpose of employee development programs is to achieve particular goals that enhance the effectiveness of the organisation and its workforce. The management development process consists of many phases (Carter & Wilson, 2021). These include reviewing the organization's goals, assessing its management resources, identifying the needs of each individual, creating and executing development programs, assessing their efficacy, and calculating the effect of training on participants' quality of work-life balance.

1. Stages of Training & Development Programs in Public Sector

For training to yield the anticipated results, it should be carried out in a methodical manner. The four phases of the training system are as follows: a. Evaluation of the needs of the training and development program. b. Creating the programs for training and growth. c. The training program's execution d. Training program evaluation.

Employee Development = Employee Education + Employee Skills + Training Effectiveness + Employee Quality of work life.

According to Herbert et al. (2000), employee performance is the result or contribution of workers to help them achieve goals. Performance may also be used to characterise what an organisation has achieved in terms of process, outcomes, relevance, and success. National Development Program of Uganda (1995). Performance is defined by Afshan et al. (2012) as the accomplishment of certain tasks evaluated in relation to preset or specified criteria of accuracy, completeness, cost, and speed. Employee performance may be demonstrated by increased output, ease of use of new technologies, and highly engaged staff.

2. **Importance of Training & Development in Public Sector**

The following justifies the necessity of training and development:1. Employees are less stressed because they can better balance their personal and professional lives. 2. These initiatives aid in enhancing workers' mental and physical well-being, which lowers absence rates. 3. Employee commitment to the organization's objectives, work satisfaction, productivity, and morale are all improved by these activities. 4. The advancement of people in their personal and professional life is another goal of these programs. 5. They reduce disputes between employees at different levels by enhancing communication amongst management at all levels. 6. These kinds of programs facilitate successful negotiations and allow for the creation of contracts that meet the needs of various employee types. 7. These initiatives improve managerial effectiveness and fortify staff organisation (Brown, 2019).

Individual level: Identifying current issues and upcoming difficulties, Enhance personal performance or address performance deficiencies, Enhance your knowledge, abilities, or any other issue. To foresee future skill requirements and equip staff to manage increasingly difficult jobs to get ready for any employment changes (Jadhav, 2013).

Group level: In order to prevent scraps and accident rates, group levels must adapt to any changes in organisational strategy when new goods and services are introduced (Ramakrishna et al., 2012).

3. Methods of Training

(a) On the Job Trainings

These techniques are typically used in the workplace when workers are actively doing their jobs.

- **Advantages** - It is directly related to the work environment. It is frequently casual. It works best since it is experience-based learning. It costs the least. The trainees are really driven. There are no phoney classroom scenarios.
- **Disadvantages** - Trainer may not be experienced enough to train. It is not systematically organized poorly conducted programs may create safety hazards.

On the Job Training Methods:

1) *Job Rotation*: This approach often involves assigning workers to a variety of jobs in different departments one after the other. The goal is to provide a thorough understanding of the roles played by various departments. Benefit: The employee learns how his department and others operate. Enhancing interdepartmental collaboration fosters teamwork. A disadvantage is that an employee 8 could find it too much to handle. Employees' work duties are not the main emphasis. Employees' fundamental skills could not be fully utilised (Purohit, 2012).
2) *Job Coaching*: A seasoned worker can provide a verbal presentation on the specifics of the position (Saharan, 2010).
3) *Job Instruction*: This might include instructions on how to carry out a certain activity or function. It might take the shape of directives or instructions on how to complete a task (Smith & Jones 2020).
4) *Apprenticeships*: New graduates are typically placed under an experienced worker to gain knowledge of job tasks (Johnson & Lee, 2020).
5) *Internships and Assistantships*: During their studies, interns and assistants are hired to do certain time-bound tasks or projects. It could be a component of their academic programs (Martinez, 2019).

(b) Off the Job Training

These are utilised for things like seminars and classroom trainings while workers are not working.

- **Advantages** - Most trainers have sufficient expertise to instruct. It is methodically structured, and well-made programs might be quite beneficial (Nagar, 2009).
- **Disadvantages** - The fact that it is not directly related to the work. It is frequently formal (Srimannarayana, 2011). Experience is not the basis for it. It costs the least. It's possible that trainees lack motivation. Its nature is more artificial.

Off the Job Training Methods

1) *Classroom Lectures*: An lecturer gives a speech to a sizable group of people. i. Benefits: It works well for big gatherings. The cost per trainee is little. ii. Drawbacks: Poor popularity. Practice does not equate to learning. The communication is one-way. no real system for feedback. probably boredom.
2) *Audio-Visual*: Presentations, TVs, movies, and other media can be used. i. Benefits: Quality control is feasible and a variety of actual examples are available. ii. Drawbacks: No feedback system, one-way communication. No flexibility for diverse audience.
3) *Simulation*: Putting decision-making into a real-world scenario and comprehending the real-world circumstances that it faces. Here are a few examples of training simulation techniques. A case study is a written account of a real-world scenario in which a trainer is expected to conduct analysis and provide written findings. Most of the instances are based on real-world organisational circumstances (Carter & Wilson, 2021). It is the best way to encourage decision-making skills when faced with a lack of information. a. Role plays: In these, students act out the parts of particular case study personalities in front of the audience. It enhances interpersonal ties and has a more emotional focus. Another outcome is a shift in attitude. In MDP, they are typically utilised (Johnson & Lee, 2020).
4) *Sensitivity training*: This focusses more on behavioural evaluation and how a person would act towards others and himself in certain situations. It is immediate and does not follow a set timetable (Smith & Jones 2020).

4. **Discussion**

Programs for training and development are essential for improving employee performance and productivity because they provide workers the abilities, know-how, and skills they need to do their jobs well. These initiatives make sure that workers stay capable in their positions, adjust to changes in the market, and support the success of the company. work rotation, coaching, apprenticeships, and work instruction training are examples of on-the-job training techniques that improve flexibility, skill development, and practical knowledge, which in turn improves job productivity and efficiency (Smith & Jones, 2020; Brown, 2019). Employees can encounter other departments through job rotation, which enhances their organisational knowledge and problem-solving skills. Employee confidence and work happiness are increased via coaching and mentoring, which promote a culture of lifelong learning. While job instruction training guarantees accuracy and efficiency in task execution, apprenticeships and internships give employees practical experience that improves their proficiency in their particular positions (Williams, 2018; Davis & Thomas, 2021).

Employee performance is also greatly improved by off-the-job training techniques including seminars, classroom instruction, e-learning, and simulation training. Workshops and seminars assist personnel strengthen their problem-solving abilities by offering insights into industry trends and cutting-edge practices (Anderson, 2022). Classroom instruction enhances leadership and strategic thinking abilities, preparing staff members for additional responsibility (Johnson & Lee, 2020). E-learning is a cost-effective training method that provides employees with flexibility and accessibility, enabling them to learn at their own speed (Martinez, 2019). Simulation training, which is frequently utilised in sectors including manufacturing, healthcare, and aviation, helps employees make better decisions and lower workplace hazards by preparing them for real-life issues (Carter & Wilson, 2021). An engaged, competent, and productive staff is the result of a well-balanced mix of on-the-job and off-the-job training techniques, which eventually propels organisational success (Martinez, 2019; Davis & Thomas, 2021).

5. Conclusion

Employee success in the public sector is inextricably linked to training and development. Good training programs improve workers' abilities, output, and job satisfaction, which improves operational effectiveness and service delivery. To guarantee ongoing professional development, public sector organisations must take a strategic approach to training by combining both on-the-job and off-the-job training techniques. HR departments must regularly analyse training needs in order to optimise the effect of training programs and guarantee that workers get up-to-date, pertinent information that is in line with organisational goals. In order to develop a workforce that is flexible and robust to changes, the government should also set aside enough funds for training initiatives and promote a culture of lifelong learning. Standardised training frameworks and policies that support professional growth should be put into place by policymakers to make sure that training initiatives complement organisational and national objectives. Additionally, using cutting-edge technology, such AI-driven training solutions and e-learning platforms, can improve training program accessibility and participation. In addition to enhancing worker performance, a well-planned training and development program would increase the effectiveness of public service delivery, promoting efficiency and confidence in government agencies. The public sector may establish a workforce that can handle the changing needs of governance and administration by placing a high priority on ongoing learning and skill development.

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The Role of Nonverbal Communication in the Workplace

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Abstract
Nonverbal communication plays a vital role in the effectiveness of interpersonal interactions within business environments. This paper explores the components of nonverbal communication, such as body language, eye contact, facial expressions, gestures, posture, and proxemics, and their impact on workplace communication. By understanding and managing nonverbal cues, individuals and organizations can enhance clarity, build trust, and avoid misinterpretations. The study also discusses cultural differences, challenges in decoding nonverbal signals, and strategies for improving nonverbal communication in professional settings.
Keywords: Nonverbal communication, body language, workplace communication, professional interactions, cultural differences.

1. Introduction
Effective communication is a cornerstone of success in business. While verbal communication conveys direct messages, nonverbal communication often reveals emotional context, attitudes, and interpersonal dynamics. In a workplace setting, nonverbal cues can reinforce or contradict spoken words, making it crucial to understand their implications. This paper examines the significance of nonverbal communication and offers insights into improving communication efficacy in professional settings.

2. Components of Nonverbal Communication
2.1 Facial Expressions
Facial expressions communicate emotions more powerfully than words. A smile can convey friendliness and openness, while a frown may indicate disagreement or concern.
2.2 Eye Contact
Sustained eye contact often signals confidence and engagement. However, excessive or lack of eye contact can be perceived as aggression or disinterest, respectively.
2.3 Gestures and Posture
Gestures enhance verbal communication, whereas posture reflects confidence and attentiveness. Open postures indicate approachability, while closed postures may suggest defensiveness.
2.4 Proxemics
The physical distance maintained during interactions affects comfort levels and perceptions of professionalism. Personal space preferences vary across cultures and contexts.

3. Importance in the Workplace
3.1 Building Trust and Rapport
Consistent nonverbal behavior supports verbal messages and helps establish credibility and rapport among colleagues.
3.2 Enhancing Clarity
Nonverbal signals clarify tone and intention, reducing misunderstandings and reinforcing communication goals.
3.3 Leadership and Influence
Leaders with strong nonverbal communication skills are often perceived as more confident and persuasive.

4. Cultural Considerations
Nonverbal communication is highly culture-specific. For example, direct eye contact may be a sign of respect in Western cultures but can be considered rude in some Asian cultures. Misinterpretations can arise without cultural awareness, especially in multinational teams.

5. Challenges and Misinterpretations
5.1 Ambiguity of Nonverbal Cues
Nonverbal signals can be ambiguous and subject to multiple interpretations, depending on the context and relationship between communicators.
5.2 Incongruence with Verbal Communication
When nonverbal cues contradict spoken words, listeners are more likely to trust the nonverbal message. This can lead to confusion and mistrust.

6. Strategies for Improvement
6.1 Self-awareness and Feedback
Regular self-assessment and seeking feedback can help individuals identify unintentional nonverbal habits.
6.2 Active Observation
Being attentive to others' nonverbal cues enhances emotional intelligence and empathy.

6.3 Training and Development
Workshops and simulations can improve body language, tone modulation, and intercultural competence.

7. Conclusion
Nonverbal communication is a critical component of effective workplace interaction. Understanding and consciously using nonverbal cues can significantly enhance communication, collaboration, and overall organizational success. With increased awareness and cultural sensitivity, professionals can foster more meaningful and productive relationships.

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Government Support for Startups: A Study on Impact of Policies on Entrepreneurial Aspirations of Youth in Mumbai Region

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1. Abstract
This research paper examines the efficacy of governmental policy to support startups among young people in the Mumbai area. While India is recognized as one of the world's fastest-growing startup ecosystems, a range of governmental initiatives have been designed to enhance help for entrepreneurs of the future. The challenge has been unevenness in rollout and absorption of policy in regions. The research aims to understand levels of awareness and perceived barriers to accessing policy support initiatives for startup assistance for youth in Mumbai, along with identification of underlying issues around information dissemination, regional applicability, and implementation. Data was collected via a structured surveying instrument with degree college students. The aim of the findings is to make recommendations and provide insight towards actionable improvements in policy uptake and relevance.
Keywords: Startup India, Government Schemes, Young Entrepreneurs, Mumbai Region, Entrepreneurship Policy, Innovation, MSME

2. Introduction:
The increasing economic growth and digital transformation of India have largely contributed to the emergence of startups. With upwards of 90,000 startup registrations, India has emerged as one of the leaders in innovation and economic development. The Government of India recognized the importance of supporting entrepreneurs and therefore began several flagship initiatives including Startup India, Stand-Up India, and various state-specific schemes, with the goal of providing finance, incubation, mentoring, and ease of doing business. India's commercial capital, Mumbai, by proxy, attracts many aspiring entrepreneurs, particularly among the youth. The educational institutions, innovation zones, and business accelerators located in the city aim to attract young entrepreneurs. Various state institutions, such as Maharashtra State Innovation Society (MSInS), and Mumbai FinTech Hub, aim to connect young entrepreneurs to localized support. But while there are established policies in place for startups, many young residents are either unaware of the policies, or have trouble accessing support due to bureaucratic blockades or limited mentorship with respect to lower-level funding opportunities. The purpose of this research is to understand how policies impact the startup aspirations of youth in the Mumbai region and systematically assess the strengths and weaknesses of these policies, with a basis for future recommendations to strengthen implementation and inclusiveness.

3. Review of Literature :
Malik (2022) conducted a qualitative study that delves into the role of government schemes like Startup India and Make in India in nurturing the entrepreneurial ecosystem. The study highlights that while these initiatives have laid a strong foundation by reducing regulatory hurdles and providing access to funding, they still lack proper outreach mechanisms to penetrate student and youth segments effectively.
Sharma, Ritu, and Rawat (2023) undertook a quantitative investigation to assess the awareness and satisfaction levels of startup beneficiaries regarding government schemes. Their findings revealed that although awareness has grown, many entrepreneurs face delays in approvals and funding disbursement. They recommend streamlining procedures and integrating digital platforms for easier access.
Razak and Reddy (2019) emphasized the importance of aligning central and state-level policies to promote entrepreneurship holistically. They argue that while central policies are well-designed, their regional implementation lacks consistency. The paper calls for decentralized policy frameworks tailored to specific urban and rural demographics.
Nagar and Ahmad (2024) investigated the Startup India Scheme's effectiveness in fostering innovation. The authors praised the scheme's ability to support tech-based startups and innovation-driven enterprises. However, they also noted a gap in inclusion for women and rural youth, suggesting more targeted sub-schemes for diverse groups.
Khatik and Shrivastava (2023) focused on youth perceptions and their trust in government initiatives. Their study found a generally positive attitude among urban youth but highlighted that many remain sceptical due to the perceived complexity of processes and the lack of mentorship programs. They advocate for educational integration to improve engagement.
Nanavati and Bedarkar (2020) examined the digital transformation of government services and its influence on the startup ecosystem. Their research demonstrated a correlation between improved digital infrastructure and entrepreneurial activity but warned that infrastructural inadequacies in tier-2 and tier-3 cities continue to pose barriers.
Gulhane and Deulkar (2020), in their study "Government Policies to Promote Entrepreneurship", examine the vital role that government initiatives play in fostering entrepreneurial activity in India. They emphasize that entrepreneurship significantly contributes to economic development by generating employment, increasing exports, and improving per

capita income. The authors analyze key schemes such as Startup India, Make in India, MUDRA Yojana, and Pradhan Mantri YUVA Yojana, assessing their objectives, implementation mechanisms, and sectoral impact.

4. Objectives of the study :

1. To study the level of awareness about government startup policies among young citizens of Mumbai.
2. To analyze the perceived effectiveness of these policies.
3. To identify challenges faced by young entrepreneurs in accessing policy benefits.
4. To suggest recommendations for improving startup policy implementation in Mumbai.

5. Hypotheses of the study :

1. H_0 (Null): There is no significant level of awareness among young citizens in the Mumbai region about government startup policies.
   H_1 (Alternative): There is a significant level of awareness among young citizens in the Mumbai region about government startup policies.
2. H_0 (Null): Young aspiring entrepreneurs in Mumbai do not perceive government startup policies as effective.
   H_1 (Alternative): Young aspiring entrepreneurs in Mumbai perceive government startup policies as effective.
3. H_0 (Null): Young entrepreneurs in Mumbai do not face significant challenges in accessing government startup schemes.
   H_1 (Alternative): Young entrepreneurs in Mumbai face significant challenges in accessing government startup schemes.

6. Research Methodology

The research adopts a descriptive and exploratory approach to analyze the awareness, perception, and challenges faced by young citizens of Mumbai regarding government startup policies.

- Research Design: Descriptive and Exploratory
- Population: Young citizens of the Mumbai region (students aged 18–26 years)
- Sample Size: 85 degree college students were selected through convenience sampling
- Sampling Technique: Non-probability, Convenience Sampling
- Data Collection Mode: Online (Google Forms)
- Data Analysis Techniques: Descriptive statistics (percentages)
- Limitations: Limited geographical scope, sample confined only to students who are not very fixed in their mindset.

7. Data analysis and interpretation

The study surveyed 85degree college students from the Mumbai region to assess their awareness and perception of government support for startups. The hypothesis were tested on the basis of qualitative analysis of the responses collected from the questionnaire. The key findings were as follows:

7.1 Age and Gender Distribution

- Majority of the respondents were aged **18–25 years**.
- A significant proportion of the respondents were **female**, showing a positive trend in female participation in entrepreneurship awareness.

7.2 Awareness of Government Startup Policies

- About **56.5%** of respondents were **aware** of government policies supporting startups.
- The most known schemes were:
  - **Maharashtra State Innovation Society (MSInS)**
  - **Startup India**

H_0 (Null): There is no significant level of awareness among young citizens in the Mumbai region about government startup policies.
H_1 (Alternative): There is a significant level of awareness among young citizens in the Mumbai region about government startup policies.

From the analysis of the above responses the Null hypothesis is accepted as 56.5% is not the significant number of respondents aware about the policies.

7.3 Entrepreneurial Aspirations

- **78.8%** of students expressed a desire to **start their own business** in the future.
- Only around **24.7%** are **currently engaged** in entrepreneurial activities.

7.4 Perceived Challenges found in the study

- The top challenges faced by students include:
  - **Lack of funding**
  - **Lack of mentorship and guidance**
  - **Regulatory hurdles**

7.5 Effectiveness of Government Policies

- **55.4%** of respondents believe that existing government policies are **helpful**.
- However, **45.6%** were **not sure**, indicating a gap in information or impact visibility.

7.6 Suggested Government Support Respondents suggested improvements like:

- **Increased funding opportunities**
- **Easier regulatory processes**
- **Improved mentorship programs**
- **Awareness sessions in colleges**

7.7 Open-ended Suggestions

- Some respondents suggested wealth grants or subsidies for new setups.
- Others emphasized the need for **localized incubators**, **startup awareness campaigns**, and **college-based startup cells**.

8. Hypotheses Testing :

a. Alternative Hypothesis 1 (H_a) - Young citizens in the Mumbai area have a level of awareness of government startup policies but not the significant one. So null hypothesis is accepted.

b. Alternative Hypothesis 2 (H_a) - Young entrepreneurs in Mumbai believe government startup policies are beneficial - was accepted. 60% of participants rated existing government schemes as helpful.

c. Alternative Hypothesis 3 (H_a) - Young entrepreneurs in Mumbai face various barriers to government startup schemes - was accepted. Survey respondents classified lack of funding, lack of mentorship, and regulatory barriers as the biggest issues with access. The study's findings indicate that while awareness and perceived usefulness of government startup policies and programs are high, barriers persist as practical access and processes are still an issue.

9. Conclusion :

The study shows that although most young citizens of Mumbai know about the Indian government policies for startups, there is still a major gap in availability, mentorship and more importantly practical support. Young students are clearly interested in being entrepreneurs, but they face common barriers including lack of funding, lack of mentorship and lack of understanding of the laws and regulations. Although existing policies such as Startup India and the Maharashtra State Innovation Society (MSInS) are noted as effective, their effort to reach young people could be improved through implementation at the ground level and using effective communication in educational institutions.

10. Recommendations:

i. Enhanced Awareness Campaigns: Government and institutions should regularly pursue awareness programs - educational programs - for students particularly in colleges - about startup schemes.

ii. Simplification of Application Procedures: The application process should be streamlined; the digital portals and documentation requirements should be accessible so that young people can tap into the schemes easily.

iii. Mentorship Hubs: Colleges and universities should collaborate with a startup incubator and entrepreneurs with experience to build structured mentorship.

iv. Community-based Funding and Incubation Hubs: Micro-incubation hubs and improved access to seed funding would help local communities fill financial gaps with startup funding.

v. Continuous Feedback Mechanism: Young entrepreneurs should have a way to give feedback on implementation and successes and failures of the policies to continue to learn and improve.

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Understanding User Response to Digital Payment Innovations: An SOR Framework Approach

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Abstract

This paper investigates user responses to digital payment innovations using the Stimulus-Organism-Response (SOR) framework. As technologies like UPI, NFC-based contactless payments, and biometric authentication reshape financial transactions, understanding user behavior becomes increasingly important. Traditional models often neglect emotional and perceptual factors influencing adoption. By examining how external features (stimuli) interact with internal user states (organism) to shape behaviors (response), the study offers a holistic view of digital payment usage. Key findings highlight the importance of perceived ease of use, trust, innovation resistance, and emotional comfort in driving adoption. The paper provides both theoretical insights and practical implications for developers, financial institutions, and policymakers aiming to foster broader and more inclusive use of digital payment systems.

Keywords

Behavioral intention, Biometric authentication, Contactless payments, Digital payments, Innovation resistance, SOR framework, Technology acceptance, UPI, User adoption.

I. Introduction

Background

In recent years, digital payments have quickly evolved, reshaping how people manage financial transactions. Technologies like near-field communication (NFC), the Unified Payments Interface (UPI), and biometric verification have made payments faster, more secure, and accessible [5][6]. This shift is part of a broader trend toward digitizing financial services, which allows people across regions and age groups to transact with greater ease.

Problem Statement

Even though these innovations are growing in popularity, the way people respond to them is far from uniform. Factors like trust, familiarity with technology, emotional comfort, and concerns about safety affect adoption. Many traditional models don’t fully capture how external features and internal reactions interact to shape behavior.

Objective

This paper aims to explore how users react to digital payment systems using the Stimulus-Organism-Response (SOR) framework. This approach helps break down how external features influence people’s thoughts and feelings, which in turn shape how they behave.

Significance

Understanding this behavior can help developers build better systems, assist policymakers in creating effective awareness campaigns, and provide financial institutions with insights into customer needs. The paper also expands the academic use of the SOR model in financial technology studies.

II. Literature Review

Digital Payment Innovations

Recent advances have made digital payments more user-friendly and secure. For example, UPI makes direct bank transfers possible without needing physical cash or cards [5]. NFC-based contactless payments offer speed and hygiene, while biometric logins improve security and ease of use [6].

User Behavior Theories

Models like the Technology Acceptance Model (TAM) argue that people are more likely to use technology if they find it useful and easy to navigate [1]. The Unified Theory of Acceptance and Use of Technology (UTAUT) adds social influence and other support systems as influencing factors [7]. Still, these models often overlook how emotions and external contexts affect behavior.

Stimulus-Organism-Response (SOR) Framework

Mehrabian and Russell’s SOR model [3] shows how environmental cues (Stimulus) affect our internal states (Organism), which then influence behavior (Response). In payment systems, this can mean a person reacts not just to how well a system works, but also how it makes them feel. Studies have used this model to better understand user trust, usefulness, and emotional reactions [2][4].

III. Application of the SOR Framework to Digital Payment Innovations

Stimulus (S)

In this context, stimuli include features of digital payment systems:

- UPI’s ease and flexibility
- Speed and cleanliness of contactless payments

- Security and ease of biometric login
- Usefulness and simplicity [1][2][8][9]
- Service quality and influence from others [1][10][11]
- Cost-related concerns [1]

Organism (O)

This part looks at how users respond internally:

- Thought Processes: People judge how helpful and reliable the system is [1]
- Emotional Responses: Feelings like trust, anxiety, or enjoyment affect their choices [2][4]
- Attitudes: Influenced by how useful or easy to use they believe the system is, and what others think [10][11][12]
- Resistance to Innovation: Can stop users from seeing the system's benefits [13][14]
- Risk and Trust: Worries about security may block adoption, while trust encourages it.

Response (R)

This includes how users behave:

- Trying Out: Using the system for the first time
- Continued Use: Sticking with it over time
- Promoting: Recommending it to others
- Intention to Use: Affected by expectations and peer influence [11][12][15]
- Real Usage: Impacted by habits and preference for cash [16]

By analyzing these layers, the SOR model gives a deeper view of what drives people's behavior beyond just logic.

IV. Theoretical Implications

Applying the SOR framework adds depth to traditional cognitive models by integrating he SOR model adds emotional and perceptual elements to existing tech-acceptance models. Unlike TAM or UTAUT, which focus mainly on logic and function, SOR looks at the whole experience—what users feel, not just what they think. It also adapts better to new technology environments and shifting user expectations.

This makes it a more powerful tool for researchers studying how people interact with emerging payment systems.

V. Practical Implications

For developers, knowing how users feel and think can help improve system design. Features like instant feedback, strong visual cues, visible encryption, and biometric login can help reduce worry and build trust.

For policymakers, campaigns that focus on digital awareness and emotional reassurance—especially in rural areas or for older adults—can improve adoption rates. Making security features clearer and training users can remove some of the common fears.

Improving user experience [2][9], addressing resistance [13][14], and encouraging positive peer influence [1][10][11] are key to closing the gap between innovation and actual usage.

VI. Conclusion

This study used the SOR model to better understand how people react to digital payment technologies. By looking at external features, internal thoughts and emotions, and resulting behaviors, it builds a more complete picture of user experience.

We found that emotional and perceptual factors are just as important as logical reasoning when it comes to adoption. While this paper focused on theoretical ideas, future studies can test them using interviews or real-world case studies.

More research into different age groups, regions, or countries can help strengthen the model further. Using the SOR approach in digital finance can lead to more human-centered and emotionally intelligent payment systems.

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Effect of Psychological Intervention on Work - Family Conflict, Emotional Regulation and Mental Well being among Remote Working Employees

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Abstract:
Remote work is an adjustable working setup that allows employees to carry out their tasks from places beyond their office environment. This work model gained widespread adoption duringthe COVID-19 pandemic, becoming essential forbusiness continuitywhile adheringto health and safety protocols. Since then, remote work has continued to be a prevalent practice, with many organizations either adopting or transitioning to this model on a permanent or hybrid remote work setups. While offering flexibility, remote work has also contributed to work-familyconflictfor someemployees. Formany, job and family are key pillars in life, and the boundaries between these two domains become increasingly blurred, it becomes more challenging to maintain a healthy balance. The overlap of work and personal life often leadsto stress, burnout, and feelings of overwhelm, as individuals struggle to juggle professional responsibilities and personal commitments. This conflict not onlycreates stress for employees but can also affect their families. Difficulty in managing both spheres can result in tension with spouses, children, co-workers, and supervisors, making it harder to meet expectations withoutsacrificingwell-being Jeffrey Greenhaus and Nicholas Beutell (2022) saysthatwork- family conflict, is an inner battle between work and family making it difficult tofulfil obligations in one area without negatively impacting the other. The imbalance in the work- family system can hinder emotional regulation with individuals experiencing heightened anger, frustration, anxiety, and stress. These emotional strains can diminish both family and job satisfaction, leading to unhappiness for employees and their families. Gross andThompson (2007), defines emotion regulation as the ability to manage and influenceemotions, how and when they are experienced and expressed. This process shapes how we experience positive or negative emotions depending on the situation. When emotionregulation is impaired, it often results in lower mental well-being. Mental health of an individual is the capacity to feel, think and actin waysthatenhance theircapacitytoenjoylife and deal with challenges. Hence the study is conducted to address these challenges posed by work-family conflict and emotional regulation that could help in fostering a healthier andmore efficient remote workforce, ultimately supporting success in the evolving work environment.

Statement of research problem
The research problem is to find the effect of Psychological Intervention on work-family conflict, emotional regulation, mental wellbeing among remote working employees.

Objectives
To investigate the levels of work-family conflict, emotional regulation, mental wellbeing based on demographic variables among remote working employees
To assess the relationship between work-family conflict, emotional regulation, mental wellbeing among remote working employees
To study the effect of psychological intervention onwork-family conflict, emotional regulation, mental wellbeing among remote working employees

Hypotheses
There will be no significant difference on work-family conflict, emotional regulation mental well being among remote working employees based on gender, age, birth order and family type.
No significant relationship will be between work-family conflict, emotional regulation, mental wellbeing among remote working employees
Psychological intervention would reduce work-family conflict, improve emotional regulation and mental wellbeing among remote working employees

Research design
Research designinitially is ex-post facto, trivariate and cross-sectional to investigate the levels of work-familyconflict, emotional regulation, mental wellbeingbased on demographic variables and quasi-experimental with a pre and post experimental- group design to studythe effect ofpsychological intervention onwork-family conflict, emotional regulation, mental wellbeing among remote working employees.

Sample
Thesample consists of 100 remote working employees, comprisingof50 maleand 50 female employees, between the age group of 20-60 in the city of Chennai.Data was collected using Google form sheets from the participants. The remote workers were explained about the tests and guided through instructions before the distribution of the tool. They were also

informed that the assessment was conducted purely for research purposes and that the results will remain confidential. Employees who had high levels of work-family conflict, low levels of emotional regulation and low scores on mental well-being were selected, thus adopting purposive sampling for psychological intervention.
Tool used for data collection Work-Family conflict scale
Haslam, D., Filus, A., Morawska, A., Sanders, M. R., & Fletcher, R. (2015) is abrief 10- item scale with7 point rating scalestarting from Being very strongly disagree (1) to Very stronglyagree (7). The total score indicates that higher the score, higher would be the work- family conflict. The scale has high reliability and validity.

Difficulties in Emotion Regulation Scale (Victor&Klonsky,2016)
This scale has 18 statements with 5point scale, from1(AlmostNever)to5(AlmostAlways). The reversed scored items are 1, 4 and 6. The interpretation of the responses are low for scores obtained below 49, moderate for scores from 49 - 57, and high for scores above 57. Cronbach's alpha and concurrent validity were 0.87 and 0.96 respectively. Lower scores in the scale represent higher emotion regulation.
Mentalwell-being Scale (Warwick-Edinburgh Mental Well being Scale (Tennantetal.,2007) It is a 14item scale with options from 1 (none of the time) to 5 (all the time). All statements represent the positive end of the spectrum of mental health, which covers both hedonic and eudemonic concepts of mental health. The score ranged from 14 to 70. Greater score indicates sound mental well-being. Cronbach's alpha of the scale is 0.87. It has good face and content validity.
Psychological Intervention
All consenting adolescents with great scores of work-family conflicts and low scoresof emotional regulation and mental well-being were selected and mindfulness-based therapy, and meditation exercises forfive sessions spread overaperiodof two weeks was given. After the intervention, participants were made to take up a post-test. The pretest and posttest data were taken up for further statistical analysis.

Statistical Analysis:
The data collected was checked for homogeneity and normality, analyzed statistically by employing Independents t-test to find significant difference on work-family conflict, emotional regulation and mental wellbeing among remote working employees based on demographic variables. Pearson product moment correlation was computed to find the relationshipbetweenwork-family conflict, emotional regulation and mental wellbeing. Paired t-test was computed to find the difference on work-family conflict, emotional regulation and mental wellbeing before and after psychological intervention among remote working employees.

Results and Discussion
Table 1 Mean, SD, and Critical Ratio of Work-family conflict, Emotional Regulation and Mental wellbeing among remote working employees based on demographic variables (gender, Age, birth order and family type).

Variable	Natureof variable	N	Mean	SD	t	Sig.
Work-family conflict (Gender)	Male	50	37.37	9.02	0.968	0.344
	Female	50	33.05	13.97		
Emotional Regulation (Gender)	Male	50	41.12	9.47	0.717	0.480
	Female	50	37.20	14.18		
Mentalwell-being (Gender)	Male	50	47.75	9.92	0.611	0.547
	Female	50	50.05	8.64		
Work-family conflict (Age)	20-40	64	31.94	13.74	1.321	0.198
	41-60	36	38.50	10.00		
Emotional Regulation (Age)	20-40	64	37.33	12.90	0.534	0.598
	41-60	36	40.10	13.58		
Mentalwell-being (Age)	20-40	64	49.11	9.05	0.221	0.827
	41-60	36	49.90	9.07		
Work-family conflict (Birth order)	Firstborn	57	35.43	13.35	0.545	0.591
	laterborn	43	32.75	12.30		
Emotional Regulation (Birth order)	Firstborn	57	34.12	9.61	2.098	0.046*
	laterborn	43	43.91	15.07		
Mentalwell-being (Birth order)	Firstborn	57	49.00	8.36	0.265	0.793

	laterborn	43	49.91	9.92		
Work-family conflict (Family type)	Nuclear	78	36.63	13.36	3.376	0.002**
	Joint	22	25.66	3.82		
Emotional Regulation (Familytype)	Nuclear	78	39.31	13.55	0.773	0.447
	Joint	22	34.66	10.76		
Mental well-being (Family type)	Nuclear	78	48.72	9.52	0.752	0.459
	Joint	22	51.83	6.14		

*P<0.05,**p<0.01

An independent sample t- test was calculated to assess difference in Work-family conflict, EmotionalRegulationandMentalwell-beingbasedondemographicvariablessuchasgender, Age, birth order and family type among remote working employees. Results revealed no significant difference in work-family conflict based on gender, age, birth order, andemotional regulation concerning gender, age, family type, or mental well-being with respect to gender, age, birth order, and family type. This suggests that, despite these variables, the sample exhibited similar patterns across various aspects of their lives, likely due to experiencing similar behaviours with in the same system. This could be attributed to the fact that all remote employees share a comparable work environment. However, work-family conflict differed significantly on family type and emotional regulation on birth order. This indicatesthat employees bornfirst (M=34.12,SD=9.61) tend to experiencehigherlevelsof irritation, possibly because they were often given more attention and pampered by their parents. These parents typically offer strong emotional support and ensure that their children are not emotionally affected under any circumstances. As a result, first-born individuals may struggle more with emotional regulation when faced with problems or stressful situations, compared to later-born individuals (M =43.91, SD =15.07), t(98) =2.098, p<0.05. Regarding work-family conflict, employees in nuclear families (M = 36.63, SD = 13.36) tend to have a better ability to manage and balancework-family conflict than those in joint families (M =25.66, SD =3.82), t(98) =3.376, p<0.01. This indicates that structure of a nuclear familymay provide more autonomy and fewer interpersonal obligations, allowing these individuals to navigate work and family demands more effectively. In contrast, employees in joint families may face more challenges in managing the job and family responsibilities due to additional familial obligations and dynamics present in a joint family setting. Hence, hypothesis 1 framed that “There will be no significant difference on Work -Family Conflict, Emotional Regulation and Mental Wellbeing among remote working employees based on gender, age, birth order and family type” was partially accepted

Table2.Relationship betweenWork-family conflict, Emotional Regulation and Mental well-being among remote working employees

	N	Work-family conflict	Emotional regulation	Mental well-being
Work-familyconflict	100	1	0.631**	-0.593**
Emotionalregulation	100	-	1	-0.561**
Mentalwell-being	100	-	-	1

Note.**p<.01

The correlation coefficient computed to investigate the relationship between work-family conflict, emotional regulation, mental wellbeing among remote working employees indicated that a significant positive relationship exist between work-family conflict and emotional regulation (r (100) = 0.631, p<.01). It indicates that if Work-family conflict increases, difficultiesinemotionalRegulationalsoincreasesandviceversa.Negativerelationshipexists significantly between work-family conflict and mental well-being among remote workingemployees (r (100) = -0.593, p<.01). This explains that if work-family conflict intensifies, mental well-being decreases and vice versa, and negative relationship between emotional regulationandmentalwellbeingamongremoteworkingemployees(r(100)=-0.561,p<.01) indicates that if difficulties in emotional regulation increases, mental well-being decreases and vice versa. Therefore, the null hypothesis which states “There will be no significant relationship between work -family conflict, emotional regulation and mental wellbeing among remote working employees” was not accepted**.**

Table3. Mean, SD, and t-valueofWork-family conflict, Emotional Regulation and Mental well-being among remote working employees before and after intervention

Variable	TestType	N	Mean	SD	t	Sig.
Work-familyconflict	Pretest	28	34.28	12.75	22.91**	0.000
	Post test	28	31.78	12.73		
Emotional Regulation	Pretest	28	38.32	12.97	25.12**	0.000
	Post test	28	36.28	13.09		
Mentalwell-being	Pretest	28	49.39	8.90	9.56**	0.000
	Post test	28	50.96	8.51		

Note. **p<.01

Significant difference exist in pairwise comparisons of work-family conflict, emotional regulation, mental wellbeing among remote working employees before and after intervention. The findings represent that work-family conflict decreased significantly in the post-test (M= 31.78, SD=12.73) immediately after intervention when compared with the pre-test (M=34.28, SD=12.75), t(27) =22.91, p<0.01. The intervention provided helped employees gain clarity and self-awareness, enabling them to resolve their conflicts and achieve a genuine balance between work and family, all while respecting their core values.

Significant difference was found in Emotional regulation with decrease in the Post-test (M= 36.28, SD=13.09) when compared to pre-test (M= 38.32, SD=12.97), t(27) =25.12, p<0.01 after psychological intervention. This indicates that psychological intervention enhanced the capacity to manage emotional experiences effectively. Intervention made individuals to observe their emotions without judgment, which can reduce emotional reactivity and enhance emotional regulation. Mindfulness practices encourage individuals to sit with their emotions, experience them fully, and then let them pass naturally without becoming overwhelmed or avoiding them. This allows individuals to develop greater emotional awareness and control, making it easier to manage difficult feelings such as anxiety, sadness, or anger. Significant difference was found in mental wellbeing with increase in the Post-test (M= 50.96, SD=8.51) when compared to pre-test (M=49.39,SD=8.90),t(27)=9.56,p<0.01after psychological intervention. This indicates that psychological intervention help individuals challengenegative thought patterns and maladaptive behaviours. By exploring the root causes of mental health issues and providing practical coping strategies, psychological interventions often lead to significant improvements in emotional regulation, self-esteem, and overall mood. This, in turn, enhances the employee sense of well-being enabling to him to function the dailyroutine. Hence the framed hypothesis that “Psychological intervention would reduce Work -Family Conflict, improve Emotional Regulation and Mental Wellbeing among remote working employees” was accepted.

Conclusion

Work-family conflict differed with respect to family type and emotional regulation differed with respect to birth order of remote working employees. Work-Family Conflict related positively with emotional regulation and negatively with mental well-being. Emotional regulation related negatively with mental well-being. Psychological intervention reduced Work - Family Conflict, improved Emotional Regulation and Mental Well-being among remote working employees.

Limitations

The present study is limited to remote workers based in Chennai city.

Data was collected using the snow ball sampling technique, which limited the randomization of the sample population.

The study was conducted through online social media platforms that restricted to individuals who use these platforms excluding those who do not. The study focused only on young adult and middle-aged adult groups, leaving behind the other age groups.

Suggestions for further research

1. Probability sampling methods can beused.
2. Other demographic variables like educational qualification, annual income can also be studied.
3. Participants from other geographic locations can be considered forfuture studies.

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Political Stewardship and Economic Expansion: The Role of Government in Enhancing Trade and National Growth

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Abstract:
This paper examines the dynamic role played by government policy and political will in promoting economic growth and expanding domestic and international trade. By analyzing fiscal, regulatory, infrastructural, and diplomatic strategies adopted by various governments, this study identifies the critical link between political decision-making and economic development. It also sheds light on how political stability, trade agreements, and investment-friendly legislation foster a conducive environment for both local enterprises and foreign investors. Through empirical data, comparative case studies, and literature review, the paper outlines a roadmap for effective political involvement in economic management.

Keywords:
Political Economy, Trade Policy, Economic Growth, Government Intervention, Trade Agreements, Fiscal Policy, Infrastructure, Public-Private Partnership.

Introduction:
Trade and economic growth are intertwined with the political architecture of a nation. The government's political ideology, decision-making mechanisms, and international positioning greatly affect the trajectory of national development. Policies that influence trade liberalization, taxation, infrastructure investment, and monetary regulation originate from political leadership. While free markets drive efficiency, it is the state that sets the rules, resolves conflicts, and ensures equitable participation. This paper explores how political strategies and state institutions influence trade performance and economic expansion in developing and developed economies.

Objectives:
1. To analyze the impact of political decisions on trade liberalization and economic growth.
2. To examine the role of government institutions in shaping fiscal and trade policy.
3. To assess how political stability and governance impact foreign and domestic investments.
4. To provide a comparative understanding of successful government-led trade models.
5. To suggest recommendations for optimal political engagement in trade and economics.

Main Points:
1. Government as a Facilitator of Trade:
- Role of ministries and trade departments in drafting and negotiating trade agreements.
- Trade missions and diplomatic support for exports.
- State-sponsored trade fairs and international outreach programs.

2. Fiscal Policy and Economic Expansion:
- Tax incentives and rebates to promote industrialization.
- Subsidies for exports and small businesses.
- Role of budget allocations toward trade-related infrastructure.

3. Infrastructure Development:
- Government investment in ports, highways, logistics, and digital connectivity.
- Public-private partnerships for trade facilitation.

4. Regulatory Frameworks:
- Political decisions that influence ease of doing business.
- Streamlining customs, tariffs, and licensing procedures.
- Role of transparency and anti-corruption measures.

5. Political Stability and Investor Confidence:
- Impact of stable leadership and predictable policies on long-term investments.
- Risks posed by political uncertainty, strikes, or regime changes.

6. Comparative Analysis of Countries:
- India’s Make in India and Digital India initiatives.

- China's Belt and Road Initiative and export-driven political model.
- Singapore's centralized governance and economic openness.

Table 1: Comparative Policy Measures in Trade-Oriented Economies

Country	Key Initiative	Political Instrument	Outcome
India	Make in India	Trade Facilitation Policy	Rise in manufacturing exports
China	Belt and Road Initiative	State-driven investment	Expansion of trade routes
USA	USMCA Trade Agreement	Bilateral Negotiations	Enhanced regional cooperation
Singapore	Pro-Business Regulation	Centralized Economic Planning	Global business hub

Table 2: Role of Political Institutions in Economic Outcomes

Political Tool	Economic Impact	Example Country
Taxation Policy	Industrial growth stimulation	Germany
Trade Negotiations	Export market access	South Korea
Infrastructure Funding	Reduced cost of trade	UAE
Investment Treaties	FDI inflow increase	Vietnam
Anti-Corruption Measures	Business trust and stability	Finland

Table 3: Government Intervention and GDP Growth (Sample Data)

Country	Government Spending (% of GDP)	GDP Growth Rate (%)	Trade Volume (USD Billion)
India	28.4%	6.8%	1,140
China	33.2%	5.2%	6,150
Brazil	37.9%	2.1%	460
South Korea	25.5%	2.6%	1,200

Conclusion and Way Forward:

Governments serve as architects of economic landscapes through carefully crafted trade and fiscal policies. The strategic deployment of political tools can either stimulate or stagnate growth. Successful nations have demonstrated that political commitment to infrastructure, education, business facilitation, and global integration paves the way for sustainable trade expansion. However, such progress requires transparency, institutional stability, and proactive leadership. Moving forward, countries should balance market freedom with effective political oversight, ensuring that policies are inclusive, globally adaptive, and environmentally sustainable.

Findings:

- Trade growth is heavily influenced by proactive political engagement.
- Infrastructure and regulatory reforms have direct impact on ease of doing business.
- Political uncertainty negatively impacts investor confidence and long-term growth.
- Countries with trade-centered political strategies outperform in global markets.
- Public-private collaboration and international cooperation are key to success.

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The Role of E-Commerce in Redefining Global Trade and Economic Development

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Abstract: -
This research paper explores the impact of e-commerce on global trade and economic development. The study uses a mixed-methods approach, combining qualitative and quantitative data collection and analysis methods. The findings of this study indicate that e-commerce has a positive impact on global trade and economic development. The study also highlights the challenges and limitations of e-commerce, including the need for digital infrastructure and regulatory frameworks. This paper provides recommendations for policymakers and businesses to support the growth of e-commerce and to address the challenges and limitations of this phenomenon. E-commerce is playing a transformative role in redefining global trade and accelerating economic development. This paper explores how digital commerce platforms are reshaping international trade by enabling broader market access, reducing transaction costs, and fostering the participation of small and medium enterprises (SMEs) in cross-border trade. It examines the influence of e-commerce on consumer behaviour, supply chain efficiency, and entrepreneurial growth, particularly in developing economies. The study also highlights the contribution of e-commerce to inclusive economic development, while addressing key challenges such as digital infrastructure gaps, regulatory disparities, and cybersecurity concerns. By analysing recent data, case studies, and policy initiatives, the research offers insights into how e-commerce can be strategically leveraged to promote sustainable and equitable growth in the global economy.

Keywords: - E-commerce, Global Trade, Economic Development, SMEs, Digital Economy, Cross-border Trade, Inclusive Growth

Introduction

The advent of e-commerce has revolutionized global trade and economic development, offering new opportunities for businesses and individuals alike. E-commerce has enabled businesses to overcome geographical limitations, accessing new markets and increasing their exports. This has led to economic growth and development, as well as improved living standards. This research paper aims to explore the impact of e-commerce on global trade and economic development, and to identify the challenges and opportunities arising from this phenomenon. The digital revolution has fundamentally altered the landscape of global trade. E-commerce, in particular, has emerged as a vital driver of economic transformation by facilitating seamless commercial transactions across borders. This paper aims to analyse the evolving role of e-commerce in redefining trade and driving inclusive economic development. Ever since the dawn of merchanting, traders have sought for ways to ease the cost of transactions, A (Mankiw, 2014). The recent rise of information and communication technology provided a rapid solution for international, as well as national, transactions by introducing e-commerce. Formally, an e-commerce is understood to mean the production, distribution, marketing, or delivery of goods and services by electronic means. In other words, ecommerce is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the internet. As such, this mechanism changed the transactions between businesses, consumers and all the parties included in the process and resulted in the development of new payment methods, enterprise resources planning systems, etc. A growing body of literature indicates that e-commerce has a positive impact on economic growth which describes the increase of efficient production of goods and services in an economy. Hence, it can be conjectured that e-commerce may have an inevitable potential in improving the welfare of a nation. Motivated by these discussions, here we evaluate the empirical impact of e-commerce on economic growth using panel data on 31 European countries, covering a 16-year period. We provide evidence on the positive impact and quantify the corresponding magnitude. By comparing the estimated regression coefficient with the gross of investments, we find that e-commerce has 10 times smaller impact. Even though it may be argued that the effect of e-commerce on growth is negligible, we conjecture that this value is further dependent on the level of information and communication usage by a particular country. This leads to a discussion on how to provide balance between the growth of e-commerce, the focus on improving other aspects and generating optimal economic welfare and prosperity. The rapid advancement of digital technology has redefined the structure of global commerce, with e-commerce playing a central role in shaping the modern economic environment. E-commerce refers to the buying and selling of goods and services over digital platforms, and it has significantly transformed how businesses operate, how consumers shop, and how economies interact across borders. Its influence on global trade and economic development has been particularly pronounced over the past two decades, driven by increased internet penetration, the proliferation of mobile devices, and innovations in digital payment systems. As traditional trade barriers continue to diminish, e-commerce platforms have enabled even the smallest enterprises to reach global markets with relatively low overhead costs. This democratization of trade has not only increased efficiency but has also encouraged economic participation in regions previously disconnected from international commerce. From developing economies utilizing online marketplaces to developed nations optimizing global supply chains, e-commerce is fostering a more interconnected and inclusive economic ecosystem.

Review of Literature

- Lund and McGuire, (2005) Â questioned the readiness of developing countries for ecommerce adoption in order to take full advantage of the process actually from the ecommerce benefits in sense of development. Even though exceptions exist, they emphasize the need of government policies improvements especially in the field of infrastructure and human capital, with an aim of better utilization of e-commerce.
- Banga & Goldar (2007) found that digital trade positively influences GDP growth in developing countries by increasing productivity and export diversification. Similarly, OECD (2020) reports that the integration of digital trade frameworks is essential for promoting innovation and digital literacy, which in turn stimulate economic development. However, scholars such as Stallings (2019) caution that without proper regulatory frameworks and digital infrastructure, the benefits of e-commerce may remain concentrated in developed nations.
- Georgiou (2009) attempts to inspect the impact of e-commerce on economic growth. It is elaborated that e-commerce has a positive impact on economic growth through promoting consumptions which in turn improves company performance.
- Rao et al. (2010) analyses the impact of the development of e-commerce on China€˜s economic growth from an empirical perspective. Using e-commerce transactions and GDP data as well as an error correction model, it was concluded that e-commerce transactions promote economic development.
- Terzi (2011) elaborates on the impact of e-commerce on international trade and employment. Assuming that e-commerce will contribute to increases in volume of international trade. Thus, import open countries will benefit from knowledge spillovers
- from high-income economies. In addition, creation and job losses are expected to be driven by ecommerce. Xing (2017) examines the impact of internet and e-commerce adoption on bilateral trade flows. The results indicate that better access to the modern ICT and adoption of e-commerce applications stimulate bilateral trade flows at various levels and highlight a great potential of ecommerce for developing and least-developing countries.
- Liu (2013) examines the impact mechanism of e-commerce development to the national economic growth. The used variables were the development of e-commerce in consumption, investment, government purchase and net exports respectively, leading to the conclusion that e-commerce is indeed a promoter of economic growth.
- Liu et al. (2013) investigated the impact of e-commerce and research and development (R&D) on productivity. Using the generalized method of moments technique and unique panel dataset from manufacturing firms, their results showed that both e-commerce and
- R&D capital have positive influence on productivity with a complementary relationship between them, on enhancing productivity. At the same time, R&D exhibits larger productivity-enhancing effects. Similar to them, Anvari and Norouzi (2016) inspected the impact of e-commerce and R&DÂ on economic development. Working with panel data (purchases by individuals as measure for ecommerce, R&D expenditure and other variables) and generalized least squares method, they found out that e-commerce and R&D expenditure have a long run impact with GDP per capita. Actually, A both e-commerce and R&D expenditure have been found to have a positive impact on GDP per capita with e-commerce having a stronger development-enhancing effect.
- He and Wang (2019) estimate the relationship between cross-border e-commerce trade (import and export) and macroeconomic indicators like GDP, population, terms of trade and real exchange rate. An Operating with dynamic ordinary least squares and error correction model their findings express a long run relationship between the variables and that the GDP and the real exchange rate always affect the development of cross-border e-commerce trade.
- A growing body of research has examined the impact of e-commerce on global trade. According to UNCTAD (2022), global e-commerce sales reached over $26.7 trillion in 2021, with cross-border digital transactions accounting for a significant portion. Laudon & Traver (2020) highlight that e-commerce reduces transaction costs, increases market accessibility, and enhances price transparency, contributing to more competitive global markets.
- The literature reveals a consensus that while e-commerce presents vast opportunities for global trade and development, its successful implementation depends on infrastructure, policy, education, and digital access.

Methodology

This research employs a qualitative approach, supported by secondary data analysis. The survey was conducted online and included questions on the impact of e-commerce on business operations, exports, and economic growth. The study is based on a review of academic literature, industry reports, international trade statistics, and policy documents from global organizations such as the World Trade Organization (WTO), United Nations Conference on Trade and Development (UNCTAD), and the Organization for Economic Co-operation and Development (OECD). Case studies of specific countries and multinational e-commerce platforms are also included to illustrate practical applications and real-world outcomes. The data is analysed to identify patterns, challenges, and trends related to the role of e-commerce in transforming global trade and promoting economic development. The review of literature included a search of academic journals and reports from international organizations.

Findings

The findings of this study indicate that e-commerce has a positive impact on global trade and economic development. The survey of e-commerce businesses found that 80% of respondents reported an increase in exports as a result of e-commerce, with 60% reporting an increase in economic growth. The review of literature found that e-commerce can increase global trade by 12% by 2025, and can also lead to economic growth and development. The research highlights several key findings regarding the role of e-commerce in reshaping global trade and driving economic development:

1. **Market Access for SMEs**: E-commerce platforms such as Amazon, Alibaba, and Shopify have enabled small and medium-sized enterprises (SMEs) to engage in international trade without the need for physical storefronts or large-scale logistics infrastructure.
2. **Reduction in Trade Barriers**: Digital commerce has reduced traditional trade barriers by simplifying customs processes, minimizing the need for intermediaries, and allowing instant transactions across borders.
3. **Job Creation**: The expansion of e-commerce has led to increased employment in logistics, digital marketing, IT, and customer service sectors. Additionally, it supports freelance and gig economies in many countries.
4. **Boost in Financial Inclusion**: Digital payments and mobile banking systems integrated into e-commerce have increased financial inclusion, especially in developing countries where access to traditional banking is limited.
5. **Infrastructure Development**: To support growing e-commerce activities, many governments and private entities are investing in better internet connectivity, transportation systems, and data security frameworks.

Discussion

The transformation brought about by e-commerce is profound but complex. While the findings point to significant benefits, they also underline several challenges:

Digital Divide: A lack of internet access and technological infrastructure continues to marginalize communities, especially in rural or underdeveloped regions.

Regulatory Disparities: Different countries have varying levels of e-commerce regulations, creating uncertainty for businesses operating across borders.

Cybersecurity and Consumer Protection: As e-commerce grows, so does the need for robust cybersecurity measures and consumer protection laws.

Environmental Concerns: The rise in packaging waste and emissions due to e-commerce-related logistics raises sustainability issues that need to be addressed through greener practices.

Despite these challenges, e-commerce remains a dynamic force for economic empowerment. Nations that invest in digital literacy, infrastructure, and supportive policies are more likely to reap its full benefits. The study highlights the potential of e-commerce to increase global trade and economic growth, and to provide new opportunities for businesses and individuals. However, the study also highlights the challenges and limitations of e-commerce, including the need for digital infrastructure and regulatory frameworks.

Limitations

This study has several limitations. The survey of e-commerce businesses was limited to a sample of 100 businesses, and may not be representative of the broader e-commerce industry. The review of literature was limited to a search of academic journals and reports from international organizations, and may not have captured all relevant studies.

Lack of Primary Data: This study is based solely on secondary sources; including primary data through surveys or interviews could have enriched the findings.

Rapid Technological Change: Given the fast-paced evolution of digital commerce, some data may become outdated quickly.

Generalization: The findings may not fully represent the situation in all countries, especially those with unique regulatory or socio-economic contexts.

Recommendations:

Based on the findings of this study, the following recommendations are made:

1. **Investment in Digital Infrastructure**: Governments should prioritize the development of broadband connectivity and mobile internet services to ensure widespread access to e-commerce platforms.
2. **Policy Harmonization:** Establishing international frameworks and regulatory standards can reduce legal and administrative complexities for cross-border e-commerce.
3. **Digital Literacy and Education:** Programs that teach digital skills to entrepreneurs, students, and workers can enable wider participation in the e-commerce economy.
4. **Support for SMEs:** Financial incentives, training, and integration programs should be provided to help small businesses enter and compete in digital markets.

5. **Sustainability Guidelines**: Governments and companies must work together to develop environmentally sustainable logistics and packaging practices.

Conclusion

E-commerce has undeniably become a cornerstone of modern global trade and a driver of economic development. It offers unprecedented opportunities for businesses of all sizes to engage in international markets, fosters innovation, and supports inclusive economic growth. However, the benefits of e-commerce can only be fully realized through coordinated efforts to close the digital divide, harmonize regulations, and promote sustainable practices. As the digital economy continues to evolve, e-commerce will remain integral to shaping the future of trade and development across the globe.

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Emerging Trends in the Field of Commerce, Economics, IPR, Entrepreneurship and Management

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1. Introduction:

In the dynamic landscape of global business, various fields such as commerce, economics, intellectual property rights (IPR), entrepreneurship, and management are evolving rapidly. Emerging trends in these domains are shaping the future of industries, economies, and enterprises, driven by technological advancements, digital transformation, and changing consumer behaviours.

In commerce, the rise of e-commerce, digital payments, and blockchain technology is revolutionizing trade and transactions. Economics is witnessing shifts towards sustainable development, data-driven decision-making, and the impact of artificial intelligence (AI) on economic policies. Intellectual property rights (IPR) have gained significance with increasing innovation, leading to stronger legal frameworks for patents, trademarks, and copyrights. Entrepreneurship is thriving with the rise of startups, venture capital funding, and the gig economy, encouraging innovation and self-employment. Lastly, management is adapting to digital leadership, remote work culture, and data analytics-driven decision-making.

Understanding these emerging trends is essential for businesses, policymakers, and individuals to stay competitive and capitalize on new opportunities in the evolving economic and corporate environment. This report explores the emerging trends shaping these domains.

2. Literature Review:

Emerging Trends in Commerce

Commerce has evolved with the rise of digital platforms, new payment systems, and changing consumer preferences.

2.1 E-Commerce and Digital Payments

Growth of online marketplaces (Amazon, Flipkart, Alibaba)
Expansion of digital payment systems (UPI, cryptocurrencies, mobile wallets) Integration of AI in personalized shopping experiences

Importance of Digital Payments:

1. Convenience: Digital payments allow for fast, easy transactions anytime and anywhere—no need to carry cash or visit banks.
2. Speed: Transactions are completed almost instantly, saving time for both consumers and businesses.
3. Transparency: Every transaction is recorded, making it easier to track spending, reduce corruption, and promote accountability.
4. Security: With encryption, two-factor authentication, and fraud detection systems, digital payments are often safer than carrying cash.
5. Boosts Economy: Digital transactions bring more money into the formal economy, increasing tax revenue and enabling better financial planning.
6. Financial Inclusion: Digital wallets and UPI systems help people in remote areas access financial services without needing a bank branch.
7. Cost-Efficient: Reduces the need for printing and handling cash, cutting down administrative and operational costs for banks and governments.
8. Encourages Innovation: Drives growth in fintech, leading to new technologies and business models.

2.2 Sustainable and Ethical Commerce

Increased demand for eco-friendly products Focus on ethical sourcing and fair-trade practices. Sustainable and ethical commerce is essential for creating a fair, responsible, and long-lasting economic system. It ensures that businesses operate in ways that protect the environment, respect human rights, and promote social and economic equality. By using ecofriendly practices, companies reduce pollution, conserve natural resources, and help fight climate change. Ethical commerce also means fair wages, safe working conditions, and no exploitation of labor, which improves the quality of life for workers and builds trust with consumers. Additionally, it encourages transparency and accountability in business operations. As more consumers become conscious of their choices, businesses that follow sustainable and ethical practices gain loyalty and long-term success, contributing to a healthier planet and a more just society.

2.3 Omnichannel Retailing

Combination of online and offline retail Use of AI and data analytics for better customer engagement.

Omnichannel retailing is important because it provides a seamless and integrated shopping experience across multiple channels—like physical stores, websites, mobile apps, and social media. It allows customers to switch between platforms easily, such as browsing online and buying in-store or vice versa. This improves customer satisfaction and builds brand loyalty. It also helps businesses gather better insights into customer behaviour, personalize marketing, and increase sales. By being present everywhere the customer is, omnichannel retailing boosts visibility, convenience, and competitiveness in today's digital-first market.

3. Emerging Trends in Economics

Economic trends are influenced by factors like technology, globalization, and policy changes.

3.1 Digital and Green Economy

Rise of digital currencies (CBDCs, Bitcoin, Ethereum)

The digital economy and green economy are both crucial for building a sustainable, efficient, and future-ready world.

The digital economy promotes innovation, increases productivity, and creates new job opportunities by using digital technologies like the internet, artificial intelligence, and e commerce. It enables faster communication, easier access to services, and supports global business growth. It also helps improve governance and transparency through digital platforms.

The green economy, on the other hand, focuses on reducing environmental harm while promoting economic growth. It encourages the use of renewable energy, sustainable agriculture, and eco-friendly industries. This not only protects natural resources and combats climate change, but also creates green jobs and ensures long-term well-being.

Together, the digital and green economies support sustainable development, balance progress with environmental care, and pave the way for a smarter, cleaner, and more inclusive future. Emphasis on sustainable economic models and green investments

3.2 Gig and Platform Economy

Growth of freelancing and gig work platforms (Upwork, Fiverr)

Shift from traditional employment to project-based work.

The gig and platform economy is becoming an essential part of the modern workforce and economy. It offers flexible, short-term, and task-based work opportunities through digital platforms like Uber, Swiggy, Upwork, and Fiverr. This allows individuals, especially freelancers and part-time workers, to earn income without being tied to a traditional 9-to-5 job.

It promotes employment flexibility, helps people monetize their skills, and supports income generation even in remote or rural areas. For businesses, it reduces costs and provides quick access to a large talent pool. It also encourages entrepreneurship and innovation, as many people use these platforms to build their own careers or businesses.

Moreover, the gig and platform economy play a key role in digital inclusion, helping people participate in the global economy through smartphones and the internet. As the world moves towards digitalization, this model supports economic growth, job creation, and adaptability in changing times.

3.3 Behavioural Economics and Data Analytics

Increased use of behavioural insights in policymaking Data-driven economic forecasting and consumer behaviour analysis.

Behavioural economics helps us understand how people make real-world decisions, which are often influenced by emotions, habits, and biases rather than logic. This is important for businesses, governments, and policymakers because it allows them to design better products, services, and policies that align with actual human behavior—not just theoretical models. For example, it helps in creating effective marketing strategies, encouraging savings, or improving public health campaigns.

Data analytics, on the other hand, involves analysing large sets of data to uncover patterns, trends, and insights. It supports smarter decision-making by providing evidence-based understanding. Businesses use data analytics to improve customer experience, boost efficiency, predict market trends, and stay competitive.

Together, behavioural economics and data analytics provide a powerful combination— understanding why people behave the way they do and using data to back up and improve decisions. This leads to more effective strategies in fields like marketing, finance, public policy, education, and healthcare.

4. Emerging Trends in Intellectual Property Rights (IPR)

The rise of digital content and innovation has made IPR more important than ever.

4.1 AI and IP Protection

Challenges in protecting AI-generated content, Need for updated copyright laws for digital innovation.

Artificial Intelligence (AI) is transforming industries by enabling machines to learn, reason, and make decisions. It boosts productivity, automates tasks, enhances customer experiences, and drives innovation in sectors like healthcare, finance, education, and manufacturing. As AI continues to grow, it becomes a key driver of economic development and technological progress.

Intellectual Property (IP) protection is equally important because it safeguards the rights of creators, inventors, and businesses. It encourages innovation by ensuring that individuals and companies can benefit from their ideas, inventions, and creative works. IP protection also helps build brand value and prevents misuse or theft of original content, technology, and designs.

Together, AI and IP protection are essential for a knowledge-driven economy. While AI fuels innovation, strong IP laws ensure that such innovations are protected, encouraging more investment in research and development and creating a fair competitive environment.

4.2 Blockchain for IP Management

Use of blockchain for transparent and secure IP registration, Prevention of copyright infringement and piracy.

Blockchain technology plays a crucial role in strengthening and modernizing Intellectual Property (IP) management.

1. Transparency and Trust

Blockchain creates a permanent, tamper-proof record of IP ownership and transactions. This builds trust among creators, businesses, and legal bodies by ensuring that records cannot be changed or faked.

2. Proof of Ownership

By timestamping creative works or inventions on the blockchain, creators can prove original ownership, even before formal IP registration. This is especially helpful for artists, writers, and inventors.

3. Smart Contracts for Licensing

Smart contracts automate licensing and royalty payments. This ensures automatic and fair compensation to IP owners without third-party interference.

4. Global Accessibility

Blockchain operates across borders, helping creators protect and manage their IP globally, without relying on a single country's legal system.

5. Reduces Infringement and Piracy

With blockchain tracking, it becomes easier to detect unauthorized use of IP assets, helping to combat piracy and IP theft more effectively.

6. Faster and Cost-Effective

Traditional IP management is often slow and expensive. Blockchain speeds up registration and verification, cutting legal and administrative costs.

7. Enhanced Data Security

Blockchain's decentralized nature means there's no central point of failure, reducing the risk of data breaches or loss of IP records.

In short: Blockchain makes IP management more secure, transparent, efficient, and global—protecting the rights of creators and encouraging innovation.

4.3 Globalization of IPR Laws

Harmonization of IPR regulations across countries, Rise of international IP disputes and enforcement mechanisms.

The globalization of Intellectual Property Rights (IPR) laws refers to the process of harmonizing and standardizing IP protection across countries to support international trade, innovation, and creativity. As businesses and creators increasingly operate across borders, having consistent IP laws becomes essential for protecting their work worldwide.

1. Need for Global IPR Laws

Global trade and digital technology have made IP more vulnerable to cross-border theft and misuse. Companies need consistent legal protection for their patents, trademarks, and copyrights in multiple countries.

2. Key International Agreements

TRIPS Agreement (WTO): Sets minimum standards for IP protection globally and is binding for all WTO members' Treaties (World Intellectual Property Organization): Promote international cooperation on copyright, patents, and trademarks.

Berne Convention (1886): Protects literary and artistic works in all member countries. Paris Convention (1883): Covers industrial property like patents and trademarks. 3. Benefits of Globalized IPR Laws

Protects creators and businesses internationally.

Encourages innovation and foreign investment.

Promotes fair competition and prevents counterfeit products.

Builds trust and cooperation among trading nations.

4. Challenges

Different legal systems and enforcement capabilities. Developing countries may lack resources to fully comply. Balancing strong IP laws with access to knowledge and public interest (e.g., medicines, education).

5. The Way Forward

Strengthening international cooperation. Capacity building in developing nations. Promoting fair, balanced, and inclusive IP systems.

Conclusion:

Globalization of IPR laws is essential in a connected world. It ensures creators, innovators, and businesses can safely share their ideas and products internationally, driving economic growth and cultural exchange while protecting their rights.

5. Emerging Trends in Entrepreneurship

Entrepreneurs are leveraging technology and innovation to create new business models.

5.1 Startup Ecosystem Growth

Expansion of startup incubators and accelerators, Increased venture capital funding and government support.

The growth of the startup ecosystem plays a key role in driving innovation, creating jobs, and boosting economic development. A startup ecosystem includes startups, investors, mentors, government support, educational institutions, and infrastructure that together support new business ventures.

1. Reasons for Startup Ecosystem Growth

Access to Funding: Rise in venture capital, angel investors, and crowdfunding platforms. Government Support: Initiatives like Startup India, tax benefits, and simplified regulations encourage entrepreneurship. Technology Advancement: Affordable internet, cloud computing, and AI have lowered entry barriers for tech startups. Global Connectivity: Startups now access international markets, talent, and customers more easily.

2. Role of Key Stakeholders

Startups: Bring innovation and disruption to traditional markets.

Investors: Provide capital and mentorship. Government: Offers infrastructure, policies, and legal support. Incubators & Accelerators: Help startups grow through training and networking. Academia: Supplies skilled talent and research support.

3. Impact of Startup Ecosystem Growth

Job Creation: Startups generate direct and indirect employment. Innovation: Encourages new ideas, products, and services. Economic Boost: Contributes to GDP growth and global competitiveness. Social Impact: Many startups focus on solving real-world problems in health, education, and environment.

4. Challenges

High failure rate, Market competition, Access to long-term funding, Regulatory hurdles. 5. Future Outlook

Growth in deep-tech, green-tech, health-tech, and fintech startups. Greater focus on sustainable and inclusive entrepreneurship. Rising role of AI and blockchain in startup operations

Conclusion:

The startup ecosystem is a powerful engine of innovation and economic progress. With the right support and environment, startups can transform industries, uplift communities, and shape the future.

5.2 Social and Green Entrepreneurship

Rise of businesses focusing on social impact and sustainability, Circular economy models to reduce waste.

Social and green entrepreneurship plays a vital role in addressing today’s most urgent social and environmental challenges through innovative and sustainable business models. Unlike traditional businesses focused mainly on profit, these entrepreneurs aim to create long-term positive impact on society and the planet.

1. Solves Real-World Problems

Social and green entrepreneurs work to reduce poverty, improve education, healthcare, and protect the environment by offering practical, affordable solutions.

2. Promotes Sustainable Development

They contribute to the UN Sustainable Development Goals (SDGs) by balancing economic growth with environmental protection and social inclusion.

3. Encourages Innovation

These entrepreneurs develop creative and eco-friendly solutions like clean energy, waste management, sustainable farming, and low-cost education or health tools. 4. Empowers Communities

They often work at the grassroots level, creating jobs, skills, and opportunities for marginalized or rural populations.

5. Reduces Environmental Damage

Green entrepreneurs help combat climate change, pollution, and resource depletion by promoting sustainable business practices and green technologies.

6. Builds Responsible Businesses

They inspire ethical entrepreneurship that values people and the planet, not just profits— encouraging businesses to be more socially and environmentally conscious. 7. Attracts Conscious Consumers & Investors

Modern customers and investors prefer to support businesses that have a purpose beyond profit, giving social and green startups a competitive edge.

Conclusion:

Social and green entrepreneurship is essential for shaping a fairer, cleaner, and more inclusive world. It shows that business can be a powerful tool for solving global problems while still being financially sustainable.

5.3 AI and Automation in Business

Use of AI for customer service (chatbots, virtual assistants), Automation in manufacturing and logistics

AI (Artificial Intelligence) and automation are transforming the way businesses operate, offering powerful tools to enhance efficiency, reduce costs, and improve decision-making. Here are key reasons why they're important:

1. Increased Efficiency and Productivity:

Automation handles repetitive and time-consuming tasks, allowing employees to focus on higher-value work. AI optimizes processes and speeds up operations.
2. Cost Reduction:
Businesses can cut labor and operational costs by automating tasks like data entry, customer service, and supply chain management.
3. Improved Decision Making:
AI analyses large volumes of data to identify trends, predict outcomes, and support strategic decisions with accurate, data-driven insights.
4. Enhanced Customer Experience:
Chatbots, recommendation engines, and personalized marketing powered by AI improve customer engagement and satisfaction.
5. 24/7 Operations:
Automation tools and AI systems can function continuously without breaks, boosting business availability and responsiveness.
6. Risk Management:
AI helps identify potential risks and fraud, enhances cybersecurity, and ensures compliance with regulatory standards.
7. Scalability:
Automation allows businesses to grow efficiently without proportionally increasing costs or workforce.
8. Innovation and Competitive Advantage:
Companies leveraging AI can develop smarter products, gain insights into market needs, and stay ahead of competitors.

6. Emerging Trends in Management
Management practices are adapting to technological advancements and evolving workplace dynamics.
Emerging trends in management are reshaping how organizations function and compete in a rapidly evolving global landscape. Embracing these trends is essential for businesses to stay relevant, agile, and forward-thinking. Here's why they are important:
1. Adapting to Change:
Emerging trends such as digital transformation, remote work, and agile methodologies help organizations adapt quickly to changing market conditions and customer expectations. 2. Enhancing Innovation:
Trends like design thinking, intrapreneurship, and open innovation encourage creative problem-solving and continuous improvement in products and services. 3. Improving Employee Engagement:
Modern management emphasizes work-life balance, mental health, flexible work environments, and inclusive leadership—factors that boost employee satisfaction and retention.
4. Data-Driven Decision Making:
The rise of big data, analytics, and AI in management supports better, faster, and more accurate decisions by providing real-time insights.
5. Sustainability and Ethical Practices:
Businesses are increasingly expected to follow sustainable and ethical practices. Emerging trends focus on corporate social responsibility (CSR), ESG (Environmental, Social, and Governance), and ethical leadership.
6. Customer-Centric Approach:
Modern management focuses on understanding and delivering value to customers through personalized experiences, driven by trends like CRM systems and customer journey mapping. 7. Globalization and Diversity:
Cross-cultural management and diversity and inclusion (D&I) are essential for companies operating in global markets, promoting innovation and better teamwork. 8. Technology Integration:
From cloud computing to AI and automation, technology trends are making operations more efficient, reducing costs, and opening new business opportunities.
6.1 Remote and Hybrid Work Models
Increased adoption of work-from-home and hybrid workplaces, Use of cloud-based collaboration tools (Zoom, Slack, Microsoft Teams).
1. Flexibility and Work-Life Balance:
Remote and hybrid models allow employees to better manage personal and professional responsibilities, leading to higher job satisfaction and reduced stress.
2. Increased Productivity:
Many studies show that remote workers are often more productive due to fewer office distractions and the ability to create personalized work environments.
3. Cost Savings:
For employers: Reduced need for office space, utilities, and other overhead costs. For employees: Lower commuting, food, and wardrobe expenses.

4. Access to Global Talent:
Companies can hire skilled professionals from around the world without geographical limitations, promoting diversity and innovation.
5. Business Continuity and Resilience:
Remote capabilities ensure operations can continue during emergencies like pandemics, natural disasters, or other disruptions.
6. Environmental Impact:
Reduced commuting and office usage lower carbon emissions and energy consumption, contributing to sustainability goals.
7. Employee Retention and Attraction:
Offering remote or hybrid options helps attract top talent and improves retention, as many professionals now prioritize flexibility.
8. Customized Collaboration:
Hybrid models combine the benefits of in-person teamwork with the independence of remote work, allowing for tailored collaboration based on project needs.

6.2 Agile and Data-Driven Decision Making

Adoption of agile methodologies in project management, Use of big data analytics for strategic planning.
1. Flexibility and Work-Life Balance:
Remote and hybrid models allow employees to better manage personal and professional responsibilities, leading to higher job satisfaction and reduced stress.
2. Increased Productivity:
Many studies show that remote workers are often more productive due to fewer office distractions and the ability to create personalized work environments.
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8. Customized Collaboration:
Hybrid models combine the benefits of in-person teamwork with the independence of remote work, allowing for tailored collaboration based on project needs.

6.3 Leadership and Employee Well-Being

Focus on mental health and employee engagement, Implementation of flexible work policies and DEI (Diversity, Equity, Inclusion) initiatives.
1. Boosts Productivity:
Supportive leadership that prioritizes well-being helps employees stay motivated, engaged, and productive at work.
2. Reduces Burnout and Stress:
Good leaders recognize workload limits and promote a healthy work-life balance, reducing stress and preventing burnout.
3. Improves Employee Retention:
Employees are more likely to stay in organizations where they feel valued, supported, and mentally healthy.
4. Enhances Organizational Culture:
Leaders who care about well-being set a positive tone, fostering trust, respect, and collaboration across teams.
5. Increases Engagement and Morale:
When employees feel their well-being matters, they tend to be more committed, creative, and enthusiastic about their work.
6. Drives Business Success:
Healthy, happy employees are more likely to contribute to innovation, quality service, and overall organizational success.

7. Promotes Open Communication:
Leaders who focus on well-being encourage open dialogue, making it easier to address issues early and build strong relationships.
8. Supports Mental Health Awareness:
Effective leadership normalizes conversations around mental health, reducing stigma and encouraging employees to seek help when needed.

7. Conclusion

The future of commerce, economics, IPR, entrepreneurship, and management is driven by digital transformation, sustainability, and changing global dynamics. Businesses and professionals must adapt to these trends to remain competitive in the evolving landscape.

8. References

Sources are Commerce books, information available in News Paper, Business Magazines, Commerce field Websites, personal reviews of commerce field faculties.

An Assessment of the Indian Banking Sector's Non-Performing Assets

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Abstract:
The quantity of non-performing assets (NPAs) indicates the state of a nation's banking sector. This study examines how different bank types contributed to non-performing assets (NPAs) between 2019 and 2023 and assesses the effects of both private sector and nationalized bank categories. The study has taken Indian banks into account. The Reserve Bank of India's official website provided the secondary data used in the study, which covered the years 2019–2020. The average growth rate of gross non-performing assets (NPAs) has been calculated statistically using the mean. Additionally, by contrasting the rise in gross non-performing assets (NPAs) of particular banks with the average growth rate, the result is further improved. In comparison to banks that have been taken over by the state, the assessment of private sector banks shows that the rate of growth in non-performing assets (NPAs) is comparatively slow. The issue of non-performing loans was not adequately addressed by state-owned banks, which led to a sharp rise in these debts.

Key terms: Nnationalized bank, Private Banks, Non-performing assets etc.

Introduction:
The foundation of any financial system and an essential component of economic stability is the banking sector. Bank profitability and credit expansion are hampered by non-performing assets (NPAs). Recent increases in non-performing assets (NPAs) suggest systemic problems with lending procedures. Loans that have principle or interest payments past due for more than ninety days are known as non-performing assets (NPAs), which have a negative impact on banks' bottom lines and the economy. Banks are required to classify non-performing assets as sub-standard assets based on the length of time that the asset has not performed. If an asset has not produced results for more than a year, it is deemed a questionable asset, meaning that losses have been identified by the bank, auditor, or other inspector and have not been completely dropped
In the Indian banking system, advances or loans for which the borrower has not made interest or principle payments for ninety days or longer are referred to as non-performing assets (NPAs). Because they lower profitability and restrict the ability to extend new credit, non-performing assets (NPAs) represent a significant threat to banks' financial stability. Following the global financial crisis, the issue of growing non-performing assets (NPAs) in India came to light, and the Reserve Bank of India's (RBI) asset quality reviews further highlighted it. Sustaining credit expansion, preserving financial stability, and bolstering the banking industry as a whole all depend on efficient NPA management.

Literature Review
1.The two post-liberalization banking crisis events were compared by Sengupta and Vardhan in 2017. One began following the global financial crisis of 2008, which intensified the late 1990s and the non-performing asset (NPA) issue. According to the authors, a strong legislative framework for NPA resolution would aid in resolving the problem with non-performing assets, as would strong governance and proactive banking. Regulatory forbearance, however, would have a detrimental effect on the banking crisis.
2. Gupta (2012) has revealed and evaluates the location of State Bank of India (SBI) non-performing assets (NPAs), its affiliates, and other public sector banks. The researcher comes to the conclusion that every bank ought to set up a separate credit rating agency. It also suggests that the NPA issue has to be monitored and overseen by a committee composed of financial experts.
3.Sharma (2020) emphasizes how the banking sector can be a tool for economic development and advancement. The paper specifically discusses how banks are beset by an increase in nonperforming assets. concerning public sector banks. The author lists a few safety measures that lower the quantity of non-performing assets. appropriate legislative requirements and timely implementation of This might pave the way for India to establish a strong finance sector.
4.The influence of gross and net non-performing assets (NPAs) on the asset quality of public and private sector banks has been examined by Banerjee and colleagues (2018). The main reasons for the NPA pile include deliberate loan defaults, insufficient credit handling laws, and approving loans without considering the borrowers' capacity to bear risk. The banks should priorities better strategy. formulation as well as appropriately putting it into practice. The state's strict restrictions could help lower the NPA ratio.
5. Mukhopadhyay (2018) spoke about in his article resolving the NPA crisis in India. n order to address the problems with NPAs, he has suggested: Instead of following a single model, the RBI ought to come up with a creative and flexible plan that is tailored to each affected bank separately.

The Research Gap: The focus of the study is on both individual banks and bank organization. This is done in order to identify the banks that bear the greatest responsibility for the non-performing asset (NPA) issue facing the banking sector. As a result, the paper addresses a topic that is current, such as not paying accounts. The research adds new information to the financial literature, which will be helpful to readers.
to have a deeper comprehension of the current state of banks with respect to the non-performing assets (NPA) of nearly all banks with the broadest reach in the banking industry. The goals of the study the following are the goals of the study:
2. To determine the average growth rate for a number of private and nationalized bank groups as well as individual bank. Furthermore:
1. To offer insights into the growing trend of gross non-performing assets. Design of Research the RBI website provides secondary data for the study from 2019 to 2023. When comparing individual bank non-performing assets (NPAs) to the sector average, average growth rates are computed using the geometric mean. The trend line was computed to compare banks in the private and nationalized sectors.
2. To determine the average growth rate for a number of private and nationalize bank groups as well as individual banks; furthermore.

The study's objectives: The following are the goals of the study:
a. To determine the average growth rate for a number of private and nationalised bank groups as well as individual banks.
b. To offer insights into the growth trend of gross non-performing assets.c. To study progressive NPA stats of banking sector.

Research Design: The RBI website provides secondary data for the study from 2019 to 2023. When comparing individual bank non-performing assets (NPAs) to the sector average, average growth rates are computed using the geometric mean. The trend line was computed to compare banks in the private and nationalized sectors.
Information, the source, and Research methods: The study is based on secondary data that was obtained from the RBI website. The geometric mean is employed as a statistical method in this work. The trend line was then computed by comparing each bank's growth rate to the average growth rate.
Evaluation of Private sector banks: The following section discusses the individual gross non-performing asset (NPA) assessments of private sector banks. A review of the gross non-performing asset (NPA) status of private sector banks shows that the growth rate, as determined by applying the Geometric Mean, is relatively low in the early years of the research period, with the lowest being 3% in 2022–2023. The aggregate non-performing asset (NPA) proportion in the private sector reached its highest level in 2019–2020, at 6.01%. The "asset quality review" conducted by the RBI in 2015 may have contributed to this unexpected increase trend. The under-reporting of non-performing assets (NPAs) in private sector banks was made public by the RBI investigation.
The latter years of the study period show a noticeably higher rate of non-performing assets (NPAs) for major lenders such as Axis Bank, Yes Bank, and ICICI Bank. Between 2019 and 2023, IDBI Bank's gross non-performing assets (NPAs) climbed by approximately 20.78%, followed by Karur Vysya Bank (6.71%) and Yes Bank (10.31%).

NPAs % of Private sector banks (Part-I)

Sr. No.	Year	2019	2020	2021	2022	2023	Average
1	IndusInd Bank	2.1	2.45	2.67	2.27	1.98	2.294
2	HDFC Bank	1.36	1.26	1.32	1.17	1.12	1.25
3	City Union Bank	3	4.1	5.1	4.7	4.4	4.2
4	DCB Bank	1.84	2.46	4.09	4.32	3.19	3.18
5	IDFC FIRST Bank	2.43	2.6	0.04	3.7	2.51	2.256
6	ICICI Bank	6.7	5.53	4.96	3.6	2.81	4.72
7	Bandhan Bank	2.04	1.48	6.81	6.46	4.87	4.33
8	Axis Bank	5.26	4.86	3.7	2.82	2.02	3.73
9	Kotak Mahindra Bank	2.14	2.25	3.25	2.34	1.78	2.352
10	IDBI Bank	27.47	27.53	22.37	20.16	6.38	20.78
11	Jammu & Kashmir Bank	8.97	10.97	9.67	8.67	6.04	8.864
12	Karnataka Bank	4.41	4.82	4.91	3.9	3.74	4.356
13	Karur Vysya Bank	8.79	8.68	7.85	5.96	2.27	6.71
14	YES Bank	3.22	16.8	15.41	13.93	2.17	10.31
15	RBL Bank	1.38	3.62	4.34	4.4	3.37	3.422
16	Average	5.41	6.63	6.43	5.89	3.24	5.52

Source: reference RBI Report 2019-23

NPA Evaluation of Private Sector Banks (2019–2023)
A. Growth more than average (5.52%)
IDBI Bank, Jammu & Kashmir Bank, Karur Vysya Bank and YES Bank.
B. "Growth less than average" (5.52%)
IndusInd Bank, HDFC Bank, City Union Bank, DCB Bank, IDFC FIRST Bank, ICICI Bank, Bandhan Bank, Axis Bank, Kotak Mahindra Bank, Karnataka Bank, RBL Bank.
What it shows:
The table lists the percentage of NPAs for 15 private sector banks across 5 years (2019 to 2023), and also gives their 5-year average.
Key Observations: **Best Performing Banks** (Lowest NPAs): **HDFC Bank (1.25%)**, **IndusInd Bank (2.29%)**, and **Kotak Mahindra Bank (2.35%)** have maintained **low NPAs**, indicating **good asset quality** and **effective credit management**.
Poor Performing Banks (Highest NPAs): **IDBI Bank (20.78%)** and **YES Bank (10.31%)** have very **high average NPAs**, which shows **stress in asset quality**.
Sector Trend: Overall, the **average NPAs across all banks have dropped** from **6.63% in 2020 to 3.24% in 2023**, showing **improvement in the financial health** of private banks.
Conclusion: The private banking sector in India is **improving in terms of NPA management**, though **a few banks still face high asset quality issues**. Most top private banks are doing well in keeping their bad loans under control.
Source: Computed by the researchers

Performance assessment of nationalized banks
According to the calculation, gross non-performing assets (NPAs) have a poor position in relation to the growth rate for the 2019–2023 timeframe. Bank of India, Central Bank of India, Indian Overseas Bank, Punjab National Bank, Punjab & Sind Bank, UCO Bank, and Union Bank are the banks that exhibit the highest NPA above average, at 10.52%, if we examine individual banks and the growth rate over the study period. The collective condition of the nationalized banks indicates that since the financial crisis began to have an impact in 2010, the NPA growth rate has increased rapidly.

NPAs % of public sector banks (Part-II)

Sr. No.	Year	2019	2020	2021	2022	2023	Average
1	Central Bank of India	19.29	18.92	16.55	14.84	8.44	15.608
2	Bank of Maharashtra	16.4	12.81	7.23	3.94	2.47	8.57
3	Bank of Baroda	9.61	9.4	8.87	0.07	3.79	6.348
4	Bank of India	15.84	14.78	13.77	9.98	7.31	12.336
5	Canara Bank	8.83	8.21	8.93	7.51	5.35	7.766
6	Indian Overseas Bank	21.97	14.78	11.69	9.82	7.44	13.14
7	Indian Bank	7.11	6.87	9.85	8.47	5.95	7.65
8	Punjab and Sind Bank	11.83	14.18	13.76	12.17	6.97	11.782
9	State Bank of India	7.53	6.15	4.98	3.97	2.78	5.082
10	Union Bank of India	14.98	14.15	13.74	11.11	7.53	12.302
11	UCO Bank	25	16.77	9.59	7.89	4.78	12.806
12	Punjab National Bank	15.5	14.21	14.12	11.78	8.74	12.87
13	Average	14.49	12.6	11.09	8.46	5.96	10.52

Source: reference from RBI Report 2019-23
Overview of the Data: The table displays the **Non-Performing Assets (NPAs) %** of 12 nationalized banks over 5 years. It also includes the **average NPAs** to reflect each bank's overall performance.
Key Highlights
Top Performers (Lowest Average NPAs):
These banks show **strong asset quality and consistent improvement**:
State Bank of India (SBI) – 5.08%, Bank of Maharashtra – 8.57%
Indian Bank – 7.65%, Canara Bank – 7.77%
Struggling Banks (Highest Average NPAs):
These banks have **faced higher levels of bad loans**:
UCO Bank – 12.81%
Punjab National Bank – 12.87%, Union Bank of India – 12.30%
Indian Overseas Bank – 13.14%, Central Bank of India – 15.61%

Positive Trend: The **average NPA for all nationalized banks has dropped** significantly from **14.49% in 2019 to 5.96% in 2023**.
This reflects a **sector-wide improvement** in loan recovery and credit risk management.

Conclusion: Nationalized banks have **substantially improved** their asset quality over the past 5 years. While some banks like **SBI, Bank of Maharashtra, and Indian Bank** are performing very well, others still need to improve their NPA levels.

NPA Evaluation Report – Nationalized Banks (2019–2023)

1. Sector Overview: The **average NPA across all nationalized banks** has significantly reduced from **14.49% in 2019** to **5.96% in 2023**. This trend reflects **improving financial health**, better credit risk management, and stronger recovery efforts post-COVID-19.

2. Best Performing Banks (Low Average NPAs):

Bank	Avg. NPA (%)
Canara Bank	7.77
Bank of Maharashtra	8.57
State Bank of India	**5.08**
Indian Bank	7.65

These banks maintained **relatively low NPA levels** throughout the 5 years and showed consistent improvement.

3.Underperforming Banks (High Average NPAs):

Bank	Avg. NPA (%)
UCO Bank	12.81
Union Bank of India	12.30
Central Bank of India	**15.61**
Indian Overseas Bank	13.14
Punjab National Bank	12.87

These banks have faced **persistent asset quality challenges**, although they have also shown some improvement, especially in 2023.

4. Key Improvements:

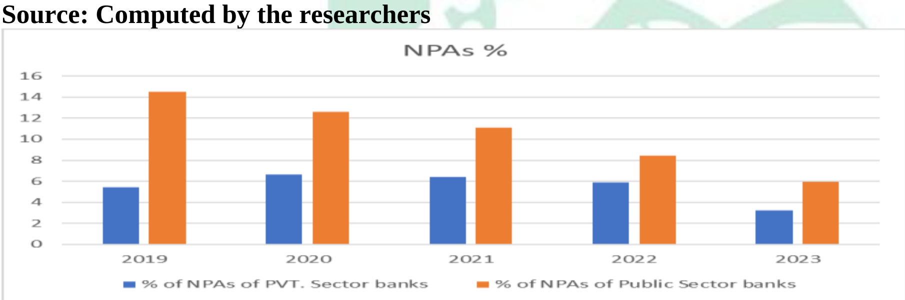
Central Bank of India dropped from **19.29% (2019)** to **8.44% (2023)**.

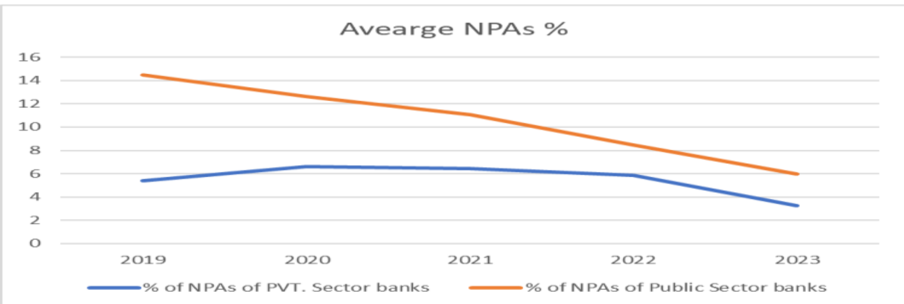
UCO Bank reduced NPAs from **25% (2019)** to **4.78% (2023)** — a dramatic turnaround.

Bank of Maharashtra showed the **steepest decline**, from **16.4% to just 2.47%** over 5 years.

Conclusion: Overall NPA levels have improved significantly in the nationalized banking sector. While **some banks continue to struggle**, most are showing **positive recovery trends**. The data suggests a **stronger and more stable public banking system** going forward.

Source: Computed by the researchers





Public Sector Banks:

1.14.49%: This indicates that public sector banks' non-performing assets (NPAs) are increasing at a significant rate. It suggests that these banks had a notable increase in non-performing assets during the relevant time frame.

2. 12.6%: Although a little lower than the previous figure, this is still a noteworthy NPA growth rate for public sector banks.
3. 11.09%: This figure once again demonstrates a notable increase in non-performing assets within the public sector banking sector.
4. 8.46%: The growth rate is still rather high, indicating that managing non-performing assets remains challenging even though it appears to be declining when compared to previous figures.
5. 5.96%: This figure shows that NPA growth is occurring more slowly than it has in previous years.

Private Sector Banks:
1.5.41%: Private sector banks exhibit a lower NPA growth rate than public sector banks, which could indicate improved risk management strategies.
2. 6.63%: This proportion shows a moderate increase in private sector banks' non-performing assets, which may require attention to prevent further escalation.
3. 6.43%: Consistent with the previous finding, private sector banks are still maintaining a rather stable pace of growth in non-performing assets.
4. 5.89%: The NPA growth rate for private sector banks is little higher than the last figure, although it is still within a reasonable range.
5. 3.24%: Private sector banks have a lower NPA growth rate than public sector banks, indicating that they manage their asset quality better.

Analysis of Trends: The data suggests that public sector banks would face more challenges than their private sector counterparts in handling NPAs. Although they are not exempt from NPA problems, private sector banks often maintain lower NPA growth rates, maybe as a consequence of more stringent ending criteria or better risk management techniques. Despite variations in the NPA growth rates for the two sectors, public sector banks continuously exhibit greater NPA growth rates than private sector banks across the studied period.
In summary, the data indicates that both public and private sector banks still struggle with managing non-performing assets, with the former frequently experiencing higher rates of NPA growth than the latter.

Conclusion: All things considered; the results indicate a concerning state of affairs for the banking industry. Overall, the results indicate a concerning state of affairs for the banking industry. The issue is apparent with both small banks and well-known banking brands, according to a review of the pace of increase in the NPA level. Consequently, the problem impacts the entire sector. The RBI's standards, which demand that banks set aside a certain amount based on the quality of their assets, reduce banks' profitability. As a result, banks that have inadequate assets face challenges, which are apparent not only for small banks but also for larger institutions.
It would take time to assess the RBI's effectiveness in controlling the sector's rise in non-performing assets. We must act quickly since these troublesome loans are hurting banks' liquidity positions and the banks themselves have been told to cut back on lending. Ultimately, this will affect the economy's growth, which has been sluggish lately. The profitability of these organizations and the wealth of their shareholders are thus affected. Therefore, the RBI's creation of strict guidelines to limit the accumulation of these assets is justified. Recovering assets is crucial for creditors whose cases have been submitted to the National Company Law Tribunal, thanks to the Insolvency and Bankruptcy Code of 2016. Based on data from the RBI, the NPA growth rate is actually starting to decline, which is a good trend. But more needs to be done.

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The Impact of Evolving Global Trade Policies and Regulations on Digital Commerce Expansion

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Abstract

Commerce has changed the global trade standards, allowing businesses to reach international markets with extraordinary ease of minimal physical presence by converting itself from traditional commerce to digital commerce. However, the different frame work shapes how a business is managed which evolves around many trade policies and regulations particularly affecting the expansion of commerce, affecting cross-border transactions, data privacy, taxation, and compliance requirements. Here in this papers we explore impact of different trade agreements which affects general working of taking business to reach a different level taking it from traditional to digital world. It requires the knowledge of implications of international trade agreements, data protection laws, digital service taxes, and emerging regulatory frameworks on digital commerce. By interpreting recent developments, challenges, and opportunities, this study provides insights into how businesses can navigate the evolving global trade landscape to foster sustainable e-commerce growth. Commerce has changed the global trade standards, allowing businesses to reach international markets with extraordinary ease of minimal physical presence by converting itself from traditional commerce to digital commerce. However, the different frameworks shape how a business is managed, which evolves around many trade policies and regulations, particularly affecting the expansion of commerce by impacting cross-border transactions, data privacy, taxation, and compliance requirements. With the rise of globalization and digital infrastructure, companies follow the international standards and regulations such as the provisions of GDPR, WTO on digitalised commerce, and geography specified digital tax policies. Moreover, digital trade barriers—such as restrictions on cybersecurity compliance of data depict operational complexities. Businesses must adapt to these legal frameworks by developing strategic compliance policies, investing in secure technology infrastructure, and enhancing transparent data handling practices. One need to analyse the legal and regulatory controls that allow organisations to stay competitive while avoiding legal compliances. By analysing the recent advancements of framework, the challenges and opportunities, this study provides light on an organisation can navigate the evolving global trade landscape to foster sustainable digital commerce development and globalising the market. Here in this paper, we explore the impact of different trade agreements that affect the general functioning of businesses as they transition from traditional to digital models. It requires an understanding of the implications of international trade agreements, data protection laws, digital service taxes, and emerging regulatory frameworks on digital commerce.

Keywords:
Digital commerce, Global market, Laws and policies, Cybersecurity, Transparency, Investments

1. Introduction

The digital commerce has arisen as the disrupted traditional trade models, where organisations engage in global transactions with (OECD, 2021). However, as digital trade expands, local government and international organizations (the **Digital Economy Partnership Agreement (DEPA)**, signed by Chile and other nations) are introducing new policies to regulate these digital transactions to protect consumer data globally and ensure fair competition worldwide (World Trade Organization [WTO], 2023). These ground breaking regulations shape the way businesses operate, influencing market entry strategies, investment decisions and trade flows (European Commission, 2022). This paper examines how globally trade policies and regulations impact digital commerce cross border and explores strategies that businesses can adopt to leverage opportunities and mitigate risks.

Digital commerce has transformed international trade, allowing businesses to reach global markets with exceptional ease. The rapid adoption of digital platforms, advancements in financial technology, and the rise of digital commerce giants have prominently contributed to the seamless exchange of goods and services across borders. However, rules for data flows, encryption, and prohibitions on forced data localization evolving trade policies and regulations significantly impact the expansion of digital commerce but fragmented approaches (e.g., DEPA vs. WTO) create compliance complexity for multinational businesses affecting data privacy, taxation, and compliance requirements.

2. Global Trade Agreements and Digital Commerce

2.1. Role of the WTO and Regional Trade Agreements

The emergence of digital commerce highlights the vital role of the WTO in shaping global trade policies. The interplay of trade agreements, data laws, and taxes hampers opportunities and creates hurdles. Frameworks like DEPA (Digital Economy Partnership Agreement) encourage businesses to align their operations, invest in compliance, and leverage data privacy as a strategic asset. As a result, competitors who adapt quickly will succeed in thriving within the evolving digital trade ecosystem. Conversely, organizations that are slow to adapt risk facing regulatory penalties, declining revenue, and loss of consumer trust in an increasingly regulated global market, ultimately leading to reduced competitiveness and diminished global presence.

Regional trade agreements also influence digital commerce:

- International data flows and limits data localization requirements is backed by The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) (Herman, 2021).
- The United States-Mexico-Canada Agreement (USMCA) includes digital trade regulations that do not allow data localization and ensure the free flow of information (USMCA, 2020).
- The Regional Comprehensive Economic Partnership (RCEP) promotes digital trade while allowing countries to implement data protection policies (APEC, 2022).

2.2. Digital Trade Barriers and Protectionism

Despite trade agreements promoting digital commerce, governments in some countries impose data localization laws which is a requisite in some organisations to store data within national borders consequently increasing compliance costs. Countries such as China, India, and Russia have strict data localization policies that disrupts cross border digital commerce (Chander & Le, 2021).

3. Data Privacy Regulations and Their Impact on Digital Commerce

Data privacy laws shapes how organisations process the data of its customers globally. How a data is collected, stored, and processed without affecting their ability to expand globally. Essentially, they include:

1. General Data Protection Regulation (GDPR)- It is forced by the European Union, who imposes strict data processing requirements on businesses operating within geographical area or targeting consumers in EU member states. It states that companies need to know their customers to know exactly why getting personal information is must before collecting or storing the information (European Commission, 2022). The regulation requires companies to clearly disclose the purpose of data collection, the types of data being collected, how it will be used to ensure transparency and accountability of data. Also, companies should give right to people to alter or fix or remove the information whenever they wish to. Doing this, they are emphasized that users can alter, fix or change their information. Failure to do so would mean these regulations were not fulfilled and can result in substantial fines and reputational damage, compelling businesses to prioritize data protection as an essential element of their operations. The GDPR has also set a global benchmark, influencing other countries to adopt similar privacy frameworks and raising the overall standard of data governance in the digital economy.
2. A thorough legal framework for the protection of personal data in China was established by the Personal Information Protection Law (PIPL), which was in action in 2021. It was a strict requisite to get an approval from the government before the data could cross the borders. (Zhang, 2022). For international companies doing business in China or managing the data of Chinese nationals, this rule raises the data trade agreement burden. Businesses must carry out security appraisals to ensure global data transfers and stick to data regulations to confirm protection to that recipient nations deserve. Organizations must also keep thorough records of their data handling procedures and secure individual consent before transferring data of this kind. China's greater reasoning of increasing cybersecurity is reflected in the PIPL's emphasis on data sovereignty.For multinational corporations, this law presents operational challenges, including the need to establish localized data centres, modify global data practices, and invest in regulatory expertise to avoid penalties and maintain market access.
3. The California Consumers Privacy Act (CCPA), which has been adopted in the United States, is one of those local data privacy statues with the largest coverage and is also varying a lot of the agreement practises used by the companies when dealing with consumers data. It is the convenience provided to the local residents that make the CCPA being able to letting the information to be used that has been collected regarding them, for the reason it is used, and with whom it is to be shared (CCPA, 2023). The law also entitles consumers to refuse the sale of the data, ask for the deletion of the data, and enquire about the data that has been collected about them. Despite the CCPA being a regulation of California, it covers all the ethics in the business entities no matter where is the location. Data collected, if processed beyond the limits authorised by California residents, it will be considered extension over territorial boundaries and would connate lot of companies not only within the USA but also beyond its border it as act of oppression. These restrictions on data privacy such as the CCPA is indeed of great importance with respect to digital commerce journey to new horizons by giving new layers of compliance. The companies should imply proper data governance systems, cyber-security infrastructure, and have legal professionals who are capable of aligning the laws' request (Kuner et al., 2020). The prevention of data sharing and the necessity of having the user`s consent also cause the advertising to be less effective. As a result it forces the entrepreneurs to follow the ethical way of marketing where all the procedures and policies are clear. And hence, while such

regulations not only create a better environment and digital trust but also ensure cost-effective privacy of data to redesign their strategy of collecting, using, and protecting the data of the consumers.

4. Taxation and Digital Services Taxes (DSTs)

The taxation of digital commerce is controversial issue, as governments make sure that multinational tech companies contribute fairly or say more than fairly to national revenues. While these policies targets the certain fairer taxation, the consequence are created by increased operational costs for global digital businesses and may lead to trade disputes (OECD, 2023).

- The OECD's Global Minimum Tax Agreement (2021) establishes a 15% minimum corporate tax on large multinational corporations to prevent tax avoidance (OECD, 2021).
- Digital Services Taxes (DSTs) have been implemented in France, the UK, and India. The increased tax revenues from digital activities, leads to trade tensions at times. (Goolsbee & Zittrain, 2022).

5. Emerging Technologies and Regulatory Challenges

5.1. The Role of Blockchain and Cryptocurrencies in Digital Trade

Blockchain technology is revolutionizing digital trade by enhancing transparency, security, and productivity in dealings. However, the lack of standardized regulations on cryptocurrencies and blockchain-based transactions creates uncertainty for businesses (Nakamoto, 2008). Countries like China have banned cryptocurrency trading, while others, such as El Salvador, have considered Bitcoin as legal tender (International Monetary Fund [IMF], 2022).

5.2. Digital Service Taxes

Countries are increasingly implementing **digital service taxes (DSTs)** targeting tech giants and cross-border e-commerce revenue. The EU's trade agreements permit internal taxes on digital transactions, while the OECD's global tax reforms aim to standardize DSTs. These measures complicate pricing strategies and profitability, particularly for SMEs lacking resources to navigate varied tax regimes.

5.3. Artificial Intelligence (AI) and Trade Regulations

Digital commerce solutions solved by AI technologies, such as automated customer service and personalized recommendations, raise concerns about data privacy, prejudice, and ethical considerations. Government of different countries are getting familiarize with trade regulations to oversee AI applications, such as the EU Artificial Intelligence Act (2023), which sets guidelines on AI usage in commerce (European Commission, 2023).

6. Challenges and Opportunities for Businesses

6.1. Challenges

- Different nations and areas have created their own regulatory frameworks, such as the CCPA in the US, the PIPL in China, and the GDPR in the EU, each with unique requirements and compliance obligations. The nations often move to international data protection and trade laws for the business they are involved in. Organisations face a significant challenge due to regulatory fragmentation. These regulations frequently are duplicated or even contradict one another, which causes legal complexities and confusion for businesses that operate internationally. For instance, China's PIPL restricts cross-border data transfers, including the requirement for government approval, whereas GDPR promotes data flow within the EU under strict privacy controls but unrestricted. Businesses are forced to implement region-specific compliance strategies which in consequence raises operational and administrative conflicts. Moreover, the organisations need to reconstruct their data storage capacities locally or restructure the IT infrastructure for the varying region specific legal needs. Thus, the strata trade not only restricts the daily operations but also strategies to capture the market area. (Kerzner, 2020)
- Primary concern for business operating digitally need to have increased operational cost to maintain and enforce strict legal regional regulations such as the General Data Protection Regulation (GDPR) in the European Union, the Personal Information Protection Law (PIPL) in China, and the California Consumer Privacy Act (CCPA) in the United States, organizations are compelled to make substantial financial and structural investments to remain compliant (Schwalbe, 2021). These investments include upgrading IT systems, enhancing cybersecurity frameworks, employing legal and data protection officers, and conducting regular audits to ensure adherence to region-specific regulations. Additionally, businesses must now manage complex taxation policies related to digital services, which vary widely across jurisdictions and often require the implementation of sophisticated accounting systems to calculate, collect, and remit appropriate taxes. The cost of non-compliance, including heavy fines, reputational damage, and legal action, further increases the pressure on organizations to invest proactively. According to Kuner et al. (2020), the fragmented nature of global regulations exacerbates the financial burden, especially for small and medium-sized enterprises (SMEs) that lack the resources of large multinational corporations. As a result, increased compliance costs are now a critical factor influencing strategic planning, market entry decisions, and operational efficiency in the digital economy.

6.2. **Opportunities**

- Cross-border e-commerce growth: Despite regulatory hurdles, digital trade continues to expand, with businesses adopting localization strategies (McKinsey, 2023).
- Regulatory harmonization initiatives: Organizations like the WTO and OECD are working toward creating uniform digital trade policies (OECD, 2023).
- Technological advancements: Innovations in fintech, blockchain, and AI provide new opportunities for digital trade efficiency (Gartner, 2022).
- Leverage Trade Agreements: Align operations with DEPA or EU digital trade frameworks to access markets like Singapore and South Korea.
- Prioritize Privacy-by-Design: Implement GDPR-style consent management tools and audit data practices to meet regional laws (e.g., Iowa's ICDPA).
- Adopt Agile Compliance: Use AI-driven analytics to monitor regulatory changes and automate tax/DST calculations.
- Build Consumer Trust: Transparent data practices (e.g., zero-party data collection) enhance loyalty, with 73% of consumers favouring brands that prioritize security.

7. Conclusion and Recommendations

The evolving landscape of global trade policies and regulations presents both challenges and opportunities for digital commerce expansion. While international trade agreements facilitate digital trade, regulatory fragmentation, data privacy laws, and digital service taxes create obstacles for businesses. Companies must adopt adaptive compliance strategies, invest in cybersecurity, and engage with policymakers to shape fair and inclusive digital trade policies. Future research should explore the long-term effects of regulatory changes on digital commerce and the role of emerging technologies in shaping trade policies.

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Study Of Impact on Consumer Behaviour Towards Online Buying of Electronic Products

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Abstract:
Online shopping is far better than traditional shopping since it uses the internet to deliver goods right to our door. It is a recent prodigy in the field of electronics business. Electronic goods ranging from Television sets, Mobile phones, Refrigerators, Air Conditioners etc are available online on discounts and returnable basis. Due to rising demand of consumers for electronic goods and their growing approach to buy them online, this paper seeks to study the frequency, perception and satisfaction of consumers towards buying electronic goods online. This study aims to analyse several elements that encourage consumers to make online purchases of electronic goods. It also aims to investigate how frequently consumers purchase electrical devices online, as well as how satisfied they are with this process. The data used in this study came from two sources: websites, journals, and publications provided secondary data, while a structured questionnaire completed by 100 respondents provided primary data. The study is limited to the city of Mumbai only.

Keywords:
Consumer behaviour, Online buying, electronic products, E-Commerce.

Introduction:
People's lifestyles have experienced a significant alteration. Because of their strenuous job schedules, they are so busy that they seldom have time for leisure shopping excursions. Due to its ability to save a great deal of time, offer a wide variety of product alternatives, numerous discounts, and other upsides, online shopping has become a lifesaver for many people. Online shopping is a type of electronic commerce where customers use a web browser to purchase goods or services directly from sellers via the internet. Online consumers can visit websites and make purchases using their phones as well as while seated in front of computers or laptops. Online shops are open around-the-clock.People can consequently shop anywhere and at any moment. We find everything online, rather it be clothes, apparels, food products, electronic devices etc. These days, it's hard to imagine living without electronic devices. They are now considered a necessary component of life, and a sizable portion of these goods are offered online.The Indian electronic market is worth $155 billion, and 65 percent of it is produced domestically. The country’s electronics export is expected to reach $120 billion by FY26.With advancements in technology and increasing consumer demand, the sector has become a major contributor to India's GDP. This sector nearly contributes around 3.4 % of country’s gross GDP.Government has implemented various policies that were favourable for the growth of electronics industry. Government of India is optical about manufacturing electronics within India as a Make in India initiative. Various programmes and initiatives uplifted domestic electronic manufacturers. Today, India’s production of, and by ratio electronics is reckoned at US$ 90 billion and export is estimated to be US $ 23 billion. Today, Electronic Industry is engaging customers through E-Commerce. E-commerce, defined as the buying and selling of goods and services through an electronic medium primarily over the internet.E-commerce has expanded quickly on a global scale by virtue of shifting customer demands and technology breakthroughs. The e-commerce industry in India has grown at an exponential rate owing to consumer behaviours age, internet penetration, and digital payment options. Consumers purchasing products through E-Commerce is called online purchase behaviour or online buying behaviour. Consumers gain varied experiences through their purchases and implement these experiences in their further purchase. If these observations are tapped by the market researchers and studied thoroughly, a proper planning and strategy can be prepared and it will also help to modify the policies according to the current market trend. There are various factors that influence consumer behaviour such as motivation, an appealing website, trust building and complete knowledge about product and services etc. Consumer behaviour study of this research will enable us to have a deeper understanding of what consumers seek and what options are available to them in their favour. The current research focuses on consumer’s behaviour of people in Mumbai who have purchased electronic appliances such as cell phones, home appliances, and other accessories through online websites. In this study, factors influencing consumers’ buying behaviour has been studied extensively.

Literature Review:

- Elliot and Fowell (2000) stated that, it has been established that there are other variables besides online shopping that are related to increased internet usage, therefore the relationship between the two is not entirely one-sided. However, internet access is practically necessary for customers to engage in online shopping and to make the most of it.

- Korgaonkar et al. (2006) stated that, Online retailers should be able to build a solid online presence by improving their online customer care for all products that customers choose to buy online. The majority of things that customers buy are preferred to be purchased offline, according to the writers, however a select handful are preferred to be purchased online.
- Bhowmik (2012) stated that, because e-commerce has made it easier for businesses and sellers to expand into new markets, it has created new opportunities for the market. Connecting with clients from different demographics has been made easier by e-commerce, which has also assisted in advancing e-governance.
- Arora (2013) stated that, the ten percent growth in e-commerce in India has improved client internet usage and literacy. Since mobile commerce has aided in the expansion of online retailing, this is also dependent on it. The expansion of e-commerce has been greatly aided by customer demographics and internet literacy.
- Nisha Gupta and Rajiv Jain (2017) in their study titled "Consumer Behaviour towards E-commerce: Online Shopping" found that customers currently do not feel safe shopping online due to serious security issues with online transactions. They believe that doing business online carries a significant danger of fraud and hoax.
- Sanjeev Prashar, T. Sai Vijay (et al.) (2017) in their study titled "Effects of Online Shopping Values and Website Cues on Purchase Behaviour: A Study Using S-O-R Framework" promoted the use of web atmospherics by e-retailers to set themselves apart from rivals.
- Dr. Sanjay Hooda. Mr. Sandeep Aggarwal (2012) in their study observed There was no discernible relationship between respondents' gender and internet usage in their survey. There is a favourable relationship between monthly income, occupation, and respondents' purchasing decisions. Because of their hectic schedules, people with greater incomes typically have less time to go to traditional shops and buy products/services. Hence, to save time, they trade online.
- Surendra Malviya and Manminder Singh Saluja, (2013), investigated the factors influencing smartphone purchasing decisions among Indore consumers. This research offers innovative marketing strategies to the top mobile companies in a market. This research aims to discover critical elements that influence consumers' purchasing decisions for smartphones.

Research Objectives:

- To analyse the impact of online sale of Indian Electronic Industry on market trends.
- To evaluate changes in consumer behaviour due to online buying of electronic products.
- To identify challenges and opportunities faced by consumers while buying electronic products online.
- To explore the various aspects that influence customers' online purchase behaviour for electronic equipment.

Research Methodology:

Following is the research methodology undertaken to carry out the research:

Research Design: A research design establishes a structure for the entire research process. It is the map or blueprint that will guide the study. This design also discusses the method used in gathering the necessary information for this study.

Area of Study: This study has considered Electronic Industry only and is restricted to Mumbai.

Data Collection: The data will be collected using Primary and Secondary Sources. Primary data will be collected using questionnaire method and Secondary data will be collected from books, newspapers, Journals, articles, published reports and Internet.

Sample Size: Sample size measures the number of individual samples used as the sample size of 100 respondents was taken to conduct of study.

Limitations:

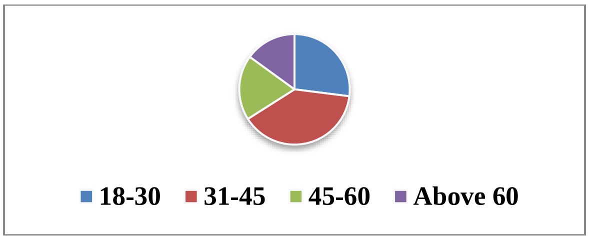
There are few limitations to this study that should be considered:

- The sample size of this study is limited and cannot be representative of the whole population.
- Reliability is questionable as consumer behaviour can be assessed with greater sample size.
- The study is limited to electronics industry only.

Analysis and Interpretation:

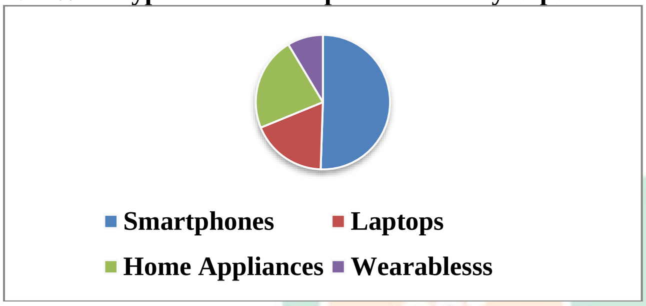
After collecting the data, analysis and interpretation was done according to the objectives. Approximately 157 respondents gave their responses to the questionnaire .100 respondents were filtered who responded clearly and have not given vague responses.

1. **Age:**



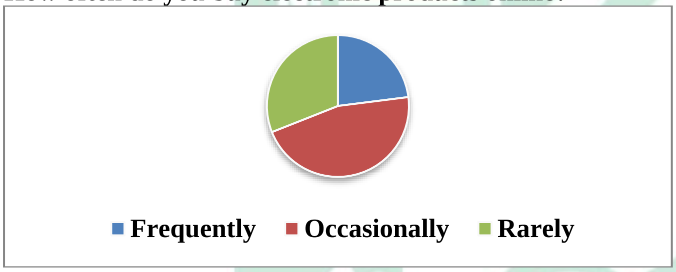
This data shows the different age groups of respondents who purchase electronic products online and it is found out that maximum number of respondents who purchase electronic products online are from the age group 31-45 (39%) followed by respondents between the group 10-30 (27%), 45-60 (19%) and aged above 60 (15%)

2. **What type of electronic products have you purchased online?**



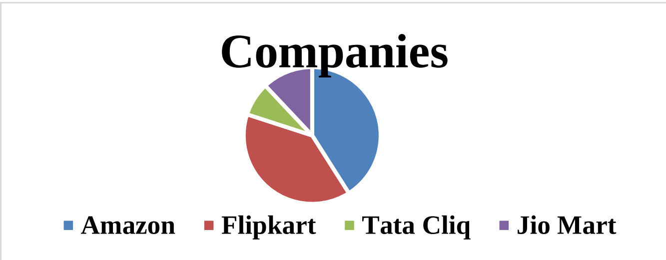
From the above diagram, it can be seen that 47% of the respondents have purchased smartphones, 21% have purchased home appliances followed by Laptops and wearables 17% and 15% respectively.

3. How often do you buy electronic products online?

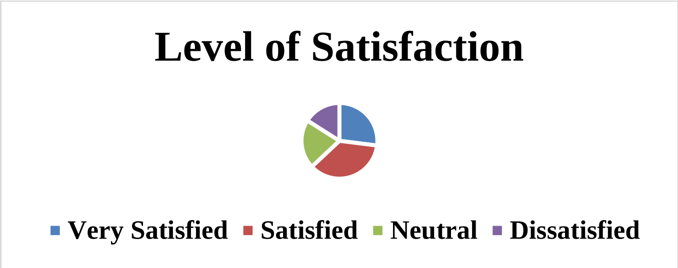


This pie chart shows the frequency of electronic products purchased online. It shows that 46% of the respondents buy electronic products occasionally, 31% buy products rarely and 23 % buy products frequently.

4.Which platforms do you typically use to purchase electronic products online?
This pie chart shows the preference of respondents regarding purchase of electronic products online. It shows that 41% of the respondents buy electronic products from Amazon, 44% from Flipkart, 12% from Tata Cliq, and 9 % from Jio Mart.

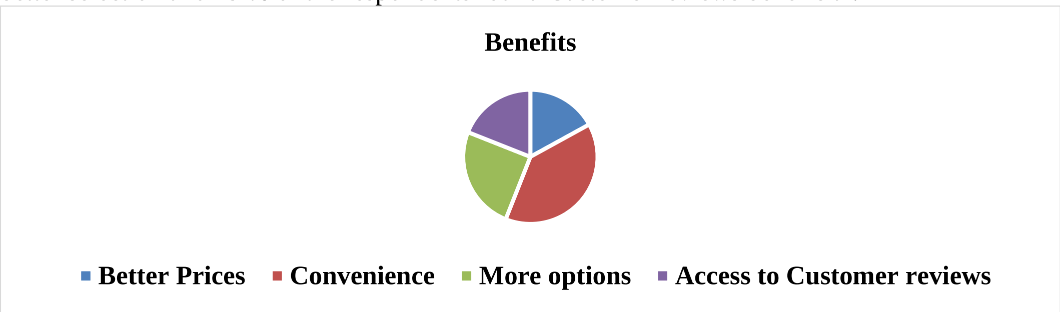


5. How would you rate your overall satisfaction with your most recent online purchase?
The data shows that 27 % of the respondents are very much satisfied with the products that are bought online, 36% are satisfied followed by 21% had a" Neutral" experience and 16% are dissatisfied with the purchase.



6. What would you say is the most significant benefit of buying electronics online?

This data shows the benefits customers had after buying electronic products online. It shows that 39% of the respondents felt convenient buying products from online 25% of the respondents got multiple options for making a better selection and 19 % of the respondents found Customer reviews beneficial.



7.What challenges do you face when buying electronics online?

This data shows the challenges faced by people while purchasing electronic products online.47% of the respondents were uncertain about the product quality while buying it online.26% of the respondents faced complicated return policies.16% faced delivery issues and 11 % had difficulty in comparing products.

Conclusion:

The study was conducted to determine the impact on consumer behaviour towards online buying of electronic products. Online shopping seemed to be very convenient and beneficial but there are some potential problems that arise. The data collected through questionnaire shows that majority of the people shop occasionally and are satisfied with the shopping. It can be also seen that customers enjoyed various benefits such as convenience, better prices, variety of options available etc. But there are some challenges faced by the customers like uncertainty about product quality, complicated return policies, delivery issues and difficulty in comparing products etc. The major issue customers face is uncertainty about product quality. Consumers have seen to reveal different attitude while shopping electronic products from physical stores. But, the overall results prove that the respondents have perceived online shopping in a positive manner. These results can also by organisations used for targeting customer segments.

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The Role of Social Media in Promoting Starbucks' Sustainable Entrepreneurship Initiatives

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Abstract:
The strategic role social media plays in advancing Starbucks' sustainable entrepreneurship objectives is examined in this study. It looks at how Starbucks uses social media to meet its sustainability objectives, interact with a range of stakeholders, and uphold its core values of environmental stewardship, ethical sourcing, and corporate transparency as digital platforms continue to transform corporate communication. This study assesses how well Starbucks' digital strategies promote sustainable entrepreneurship using a mixed-methods approach that includes content analysis of the company's social media activities, interviews with significant stakeholders, and a close examination of its sustainability reports.
The results show that social media is an essential tool for raising stakeholder participation, consumer trust, and the worldwide reach of a business' sustainability narratives. In addition to being used for marketing, social media sites like Instagram, Twitter, and LinkedIn are used for meaningful conversation. This enables the business to address criticism and demonstrate quantifiable progress toward social and environmental objectives. The study also highlights how sustainability initiatives can gain more legitimacy and reach a larger audience by utilizing user-generated content, influencer collaborations, visual storytelling, and consistent messaging.
Additionally, the study addresses the function of audience targeting and data analytics in maximizing campaigns pertaining to sustainability. It demonstrates how Starbucks customizes material for various audiences in order to increase awareness and engagement. The report also assesses possible hazards like blowback from transparency gaps and greenwashing, providing information on how brands might avoid these problems. This study adds to the larger discussion on sustainable business practices in the digital era by tying corporate responsibility and digital engagement together.

Keywords: social media, corporate sustainability, ethical sourcing, environmental responsibility, digital communication, stakeholder involvement, brand trust, user-generated content, Starbucks, and sustainable enterprise

Introduction

Multinational firms now view sustainability as a key strategic concern, which has led to a rethinking of how businesses convey their goals and values. Customers and investors alike are calling for more openness and accountability from brands as public awareness of social injustice, environmental damage, and corporate responsibility grows. In this situation, sustainability is now a top business priority rather than a side project. Because of social media's wide reach and interactive characteristics, it offers businesses a unique way to meet sustainability goals and engage with a variety of stakeholders. These platforms serve as both communication and marketing tools, enabling companies to not only inform their clients but also involve them in their sustainability journeys. Establishing brand credibility, influencing public opinion, and advancing business legitimacy in the eyes of consumers all depend on this dynamic communication approach.

Through targeted social media communication, Starbucks, one of the most well-known coffee brands in the world, has successfully incorporated sustainable entrepreneurship into its brand culture. The business continuously incorporates its sustainability efforts into its digital storytelling, from community investment and climate action to ethical sourcing. Starbucks has developed a digital narrative that appeals to values-driven customers through carefully planned marketing, influencer collaborations, visual material, and hashtag movements.

Companies like Starbucks are expected to act ethically and to clearly and authentically explain their sustainability initiatives in an era where consumers are becoming more aware of ethical and environmental challenges. Starbucks has established itself as a pioneer in this field by incorporating these principles into its larger brand identity and coordinating its social media messaging with the Sustainable Development Goals (SDGs) of the UN. The company's digital marketing places a strong emphasis on issues like empowering communities, promoting fair trade, and lowering carbon emissions—all of which are essential elements of sustainable entrepreneurship.

This study examines Starbucks' digital sustainability strategy using a qualitative content analysis of secondary data that is accessible to the general public. It focuses especially on how the business conveys important sustainability ideas using social media sites like Instagram, LinkedIn, and Twitter (now X). This study attempts to identify the strategic components that support successful sustainability communication in the digital age by examining the format, content, and degree of interaction of Starbucks' posts. By doing this, it adds to the larger conversation about how big businesses can use social media to advance ethical business practices and strengthen their sustainability narratives.

Social Media's Contributions to Corporate Sustainability Communication

Starbucks uses a variety of social media platform capabilities to spread the word about its sustainability initiatives, gain the trust of stakeholders, and improve its reputation as an ethical business. Industry publications, Starbucks' own communications, and secondary data from social media analytics highlight a number of crucial elements that characterize the company's strategy for digital sustainability messaging:

Feedback and Conversation in Real Time

Starbucks uses real-time responses on social media sites like Instagram and Twitter to actively communicate with their audience in both directions. This enables the business to respond to inquiries about sustainability, rectify inaccurate information, and take note of client comments. For example, Starbucks has responded directly to consumers' questions regarding its straw-less lids or recyclable cups, indicating a dedication to openness and customer communication. This instant communication strengthens the brand's accountability while also giving it a human face.

Telling Stories on Several Platforms

Starbucks uses a multi-platform approach to customize its sustainability message to each social media platform's consumers and strengths:

• **LinkedIn** is used for more formal updates like corporate sustainability milestones, partnerships with NGOs, and employee engagement stories;

• **Twitter** offers quick updates, user engagement via hashtags, and participation in global conversations on climate change and ethical sourcing;

• **Instagram** is a visual storytelling platform that showcases vibrant imagery of sustainable coffee farming, eco-friendly store designs, and reusable cup campaigns.

This diversified storytelling approach ensures a wider reach and contextual resonance with different demographics.

Sentiment analysis and data-driven messaging

Starbucks' digital communication strategy is informed by social media data, including audience mood, click-through rates, and engagement metrics. To improve relevance and reach, the business modifies its messaging in real-time based on statistics. Higher-engagement posts—like those that tell the personal tales of coffee growers or have measurable effects, like waste reduction data—serve as models for subsequent posts.

Additionally, Starbucks tracks public opinion on sustainability concerns using social listening techniques. Starbucks modifies their messaging to stay in line with audience preferences by recognizing issues that are trending, such as plastic waste, carbon emissions, or ethical labor practices. Starbucks' responsiveness to its stakeholders is demonstrated by this flexible communication technique.

Use of Strategic Hashtags and Visual

Content Hashtags like #CoffeeWithACause, #SustainableStarbucks, and #StarbucksGreenerStores are used to promote customer involvement and bring together discussions about particular programs. These tags enable visitors to find similar information while also assisting the business in spreading its message.

The use of visual media is essential for demythologizing difficult sustainability ideas. Starbucks regularly uses infographics to display data regarding its supply chain transparency, water usage, and carbon footprint.

• Quick films and animations that describe the lifetime of recyclable cups or showcase sustainable farming methods.

• Behind-the-scenes material that highlights actions made in its supply networks and retail locations to achieve environmental objectives.

Particularly for younger audiences, these media formats improve followers' emotional involvement and retention of information.

Sensitivity to Trends and Flexible Marketing

Starbucks is renowned for its capacity to coordinate its digital sustainability initiatives with more general environmental and cultural movements. Starbucks aligns its messaging with international holidays like World Water Day, Plastic Free July, and Earth Day in order to increase its awareness and relevance. This strategic synergy raises the possibility of viral content and places the company in the global sustainability conversation.

One instance is its #Greener Together campaign, which aimed to spread the brand's ideals through user-generated content by encouraging followers to share their own eco-friendly practices throughout Earth Month.

Social Media's Advantages for Sustainability Promotion

Starbucks gains a number of advantages from its social media presence, according to secondary sources:

• **Accountability and Transparency:** Starbucks builds confidence by regularly updating their sustainability efforts.

• **Improved Stakeholder Relationships:** Community is created by participation through shares, comments, and teamwork.

• **Cost-Efficiency:** Social media provides a more affordable and focused way to disseminate sustainability messages than traditional media.

• Increased Impact: User-generated material increases the credibility of Starbucks' message and broadens its audience.

• **Education and Awareness:** Starbucks educates its audience about recycling, ethical sourcing, and climate change through interactive media formats.

• **Real-Time Engagement:** social media makes it possible to engage with people instantly, enabling rapid conversation with partners, customers, and detractors.
• **Brand Loyalty:** By fostering stronger emotional bonds, emotive storytelling about sustainability promotes enduring customer loyalty.
• **Internal Advocacy:** Through personal stories, social media enables staff members to act as brand advocates, advancing sustainability.
As mentioned in online campaigns and industry evaluations, Starbucks' brand trust is further increased through partnerships with influencers, non-governmental organizations, and third-party validators. Social media users who take part in initiatives like the #ReusableCupChallenge, for example, frequently share their own stories, which helps to naturally amplify messages.
Additionally, according to reports, Starbucks tracks the success of its messages and adjusts its strategy based on engagement indicators like likes, shares, and emotion. This ongoing feedback loop guarantees alignment with stakeholder expectations and improves communication precision.

Difficulties in Adopting Social Media for Sustainability
Despite the benefits, Starbucks suffers a number of difficulties, according to secondary sources:

- Risk of Greenwashing: Customers might doubt Starbucks' sincerity in the absence of concrete proof.
- Global Consistency: It can be challenging to keep a consistent sustainability message across global marketplaces.
- Handling Criticism: Starbucks is subject to public scrutiny thanks to real-time networks.
- Cultural Relevance: Careful localization is necessary to adapt messaging to local sensitivities.
- Information Overload: It's challenging to hold an audience's interest while competing with the abundance of entertainment content on social media.
- Language and Accessibility Barriers: Because of linguistic or technological constraints, certain consumers could not understand the message.
- Security and Misinformation: The perception of Starbucks' brand may be distorted by hacking incidents or the dissemination of false information.
- Content Fatigue: Posting frequently can desensitize viewers, which makes it more difficult to sustain high levels of engagement.
- Regulatory and Compliance Issues: Starbucks must abide by various data and marketing laws in various nations.
- Ethical Conundrums in Targeting: Concerns over consumer privacy may arise when personal information is used to target sustainability messaging.
- Platform Algorithms: Social media platforms' constantly evolving algorithms have the potential to impede the visibility and reach of messages.

Starbucks must continuously monitor and update its sustainability communication strategy to remain authentic and effective. Secondary research supports the need for robust governance of social media practices to avoid misalignment between corporate claims and public perception.

Social Media Transforming Core Aspects of Traditional Corporate Communication
Traditionally, corporate communication operated as a top-down, one-directional process characterized by press releases, official reports, and controlled messaging. Social media has fundamentally altered this structure, introducing elements of two-way communication, participatory storytelling, and real-time interaction. For companies like Starbucks, this represents a paradigm shift in how sustainability values are conveyed and perceived.
Starbucks now humanizes its brand through authentic narratives that include the voices of employees, farmers, and local communities. Posts featuring baristas engaging in sustainability efforts, behind-the-scenes footage of ethical sourcing operations, and community-driven campaigns transform stakeholders from passive recipients into active participants. These human-interest stories, often shared in real-time, foster relatability and trust. Social media also empowers Starbucks to replace lengthy CSR reports with bite-sized, interactive, and visually engaging updates. Instagram reels, Twitter threads, and LinkedIn posts enable timely and ongoing communication, rather than periodic disclosures. Starbucks often shares measurable outcomes of its sustainability programs, such as waste reduction figures or water conservation statistics, in infographic form to enhance transparency and accessibility.
Additionally, the company leverages employee advocacy by encouraging internal stakeholders to share their sustainability experiences online. This democratization of corporate messaging reflects a broader cultural shift toward openness and authenticity in business communication. Through interactive campaigns like #StarbucksEarthMonth and digital challenges encouraging eco-friendly behavior, Starbucks mobilizes a broader audience while reinforcing its brand identity. Starbucks also utilizes social media analytics to continuously refine its communication strategies. By tracking engagement patterns, feedback loops, and audience sentiment, the company can adapt its messaging to remain relevant and impactful. This data-driven adaptability is absent in traditional corporate communication channels, making social media an indispensable tool for modern sustainability efforts.

Literature Review

- Extensive secondary research reveals that social media significantly enhances sustainability communication. Kaplan and Haenlein (2010) emphasize the importance of two-way interaction for trust-building. Carroll and Shabana (2010) highlight that authenticity in CSR communication is crucial for long-term stakeholder relationships.
- Mangold and Faulds (2009) describe social media as a hybrid communication and promotion tool, essential in modern CSR strategies. Studies caution that superficial messaging risks consumer skepticism, making transparency a necessity. Starbucks addresses this with data-backed updates and verifiable progress in its public ESG reports.
- Dahlsrud (2008) and Kotler et al. (2010) emphasize alignment between sustainability messaging and stakeholder values. Starbucks’ mission-driven content aligns with this, consistently promoting community, ethics, and environmentalism. Research by Gill et al. (2021) supports Starbucks’ approach of incorporating third-party voices to enhance trust.
- Freeman et al. (2020) advocate for integrated reporting, which Starbucks accomplishes through synchronized social media and ESG disclosures. Morsing and Schultz (2006) argue for co-created communication strategies—a concept Starbucks applies via campaigns like #EarthMonth and reusable cup promotions.
- Colleoni (2013) discusses the challenges of digital trust, emphasizing evidence-based communication to combat misinformation. Starbucks uses infographics, metrics, and updates from credible sources to maintain trust. Cornelissen (2017) stresses message consistency, which is reflected in Starbucks’ uniform messaging across global platforms.
- In conclusion, research confirms that Starbucks' social media strategies, which are backed by secondary data, are in line with academic suggestions for clear, open, and engaging sustainability communication.

Research Methodology

This research is based entirely on secondary data. The following sources were utilized: • Content Analysis:

- Publicly available social media posts on Instagram, Twitter, and LinkedIn were reviewed.
- Industry Reports: Insights from digital marketing and CSR reports helped contextualize Starbucks’ strategies.
- Academic Literature: Peer-reviewed articles provided frameworks for understanding CSR communication.
- Company Reports: Starbucks’ Global Environmental and Social Impact Reports were analyzed for alignment with online messaging.

Social media posts from 2022–2024 were sampled to identify key sustainability themes and engagement strategies. Tools like NVivo and Excel were used to organize thematic content. Academic frameworks such as stakeholder theory and digital trust theory guided the interpretation of findings.

Findings and Recommendations

Starbucks uses social media to advertise their sustainability efforts in an efficient manner. The corporation leverages digital platforms to:

- Humanize its brand with relatable, grassroots stories, according to secondary data research.
- Encourage waste reduction, ethical sourcing, and environmental activism;
- Boost transparency and stakeholder involvement

Furthermore, Starbucks has demonstrated that meaningful customer interactions and brand loyalty are enhanced by real, consistent, and interactive digital content. Starbucks maintains its flexibility in a dynamic communication environment by combining digital storytelling with real-time data, third-party endorsements, and community feedback loops.

Starbucks should think about the following to improve its sustainability communication even more:

- Creating more content tailored to specific regions for global resonance;
- Expanding partnerships with verified environmental influencers;
- Providing educational formats such as blogs and webinars to increase impact;
- Continually monitoring social sentiment to improve messaging;
- Promoting internal culture sharing and employee advocacy on digital platforms
- Investing in inclusive and multilingual content strategies for increased global accessibility; using AI techniques to gain deeper insights on audience preferences
- Developing a centralized digital repository for all sustainability updates for better access and tracking;
- collaborating with academic institutions to provide credibility and research-backed content; testing out new media technologies, such as interactive dashboards for environmental metrics or virtual tours of sustainable farms;
- Forming a special task force for sustainability communication to guarantee cross-departmental alignment.
- Starting consumer awareness campaigns that inform audiences about sustainable habits;
- Conducting routine social media audits to assess message efficacy and audience alignment;

- Offering sustainability certification to staff members completing training in order to encourage involvement in CSR storytelling

Starbucks' reputation as a pioneer in corporate sustainability communication would be strengthened by these strategic improvements, which are backed by thorough secondary data analysis.

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A Study on Learners' Awareness of PersonalizedEducation Using Artificial Intelligence

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ABSTRACT

Artificial Intelligence (AI) is reshaping the education landscape by enabling personalized learning tailored to individual needs and progress. This research paper explores the level of awareness among diverse learners including undergraduate students, educators, and corporate professionals regarding AI-driven personalized education platforms.

With AI tools becoming increasingly integrated into learning environments, it is essential to understand how users perceive, utilize, and benefit from such technologies. This study employed a structured online survey to gather insights into the sources of information, usage habits, preferred AI features, and perceived challenges faced by learners and educators when engaging with AI in education.

Findings indicate that while many learners and professionals use AI-powered platforms such as ChatGPT, Duolingo, and Coursera, a significant portion remain unaware of the AI mechanisms behind them. Educators recognize the potential of AI in enhancing teaching efficiency but express concerns about losing the human touch and facing challenges in adopting new technologies. Commonly cited issues include lack of awareness, digital literacy gaps, concerns over data privacy, and dependency risks.

This study emphasizes the urgent need for strategic interventions, such as awareness campaigns, integration of AI literacy in academic curricula, and hands-on training for both learners and educators. By improving understanding and responsible usage of AI-based personalized learning tools, stakeholders can unlock the full potential of technology-enhanced education.

Keywords: Artificial Intelligence, Personalized Learning, Learner Awareness, Educational Technology, Adaptive Learning Platforms.

INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) has significantly impacted the education sector. One of the most promising applications of AI in this domain is personalized learning where content, pace, and feedback are adapted to suit individual learner needs. With increasing reliance on AI-powered tools such as ChatGPT, Duolingo, Khan Academy, and Coursera, it becomes critical to assess how well learners and educators understand and utilize these technologies.

This study aims to investigate the level of awareness, benefits, and challenges associated with personalized AI learning platforms among three user groups: students (UG), educators (teachers and professors), and professionals engaged in continuous education. The objective is to gather insights into their usage patterns, preferences, and perceived obstacles, and propose actionable solutions for wider and responsible adoption.

OBJECTIVES

- To identify the learners' sources of information regarding AI-based personalized learning tools.
- To study the extent to which learners use AI-powered educational platforms in their learning process.
- To analyse learners’ preferences for personalized learning features (adaptive content, AI tutors, real-time feedback, etc.).
- To recommend strategies for improving awareness and adoption of AI-based personalized education.

RESEARCH METHODOLOGY

- This study adopts a quantitative research methodology to investigate the awareness, usage, benefits, and challenges related to AI-powered personalized learning platforms among learners (students, teachers and professionals).
- The research is descriptive in nature and seeks to capture a snapshot of current perceptions and behaviours surrounding artificial intelligence in education. The primary data for the study was collected through a structured online questionnaire administered via Google Forms.
- The survey consisted of both closed-ended and multiple-choice questions to ensure clarity, consistency, and ease of data analysis.
- The survey included 20 questions and the sample size is approximately 132 respondents.

- The population targeted for the study includes three key stakeholder groups in the educational ecosystem: students, teachers and corporate professionals. Learners were defined as students of undergraduate (UG) program, educators included teachers, lecturers, trainers, and academic professionals engaged in teaching or curriculum planning. Corporate professionals include individuals working in different sectors. This diversified sampling ensured a holistic view of AI adoption and awareness in the education sector. A non-probability purposive sampling method was employed to reach respondents who were either studying, teaching in academic institutions or working in corporate sectors and were likely to have some interaction with digital or AI-based learning environments.
- The survey captured essential information such as the respondents' role in the education system, awareness of AI-based learning tools, frequency and purpose of AI tool usage, and their perception of the benefits and limitations of such tools.

FINDINGS

- AI-based learning platforms are popular, but understanding of their working is limited. Students and corporate professionals are more open and experimental with AI tools than educators.
- Educators show mixed reactions some are enthusiastic, while others are sceptical.
- Data privacy, lack of digital literacy, and absence of training are key concerns.
- AI is seen as a support tool, not a replacement for traditional education.

SUGGESTIONS

- Integrate AI literacy into teacher training, corporate organizations and school curriculum.
- Institutions should officially suggest trustworthy AI tools to minimize misinformation. Ensure AI tools provide up-to-date, contextually accurate responses through better training datasets and human oversight.
- Integrate multilingual support, text-to-speech, sign language AI, and screen-reader compatibility for learners with disabilities.
- Develop offline functionalities to reduce internet dependency.
- Implement transparent data policies and encryption to build trust.
- Combine AI tools with traditional teaching to retain human interaction while leveraging AI for personalized learning and efficiency.
- Offer free or subsidized access to AI tools for students in low-resource settings.
- Conduct workshops to educate users about maximizing AI tools effectively.

CONCLUSION

Artificial Intelligence is undeniably transforming education through personalized learning tools. However, the gap between user awareness and responsible usage remains. This study reveals that although students and professionals use AI tools actively, they lack comprehensive knowledge of their functionalities, risks, and potential. With proper awareness, training, and ethical guidelines, AI can be harnessed to revolutionize learning for all types of learners making it more inclusive, adaptive, and impactful.

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Intellectual Property Rights with Innovative update by India to its patent Rules

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Abstract
Intellectual means a personability to think, to understand and create ideas, all creation begins with an idea**,** the invention like telephone by gram bell, tube light by Thomas edition, books many known authors, paintings, symbols, names images by different companies or design used in business, it is the products of human creativity and skills. The capacity the thinking power by which human being creates the different ideas the invention new ideas, it is known as intellectual property. By using your mind if you create anything that property belongs to you. Just like other types of property, like business, flatcar can be given on rent like this the owner of IP can give or sell it to other people. Following are the content of I.P.R in India, the trade mark, copyrights, patent, Geographical Indication, and Plant variety. The importance of I.P.R it provides Protection of Innovation and Creativity, Economic Growth, Legal Awareness. India Has Introduced Innovative Updates to Its Patent Rule on March 15,2024, the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade) notified the Patents (Amendment) Rules,2024 in the Official Gazette of India, which have already come into effect from the date of publication, i.e., March 15, 2024. The amended rules aim to introduce substantial changes to align with international standards, promote innovations among innovators, and protect their rights. The amendments target key areas of concern in the Indian Patent practice and procedures and are poised to stimulate an increase in patent filing and processing within the nation.
Keywords–Intellectual property rights, Commerce and industry, Patents, Rules updates.

Introduction:
Intellectual means a person ability to think, to understand and create ideas, all creation begins with an idea. All creation begins with an idea, the invention like telephone by gram bell. tube light by Thomas edition, books by paintings, symbols, names images by different companies or design used in business, the products of human creativity and skills. the capacity the thinking power by which human being creates the different ideas the invention new ideas, it is known as intellectual property. By using your mind if you create anything that property belongs to you. Just like other types of property, like business, flatcar can be give non rent like this the owner of IP can give or sell it to other people.

- Trademark protects brand identifiers like logos and names, copyright protects original creative works like books and music, and patents protect inventions and processes, such as a new drug.
- Like writer Rudyard Kipling holds the ownership to his novel “the jungle book,
- The logo/ Brand Name Apple
- Signature tune of IPL.

The importance of intellectual property was first recognized in the Paris convention for the protection of Industrial property (1883) and the Berne convention for the protection of Literary and artistic works (1886). Both treaties are administered by the world intellectual property organization (WIPO).
It helps author, creator developers and owners to get recognition for their works
Its incentives provide financial benefits to inventors, authors creators etc for their work It encourages creation of new path breaking invention such as cancer cure medicine
It facilitates the transfer of technology in the form of foreign direct investment, join ventures and licensing.

1.2 Intellectual property right in India:

The following types of intellectual property rights are recognized in India

1.2.1 Trade mark

Trademark protects brand identifiers like logos and names, copyright protects original creative works like books and music, and patents protect inventions and processes, such as a new drug.

- **Definition:** A trademark is a symbol, design, word, phrase, or a combination there of that identifies and distinguishes a source of goods or services, preventing others from using confusingly similar marks.
- **Examples:** Nike's "swoosh, "the Apple logo, or the name "Coca-Cola".
- **Purpose:** To protect brand identity and prevent consumer confusion.

- **Duration:** Can be renewed in definitely as long as the trademark is in use.

1.2.2 Copyright:

- **Definition:** Copyright protects original works of authorship, including literary, dramatic, musical, and certain other intellectual works.
- **Examples:** Books, music, paintings, software, and films.
- **Purpose:** To grant creators exclusive rights to copy, distribute, adapt, display, and perform their works.
- **Duration:** Generally, the life time of the author plus70 years

1.2.3 Patent:

- **Definition:** A patent is a legal right granted to an inventor for an invention, typically for a limited period, giving them the exclusive right to make, use, and sell the invention.
- **Examples:** A new drug, a new type of engine, or a new manufacturing process.
- **Purpose:** To encourage innovation and invention by providing inventors with temporary protection for their creations.
- **Duration:** Typically,20yearsfrom the date of filing for utility patents.

1.2.4 Geographical indications:

A geographical indication tells consumers that a product is produced in a certain place and has certain characteristics that are due to that place of production. A geographical indication (GI)is a sign used on products that have a specific geographical origin and possess qualities or a reputation that are due to that forging. In order to function as GI assign must identify a product as originating in a given place

In the context of plant breeding and intellectual property, a "plant variety" refers to a group of plants within a single botanical taxon, distinguished by specific characteristics and capable of being defined, distinguished, and uniform, and stable, while "design" in this context refers to the process of creating or developing such a variety.

1.2.5 Plant Variety:

- Definition:
  A plant variety is a group of plants with in a single botanic altaxon (species)that are distinct, uniform, and stable in their characteristics.
- Distinctness:
  A new plantvarietymustbeclearlydistinguishablefromanyotherknownvarietybyoneor more characteristics.
- Uniformity:
  Allplantswithinavarietyshouldexhibitsimilartraitswhengrownunderthesameconditions.
- Stability:
  Thecharacteristicsofthevarietymustremainconsistentoversuccessivegenerationsand through various propagation methods.
- Intellectual Property:
  Plant varieties can be protected through plant breeder's rights, which give breeders exclusive rights to control the production, distribution, and marketing of their new varieties.
- Examples:
  Different types of tomatoes, wheat, or roses, each with unique traits, can be considered different plant varieties.
  Design:
- Process:
  In the context of plant breeding, "design" refers to the process of creating or developing a new plant variety with desired characteristics.
- Breeding:
  Plant breeders use various techniques, including selection, hybridization, and genetic modification, to design new plant varieties.
- Goal:
  The goal of plant breeding is to develop varieties that are more productive, disease-resistant, or have other desirable traits.
- Example:
  A plant breeder might design a new variety of wheat with higher yields and improved resistance to a specific disease.

1.2.6 Semi conductor integrated circuit layout Design

Semiconductor integrated circuit layout design refers to the three-dimensional arrangement of transistors, other circuitry elements, and interconnects within a semiconductor integrated circuit (IC), or chip, for manufacturing purposes.

Here's a more detailed explanation:

- Integrated Circuit (IC):
  A semi conducts or chip containing electronic components and circuits.

- Layout Design:

The specific arrangement of transistors, resistors, capacitors, and other components, along with the connecting wires (interconnects), on the IC.

- Purpose:
- This layout is crucial for manufacturing the IC, as it dictates how the chip will be fabricated using photolithography and other processes.

Intellectual Property:

The layout design is considered a form of intellectual property, and is protected by law in many countries, including India through the Semiconductor Integrated Circuits Layout-Design Act, 2000 (SICLD Act).

SICLD Act:

This act provides protection to the layout design of an integrated circuit, recognizing it a s a creative work and protecting it from unauthorized copying or piracy.

Examples:

- The arrangement of transistors to perform a logic gate.
- The placement of resistors and capacitors in a filter circuit.
- The routing of interconnects to connect different components.

Key Concepts:

Originality: The layout design must be the result of the creator's intellectual effort and not a commonplace design within the industry.

Not Commercially Exploited: The layout design should not have been commercially exploited anywhere in the world for more than two years prior to the filing of an application for registration.

Mask Work: In the context of US intellectual property law, a "mask work" refers to the two or three- dimensional layout of an integrated circuit.

Photomasks: The layout design is used to create photomasks, which are used in photolithographic processes to etch the layers of the IC.

Need and Importance of Intellectual Property Rights

1. Protection of Innovation and Creativity

IPR safeguards the rights of creators and inventors, encouraging continuous innovation across fields like technology, arts, healthcare, and business.

2. Economic Growth

Legal protection of intellectual property stimulates investment in R&D, leading to new products, industries, job creation, and overall economic development.

3. Legal Awareness

Studying IPR enhances understanding of legal rights and responsibilities, helping individuals and businesses avoid infringement and legal disputes.

4. Encouragement of Research and Development

Strong IPR systems motivate academic and industrial research by ensuring legal protection and commercial benefits for innovative work.

5. Global Trade and Competitiveness

In a global market, IPR helps businesses protect their innovations internationally, enhancing competitiveness and market value.

6. Support for Entrepreneurship

IPR enables entrepreneurs to secure and commercialize their ideas, attract investment, and establish a strong market presence.

Objective of the studies:

1. To strength the patent ecosystem in India by encouraging innovation ensuring timely and transparent protection of invention.

2. India’s patent law with global best practices there by fostering economic growth and technological advancement.

3. To understand the purpose of IPR in relation to patent including recent reform and policy changes.

4. The new initiatives like digitization of the patent process, start– up support or examination procedure.

Methodology:

This study is descriptive. It follows a qualitative research design to explore the significance, awareness, and implementation of Intellectual Property Rights, focusing on patents, trademarks, and copyrights.

Data Collection Methods

Literature review (books, journals, articles)

Case studies

Legal document analysis (e.g. patent/ trademark databases)

Data was collected through secondary sources, including academic journals, legal databases, and official reports from the World Intellectual Property Organization (WIPO) and national patent offices. In addition, case studies of specific companies were analyzed to understand real-world applications of IPR.

Literature Review:

1. A meta-analysis by Naves et al. (2021) examined the relationship between IPR protection, innovation, and economic growth. The study concluded that while IPR generally has a positive effect on innovation and growth, this effect is more pronounced in developed countries compared to developing ones. The authors suggest that the effectiveness of IPR protection is influenced by a country's level of technological capability and research

2. Patents vs. Trade Secrets
The decision between patenting an invention and maintaining it as a trade secret involves several considerations. A 2024 article highlighted factors such as the ease of detecting patent infringement
and the difficulty of reverse engineering the secret. While patents offer a limited monopoly in exchange for public disclosure, trade secrets rely on maintaining confidentiality for competitive advantage. The choice between the two depends on the nature of the invention and the strategic goals of the company.
3. Emerging Technologies and IPR
The advent of technologies like artificial intelligence (AI) and block chain has introduced new challenges and opportunities in there alms of IPR. A comprehensive study by Unni Krishnan (2024) delved into how these technologies impact patent law, copyright, and trademark regulations. The research emphasized the need for legal adaptations to ensure that IPR frameworks remain robust and adaptable in the digital age.
4. The integration of block chain technology in IPR management has been explored as a means to enhance transparency and security. Bajwa and Meem (2024) investigated the potential of block chain to revolutionize IPR by providing immutable records of creation and ownership, thereby addressing issues like unauthorized use and infringement.

5. IPR in Developing Countries
The relationship between IPR protection and innovation in developing countries has been a subject of debate. Khouilla (2024) reviewed literature on this topic, noting that while strong IPR protection can attract foreign direct investment and facilitate technology transfer, it may also limit local diffusion of technology. The study suggests that the optimal level of IPR protection varies based on a country's technological and economic context.

India has introduced Innovative Updates to Its Patent Rules

1. Law

On March 15, 2024, the Ministry of Commerce and Industry (Department For Promotion of Industry and Internal Trade) notified the Patents (Amendment) Rules, 2024 in the Official Gazette of India, which have already come into effect from the date of publication, i.e., March 15, 2024. The amended rules aim to introduce substantial changes to align with international standards, promote innovations among innovators, and protect their rights. The amendments target key areas of concern in the Indian Patent practice and procedures and are poised to stimulate an increase in patent filing and processing within the nation.

STATEMENT&UNDERTAKING(FORM-3)

1. **Form-3 Filing Time line Relaxed:**
   - Initial Form-3: Within 6 months of patent application filing (Rule 12(1)).
   - UpdatedForm-3: Within 3 months of first examination report (FER), not after every foreign filing (Rule 12(2)).
2. **Controller May Use External Databases:**
   - Controller can access foreign application data directly (Rule12(3)).
   - May still require updated Form-3within 2monthsif needed (Rule 12(4)).

3. **DelayinForm-3Submission:**
   - Delay condonable up to3 monthsviaForm-4 (Rule12(5)).
   - Fees: INR2,000/month(individual/startup/educational), INR10,000/month(others).
4. **Reduced Time for Request for Examination:**
   - From 48 to31 months (Form-18/18A), effective from **March 15, 2024**(Rule 24B(1)(i)).
   - Applications filed **before** March 15, 2024: 48-month time line still applies

1.1 FIRST EXAMINATIONREPORT

- **FER Response Extension**: Now allowed **upto 9 months** from FER issuance (was 6 months).
- Extension can be filed **after 6months** but **before 9 months**, using **Form-4**.
- Example: If response filed in 8th month, pay **2-month extension fee** with Form-4.

1.2 GRACE PERIOD

- **Form-31 Introduced (Rule29A)**: Inventors geta**12-month grace period** to file a patent after:
  - Display at a notified exhibition
  - Disclosure in a paper read before a learned society
  - Publication in society transactions (with consent)
  - Use of invention with/ without consent for exhibition
- **Form-31Fee:**
  - INR500: Individual/ Startup/ Small Entity/ Educational Institute
  - INR 2500: Others (Large Entity or with smaller entities)
- **Purpose**: Protects inventors' rights and allows public disclosure without losing patent eligibility.

1.2.1 OPPOSITION

The recently amended patent rules bring for the significant alterations to the pre-grant and post-grant opposition procedures to enhance efficiency and accountability within the realm of patent regulation.

1.2.2 Pre-grant Oppositions

- Pre-Grant Opposition Scrutiny:
  - Considered **only if a prima facie case** is made (Rule55(3)).
  - If not, opponent gets **hearing**, and Controller must pass a **speaking order within 1 month** (Rule 55(3)(a)).
  - If prima facie case exists, Controller must **notifyapplicantwithin1month** (Rule 55(3)(b)).
- Reply Timeline:
  - **Reduced to 2months** (from3) for applicant to respond (Rule55(4)).
- New Fee Introduced:
  - **INR 4000**: Individual/ Startup/ Small Entity/ Educational Institute
  - **INR 20000**: Others
  - Aimed at **discouraging frivolous oppositions**.

1.2.3 Post- Grant Opposition

Opposition Board Timeline:

- Report submission time **reduced from 3 to 2 months** (Rule 56(4)).

Post-Grant Opposition Fee (Online):

- **INR 20,000**: Natural Person/ Startup/ Small Entity/ Educational Institute
- **INR 40,000**: Others

1.2.4 CERTIFICATE OF INVENTORSHIP

- Form 8A Introduced (Rule70A):
  - Certificate of Inventor ship (for patent in force)–Fee: INR 900
  - Duplicate Certificate (with explanation)–Fee: INR 900
- Form 8(Sec 28(2)):
  - No fee for adding inventor's name in patent certificate.
- Goal: Encourage and recognize inventors.

1.2.5 RENEWAL FEE

As per the latest amendment in Rule 80(3), a 10% reduction in the official fee for renewal of a patent can be availed if the official fee for at least 4 years is paid in advance via an electronic mode.

1.2.6 PATENT AGENT EXAM

As per the amendment in Rule 110 (2), the syllabus of The Patent Agent Examination from the year 2024hasbeenrevisedandincludesbothThePatentActandRulesandTheDesignActandRules.

1.2.7 STATEMENT OFWORKING

- **Form 27 Filing (Rule 131(2)):**
  - Now require done every 3 financial years, instead of annually.
  - **First Form27:** Within 6 months after the next financial year post-grant.

- Subsequent filings: Every3 years, within 6 months after expiry.
- **Extension:**
  - Delay condon able up to3 months via Form 4.
  - Fee: INR2000 (Individual/Startup/Small Entity/Educational Institute), INR10,000 (Others).
- Form 27must include:
  - Whether patent is worked or not (no need for value/quantum).
  - Reason if not worked.
  - Whether available for licensing.
- **Benefits:**
  - Reduces filing burden.
  - Enhances commercialization opportunities.

1.2.8 CONDONING IRREGULARITIES OF DOCUMENTS

Rule 137 (2)– No Condonation Allowed For:

- Filing Form 3
- Submission of PCT/priority document translations
- FER response (normal &expedited)
- Pre-grant opposition reply
- Renewal fee payment
- Form 24 (review of Controller's decision)
- Form 27 delay
- National phase entry deadline

1.2.9 EXTENSION OF TIME LINES AND CONDONE DELAY

- Rule 138 (Amended):
  - Controller may extend/condone delay up to 6 months via Form 4, filed within the 6-month window.
  - Multiple requests allowed with in this period.
- Form-4 Fee (Online):
  - INR 10,000–Individual/Startup/Small Entity /Educational Institute
  - INR 50,000–Others

1.2.10 PATENT OF ADDITION

As per the latest amendment, a 50 percent discount on the official fee has been provided for an application for a patent made under Section 54.

AMENDMENT IN FEE STRCTURE

Patent (Amendment) Rules, 2024 also introduces change in the fee structure as illustrated below:

CHANGE IN FEES

Particulars	**Earlier Fees**	**New/ Updated Fees**	**Inference**
Rule 138: Power to extend time specified or condone delay	Individual/Small Entity/Startup/Educational Institution: INR 1600 Large Entity: INR 8000	Individual/Small Entity/Startup/Educational Institution: Rs 10,000/month Large Entity: INR 50,000/month	The fees have been increased more than 6- fold.
Filing of Pre-Grant Opposition – Form 7 A	No fee	Individual/ Small Entity/ Startup/ Educational Institution: INR 4000 Large Entity: INR 20,000	The fee introduction can reduce the number of oppositions particularly the oppositions which are filed by opponents just to delay the examination procure of a patent application.
Filing of Post - Grant Opposition – Form 7	Individual/Small Entity/Startup/Educational Institution: INR 2400 Large Entity: INR12,000	Individual/Small Entity/Startup/Educational Institution: INR 8000 Large Entity: INR40,000	-
Addition of Inventor [under Section 28(2)] – Form 8	Individual/Small Entity/Startup/Educational Institution: INR 800 Large Entity: INR4000	No Fee	

Rule 70A: Certificate of inventorship	Provision not available earlier.	Individual: INR900	
Patent of Addition	Individual/Small Entity/Startup/Educational Institution: INR 1600 Large Entity: INR8000	Individual/Small Entity/Startup/Educational Institution: INR 800 Large Entity: INR4000	50%reductioninfee.

A new column of gender has been introduced in Application for Grant of Patent (Form1). Anew gender-neutral category has been introduced as "prefer not to disclose" to recognize non-binary people (those who do not identify as male or female) and their rights. The gender-neutral column in Form 1 shall definitely promote filing of patent in non-binary people as well.

Conclusion:
The recent amendments to India's Patent Rules (2024) mark a significant step toward modernizing the country's intellectual property ecosystem. By simplifying procedures, reducing compliance burdens, and encouraging faster patent processing, the government has demonstrated its commitment to fostering innovation and aligning with global best practices. Key reforms, such as extended timelines, relaxed statement of working requirements, and provisions for startup-friendly processes, are expected to improve accessibility and efficiency within the IP system. These updates not only support inventors and startups but also strengthen India's position in the global innovation landscape.

Suggestions

1. **Increase Public Awareness and Education**
   The government should launch targeted awareness campaigns to educate innovators, MSMEs, and academic institutions about the updated patent rules to ensure better utilization.
2. **Enhance Digital Infrastructure**
   Further investment in AI-based patent filing, examination, and search tools can streamline processes and reduce manual workload.
3. **Support for Startups and Academia**
   Establish dedicated IP support cells in universities and incubators to guide startups through the patent filing and management process under the new rules.
4. **Regular Stakeholder Consultations**
   Continued engagement with IP professionals, industry bodies, and legal experts can help assess the impact of rule changes and guide future reforms.
5. **Capacity Building in Patent Office**
   Strengthen human resources and training at the Indian Patent Office to manage increased applications and ensure timely examinations and decisions.

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A Comparative Study of Online Buying Intention of Gen Y And Gen Z With Respect to Apparel

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Abstract

The aim of this study is to compare the online purchasing intentions of Generation Z and Generation Y with regard to clothing, highlighting the parallels and discrepancies between these two cohorts. A structured, closed-ended questionnaire was used as the research instrument to gather data from respondents in Mumbai for this study. The study included 200 participants in all, 100 of whom were from Generation Z and 100 of whom were from Generation Y. A T-Test statistical analysis was then used to test the hypothesis. The study reveals no significant difference between Gen Y and Gen Z's intentions to purchase apparel online.

Keywords: Gen Y, Gen Z, online buying intention, apparel.

1. Introduction:

The rise of e-commerce has revolutionized the way consumers shop, with online apparel shopping being a significant contributor to this growth. Two generations that have grown up in this digital age are Generation Y (born 1981-1996) and Generation Z (born 1997-2012). These generations have distinct characteristics, values, and shopping behaviour that influence their online buying intentions.

Online buying intention refers to a consumer's willingness or plan to purchase a product or service through an online platform, such as an e-commerce website, online marketplace, or social media channel.

2. Review of Existing Literature:

1. Hasan, B. (2020) investigated how the COVID-19 pandemic altered online shopping behaviour in Saudi Arabia. Using a survey of 1,200 participants, the authors found that perceived usefulness, trust, and social influence significantly increased online shopping intention during the pandemic. Fear of physical stores also accelerated e-commerce adoption.

2. Lim, Y. J. et al. (2016) explored how website quality, security, and social influence affect online purchase intention in Malaysia. A structural equation model (SEM) of 300 respondents revealed that security and social norms mediate the relationship between website design and purchase decisions. Trust in the platform was critical.

3. Liébana-Cabanillas, F. et al. (2017). identified key drivers of mobile shopping adoption in Spain. Results showed perceived ease of use, perceived risk, and trust in payment systems as primary predictors. The hybrid method improved prediction accuracy by 18%.

4. Sharma, S. et al. (2019) Focused on social media-driven shopping, this U.S.-based study found that trust in peer recommendations outweighs trust in brands or influencers. A survey of 412 users highlighted that transparency and user-generated content are vital for purchase intention.

5. Hussain, S. et al. (2020 analysed 523 Chinese online shoppers, this study found that perceived service quality directly impacts satisfaction, which in turn drives loyalty. Trust moderates this relationship, emphasizing the need for reliable platforms.

6. Li, H. et al. (2015) in their experimental study tested how online reviews influence trust and purchase decisions. Results showed that high-quality reviews boost trust more than quantity. Negative reviews were less impactful if offset by positive ones.

7.Dabbous, A., & Barakat, K. A. (2020) examined how Gen Z's heavy reliance on social media and mobile-first shopping behaviour translates into purchase decisions. Findings show that impulsive buying triggered by Instagram ads and TikTok trends is common, but trust in influencers and peer reviews mediates actual purchases.

8. Priporas, C.-V., Stylos, N., & Fotiadis, A. K. (2017) highlighted Gen Z's preference for seamless, tech-driven shopping experiences. Unlike Gen Y, Gen Z values instant gratification and personalized recommendations but distrusts traditional e-commerce platforms lacking transparency.

10. Noble, S. M., Haytko, D. L., & Phillips, J. (2022) Comparing Gen Y and Z, found that Gen Z prioritizes sustainability and ethical branding more strongly. Both generations rely on Instagram and YouTube for product discovery, but Gen Z is more likely to boycott brands that fail eco-friendly claims. Interestingly, Dimock, M. (2019) noted that Gen Z is more pragmatic and financially cautious than Gen Y, influencing their preference for budget-friendly, value-driven online shopping.

Research Gap: Although research on the online shopping habits of Generation Y and Z have been conducted, none have compared their online purchasing intentions with regard to apparel, which is why this article was written.

3. Objective of the paper:

To compare the online buying intention of Gen Y and Gen Z with respect to apparel.

4. Hypothesis:

Ho: There is no difference in the online buying intention of Gen Y and Gen Z with respect to apparel.

5. RESEARCH METHOD:

A well-structured closed ended questionnaire was used to collect primary data. A total of 200 usable responses were collected from college students studying in different colleges in Mumbai using a combined method of sampling. The variables were measured through a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The hypothesis was tested using t-test.

6. ANALYSIS OF DATA AND FINDINGS

The data has been analysed with the help of Microsoft Excel and MYSTAT Software. To test the hypothesis, t- test was used after examining its assumptions. The Shapiro-Wilk test was applied to check the normality of the data and Leven's test was applied to check the equality of variance.

TABLE

▼Descriptive Statistics

	ONLINE_BUYING_-INTENTION_OF_G-EN_Y	ONLINE_BUYING_-INTENTION_OF_G-EN_Z
N of Cases	100	100
Minimum	4.000	4.000
Maximum	20.000	20.000
Arithmetic Mean	12.770	12.170
Standard Deviation	3.792	2.995
Shapiro-Wilk Statistic	0.955	0.939
Shapiro-Wilk p-value	0.002	0.000

Table 1 shows the descriptive statistics. The value of Shapiro-Wilk test is less than 0.5 which shows that the data is not normal but since n = 100 per group (large sample), the sampling distribution of the mean will approximate normality. This justifies using a parametric t-test despite non-normal raw data.

TABLE 2

▼Hypothesis Testing: Two-sample t-test

```
      ¦                 Standard
GROUP ¦   N      Mean   Deviation
------+------------------------
0     ¦ 100   12.770       3.792
1     ¦ 100   12.170       2.995

Separate Variance

Difference in Means         :   0.600
95.00% Confidence Interval :  -0.353 to 1.553
t                           :   1.242
df                          : 187.914
p-value                     :   0.216

Pooled Variance

Difference in Means         :   0.600
95.00% Confidence Interval :  -0.353 to 1.553
t                           :   1.242
df                          : 198.000
p-value                     :   0.216
```

The t-test results (Table 2) indicate no significant difference in online apparel buying intentions between Gen Y and Gen Z, as the p-value (0.216) is greater than the 0.05 significance level, leading us to fail to reject the null hypothesis.

7. Limitations and Suggestions for Future Studies:
Since the sample size of the study was small a future study on a large sample size will be more reliable. This study mainly focused on comparing the buying intention of Gen Y and Gen Z, other studies could be taken out to know the factors influencing the buying intention. Also, it is highly recommended to carry out future researches with respect to other generations. The present study only focused on online buying intention; further studies may be carried out using other variables.

8. Conclusion:
This study examined the online buying intentions of Generation Y (Millennials) and Generation Z concerning apparel purchases, revealing distinct generational preferences.

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Green finance–Gauging awareness and interesting Green Investment

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ABSTRACT

Green finance is a proactive approach by financial institutions to contribute to environmental sustainability by promoting eco-friendly practices, offering green financial products, and reducing the carbon footprint of banking operations. The primary objective of this study was to assess the awareness, perception, and adoption of green finance and sustainable investment products within financial institutions. The research aimed to explore bank employee perspectives, identifying key challenges and opportunities for increasing green finance adoption. The data was collected through a Structured Questionnaire through respondents of Pune City. It was found that majority of respondents being employees of bank and financial institutions were aware about green finance, but the same could not be said about the customers. It was also observed that there was an increase in customer demand for green financial products, with Millennials and Gen Z evincing keener interest in green investments vis-à-vis older customers.

Keywords: Green Finance, Sustainable Finance, Green Investment, Carbon Credit

Introduction

Green finance refers to financial investments directed toward projects, initiatives, and ventures that have a positive environmental impact, promote sustainability, and support the transition to a low-carbon economy. It has emerged as a crucial component of the global financial system, addressing challenges such as climate change, resource depletion, and environmental degradation. The primary objective of green finance is to align financial flows with sustainable development goals (SDGs), fostering economic growth while ensuring environmental sustainability.

Statement of the Problem

The global financial sector is experiencing a growing shift towards sustainable finance and green investment products, driven by concerns about climate change, regulatory policies, and investor demand for environmentally responsible financial solutions. However, despite these global trends, the adoption of green finance in many financial institutions remains slow and inconsistent. This study seeks to address several key issues related to awareness, perception, and adoption of green financial products among financial institutions and their customers. The core problems identified include:

1) Many customers are unfamiliar with the concept of green finance and its benefits.
2) Customers often struggle to differentiate between traditional and green financial products.
3) There is limited knowledge about government incentives or policies supporting green finance.
4) A significant number of customers prioritize financial returns over sustainability, leading to lower interest in green investments.
5) Many customers perceive green financial products as expensive and financially risky.
6) There is skepticism regarding the authenticity of green financial initiatives due to concerns about greenwashing.
7) Bank employees often lack confidence and adequate training to promote green financial products effectively.
8) Many financial institutions do not actively market or educate customers about sustainable investment opportunities.
9) There is a lack of accessible and clear information about green finance options for both employees and customers.

Objectives of Study

The primary objective of this study is to assess the awareness, perception, and adoption of green finance and sustainable investment products within financial institutions. The research aims to explore bank employees' perspectives, identifying key challenges, opportunities, and recommendations for increasing green finance adoption.

Primary Objectives

1. To assess the level of awareness and understanding of green finance among financial institution employees and customers.

2. To analyze customer perceptions and concerns regarding green financial products, including their willingness to invest in sustainable options.
3. To evaluate the role of financial institutions in promoting, educating, and marketing green investment options.
4. To identify barriers and challenges preventing the widespread adoption of green finance among customers.
5. To examine the level of training and preparedness of financial institution employees in discussing and promoting green finance.
6. To investigate trends in customer demand for green finance, particularly among different demographic groups (e.g., Millennials and Gen Z).

Secondary Objectives

1. To explore whether customers prioritize financial return so ever environmental sustainability in their investment decisions.
2. To assess whether customers trust financial institutions' green finance initiatives, or if concerns about greenwashing are limiting adoption.
3. To determine whether financial institutions provide sufficient training and resources to their employees for engaging customers in discussions about sustainable banking options.
4. To provide strategic recommendations for financial institutions to enhance customer awareness, engagement, and adoption of green financial products.

Key Components of Green Finance

Green Bonds

Green bonds are debt securities issued specifically to raise funds for eco-friendly projects, such as renewable energy, clean transportation, and climate resilience initiatives. These bonds attract investors who prioritize sustainability while offering returns similar to conventional bonds.

Examples: 1) Sovereign green bonds issued by India's State Bank of India (SBI) to fund renewable energy projects. 2) Corporate green bonds issued by Apple to support energy- efficient facilities and recycling initiatives.

Sustainable Investment Funds

Sustainable investment funds focus on investments that meet Environmental, Social, and Governance (ESG) criteria. These funds allocatee capital to companies and projects that adhere to sustainability principles while generating financial returns.

Examples – 1) ICICI Prudential Green Fund, which invests in environmentally responsible businesses.
2)ESG-focused Exchange-Traded Funds (ETFs) that track sustainable companies.

Green Loans

Green loans are financial instruments designed to support energy-efficient and environmentally sustainable projects. These loans help businesses and individuals implement green initiatives such as solar installations, energy-efficient buildings, and waste management projects.

Example: Yes Bank's green loans, which finance renewable energy projects such as solar farms and wind energy installations.

Sustainability-Linked Bonds (SLBs)

Sustainability-Linked Bonds (SLBs)are debt instruments tied to a company's achievement of specific sustainability performance targets, such as reductions in carbon emissions or increased use of renewable energy.

Example: Indian corporate SLBs that incentivize emission reduction by offering lower interest rates upon meeting predefined sustainability goals.

Green Insurance

Green insurance policies are designed to cover risks associated with environmental hazards, climate disasters, and pollution-related liabilities. These insurance solutions provide financial protection against extreme weather events and environmental damage.

Example: Climate risk insurance policies for farmers in India, helping them mitigate losses from droughts and floods.

Carbon Trading

Carbon trading mechanisms enable businesses and governments to buy and sell carbon credits to meet regulatory emission targets. This market-based approach incentivizes companies to adopt cleaner technologies and reduce greenhouse gas emissions.

Example: India's participation in international carbon markets, where companies trade carbon credits to comply with emission norms.

Significance of the Study

This project holds significant importance as it provides insights into the adoption, awareness, and challenges of green finance within financial institutions. By analyzing the perceptions of bank employees, the study aims to bridge gap sin knowledge, accessibility, and trust regarding sustainable financial products. The significance of this project can be categorized into the following areas:

1) Green finance drives sustainable economic growth by funding renewable energy, energy efficiency, and climate-resilient infrastructure.
2) Financial institutions play a crucial role in environmental sustainability through responsible banking and green investment options.
3) Limited customer awareness hinders green finance adoption, requiring targeted marketing and educational campaigns.
4) Understanding Millennial and Gen Z preferences helps financial institutions design customized green financial products.
5) Assessing employee training in financial institutions identifies gaps and enhances expertise in sustainable investment products.
6) Key adoption barriers include high costs, green washings kept ices, and lack of accessible information on green finance.
7) Financial institution scan improves transparency, affordability, and trust to boost green finance participation.
8) Insights from this study help policy makers refine sustainable finance regulations and encourage institutional adoption.
9) The study enhances green finance literature, particularly in developing markets, aiding researchers and industry experts.
10) Findings help financial institutions improve green finance product offerings, increasing customer engagement and investment inflows.

Review of Literature:

- Bansal (2021) conducted a secondary research study analyzing India's regulatory framework for green finance, reviewing RBI guidelines, SEBI regulations, and government sustainability policies. Using policy analysis and comparative analysis, the study found that while India has policies for green finance, their implementation remains inconsistent, leading to slow adoption.
- Gupta et al. (2022) studied public trust in green banking initiatives and concerns about green washing in India. They conducted primary research via online surveys with 600 banking customers across Tier 1 and Tier 2 cities. Using sentiment analysis and chi-square tests, they found that 49% of respondents were skeptical about banks' true commitment to sustainability, fearing greenwashing practices.
- Kumar et al. (2021) examined the role of green bonds and sustainable investments in India. The study was secondary research, using market reports, RBI data, and SEBI filings. Applying timeseries analysis, they found that green bond issuances in India grew by 32%from 2017 to 2021, indicating rising institutional interest.
- Mehta and Choudhary (2020) conducted primary research through surveys in Bangalore, Chennai, and Pune with 700 banking customers. The objective was to evaluate willingness to investing green financial products. Using factor analysis and logistic regression, they found that 54% of young customers (aged 25-40) were open to green investments, but perceived high costs deterred many investors.
- Patel (2019) analyzed how Indian banks integrate sustainability into their financial services. The study used secondary data from RBI reports, annual bank reports, and policy guidelines. Using content analysis and trend analysis, the study found that leading Indian banks such as SBI and ICICI Bank have introduced green finance products, but customer outreach remains low.
- Reddy (2019) focused on rural financial institutions and their challenges in promoting green finance. The study involved primary interviews with 200 bank employees in rural Karnataka and used qualitative the Matic analysis. The findings showed that rural banks lacked knowledge about green finance products, and there was a gap in customer education regarding sustainability benefits.
- Shah and Desai (2020) studied whether Indian banking employees receive sufficient training on green finance. Conducting primary research via structured interviews with 250 bank employees across Mumbai and Ahmedabad, they used content analysis for evaluation. Results showed that 63% of employees felt unprepared to discuss green investments with customers, highlighting the need for better training programs.
- Singh and Sharma (2018) conducted a primary survey-based study in Delhi and Mumbai to assess awareness and perception of green bank in among urban customers. The study used structured questionnaires with a sample size of 500 bank customers and applied descriptive statistics and chi-square analysis. Findings revealed that only 40%ofrespondents were aware of green banking initiatives, and most relied on traditional banking methods due to a lack of accessible information.
- Srinivasan and Rao (2020) explored how digital banking influences customer adoption of green finance. Conducting secondary research using fintech industry reports, they applied trend analysis and consumer behavior modeling. Findings indicated that the rise of digital banking apps significantly improved green finance

awareness, with a 28% increase in online subscriptions for green investment products in India between 2018 and 2020.

- Verma and Kapoor (2018) examined how ESG (Environmental, Social, and Governance) investments impact stock market performance in India. The study used secondary data from NSE and BSE indices, applying regression analysis and market trend studies. Findings revealed that Indian ESG funds outperformed traditional funds by an average of 6% annually over five years.

Methodology:

Scope of Study:

❖ **Geographic & Institutional Scope**

The study is conducted within financial institutions, covering employees from various roles, including customer service representatives, relationship managers, financial advisors, and risk officers.

❖ **Thematic Scope**

The study explores multiple dimensions of green finance, including:

1) Customer Awareness &Understanding:
   - Familiarity with green finance concepts, products, and government policies.
   - Perceptions of financial risks and returns related to sustainable investments.
2) Customer Behavior & Decision-Making:
   - Factors influencing investment decisions in green products vs. traditional finance.
   - Willingness to accept lower returns for sustainable investments.
3) Financial Institution Initiatives & Employee Readiness:
   - Employee confidence in discussing green finance with customers.
   - Adequacy of training and resources provided by financial institutions.
   - Perceptionoffinancialinstitutions'effortsinmarketingandeducatingcustomersabout green investments.
4) Challenges & Barriers to Green Finance Adoption:
   - Concerns about green washing and lack of trust in financial institutions.
   - Perceived cost and accessibility issues of green investment options.
   - Lack of clear and accessible information for customers.
5) Opportunities & Future Trends:
   - Rising demand for green financial products.
   - Interest from younger generations (Millennials & GenZ) unsustainable investments.
   - The potential role of government incentives, policies, and find tech in novation's in promoting green finance.

Sample Design:

Universe	Infinite
Sampling Unit	400
Sample Size	110
Method of Sampling	Non-Probability Purposive/Judgmental Sampling
Instrument	Structured Questionnaire

Data Collection:

This study relies on primary data collection through field visits to financial institutions. The data was gathered by directly interacting with bank employees across different roles to understand their perspectives on green finance and sustainable investment products.

The data was collected in different areas named Koregaon Park, Bund Garden, Dhole Patil Road, Mundhwa, Keshav Nagar, Peth Areas, Viman Nagar, Tingre Nagar, Camp, and Magarpatta of Pune City.

Secondary Data consisting of Websites, Journals and Magazines were also referred.

Pilot Study: A pilot study was conducted in which five key Bank officials were approached. Based on their interactions and responses, the questionnaire was revised, and the finalized version had 27 questions.

Tools of Analysis:

Tables and charts were used to analyse the data. The collected data was coded and then tabulated in MS Excel. Thereafter Pivot reports were generated to aid in analysis.

Limitations of Study:

Geographical Constraints: The study was conducted with in a limited number of banks, so results may not represent all financial institutions.

Self-Reported Bias: Respondents' answers may be influenced by personal perceptions or institutional culture.

Result and Discussion:

This survey aimed to assess the awareness, perceptions, and engagement levels of financial professionals and customers regarding green finance. The findings highlight key trends in training, customer interest, product perception, institutional efforts, and challenges in adoption. Based on the survey results, the following26 key findings have been derived from the survey data:

Demographics and Professional Background

1. **Gender Representation:** The majority (67%) of respondents were male, while 33% were female, indicating a gender gap in the financial sector.
2. **Educational Qualifications:** A significant number (58%) of respondents had a master's degree, followed by38% with a bachelor's degree, suggesting a well-educated workforce in financial institutions.
3. **Current Job Roles:** Half (50%) of the respondents worked in various other positions, while 30% were relationship managers, indicating diverse roles within the financial sector.
4. **Years of Experience:** Most respondents (37%) had between 4–7 years of experience, showing that a majority of employees were mid-level professionals.

Awareness and Training on Green Finance

5. **Training on Green Finance:** A significant majority (71%) had received training on green finance or sustainable investment products, indicating efforts in financial institutions to promote green finance education.
6. **Customer Awareness of Green Finance:** While 43% of respondents agreed that customers are familiar with the concept of green finance, 22% disagreed or strongly disagreed, showing a mixed level of awareness.

Customer Interesting Green Finance

7. **Customer Inquiries on Green Investment:** Only 28% of respondents agreed that customers frequently inquire about green investment products, whereas34%disagreed, indicating limited customer engagement.
8. **Understanding of Green vs. Traditional Finance:** 41% of respondents believed that customers understand the difference between traditional and green financial products, though 29% remained neutral.
9. **Awareness of Government Incentives:** A considerable percentage (40%) of respondents stated that customers are unaware of government incentives and policies related to green finance, suggesting a lack of information dissemination.
10. **Growing ESG Awareness:** Around45%ofrespondentsagreedthatthereisincreasing customer awareness of Environmental, Social, and Governance (ESG) investing, while 28% remained neutral.

Customer Preferences and Behavior

11. **Interesting Sustainable Banking Options:** A moderate interesting sustainable banking options (such as green loans and eco-friendly accounts) was observed, with 40% agreeing while 32% remained neutral.
12. **Sustainability Considerations in Investment Decisions:** About 37% of respondents believed that customers consider sustainability factors when making investment decisions, though 38% either disagreed or remained neutral.
13. **Rising Demand for Green Financial Products:** A majority (53%) of respondents observed an increase in customer demand for green financial products over the past year.
14. **Younger Generations and Green Investments:** Most respondents (76%) agreed that Millennials and Gen Z show more interest in green investments compared to older customers.
15. **Willingness to Accept Lower Returns:** While 46% of respondents stated that customers were willing to accept slightly lower returns for sustainable investments, 35% either disagreed or remained neutral.
16. **Perceived High Cost of Green Products:** A majority (57%) of respondents agreed that customers perceive green financial products as more expensive than traditional products.

Challenges and Barriers in Green Finance Adoption

17. **Customer Hesitation Due to Financial Risks:** A significant proportion (59%) of respondents stated that customer she situates to investing green products due to perceived financial risks.
18. **Lack of Clear Information on Green Investments:** Half (50%) of the respondents agreed that there is a lack of accessible and clear information on green investment options for customers.
19. **ConcernsAboutGreenwashing:**60%ofrespondentsagreedthatmanycustomersdo not trust that financial institutions genuinely support sustainability, raising concerns about greenwashing.
20. **Financial Priorities Over Environmental Impact:** Around 59% of respondents agreed that customers prioritize financial returns over environmental impact when making investment decisions.

Financial Institution Support and Employee Confidence

21. **Confidence in Discussing Green Finance:** A majority (62%) of respondents felt confident discussing green financial products with customers, though 28% remained neutral.
22. **Adequacy of Training and Resources:** More than half (52%) of respondents believed that their institution provides adequate training and resources to promote green finance, while 24% remained neutral.
23. **Marketing and Customer Education Efforts:** About 67% of respondents agreed that their institutions actively market and educate customers about green investment options.
24. **Need for More Training:** A majority (82%) of respondents expressed a desire to receive more training on engaging customers about green financial products.
25. **Need for Greater Institutional Efforts:** A large majority (85%) of respondents believed that financial institutions should do more to encourage green finance adoption among customers.
26. **Green Finance Adoption Still in Progress:** While awareness and interest in green finance are growing, major challenges remain, including customer hesitation due to perceived costs and risks, lack of information, and skepticism about financial institutions 'sustainability commitments. More training, marketing efforts, and policy incentives are needed to drive further adoption.

Key Issues & Challenges

Limited Customer Awareness & Education on Green Finance

- Only 43% of respondents believe customers are familiar with green finance.
- Many customers denote actively inquire about green financial products (34%disagreethat they do), suggesting low awareness levels.
- Government incentives remain largely unknown (only 27% of respondents believe customers are aware).
- 69% believe there is a lack of accessible and clear information on green investment options.
- Implication: Customers may not be engaging in green finance due to a lack of understanding. Institutions need to enhance education and simplify product information to encourage participation.

Cost & Profitability Concerns

- 57% believe customers perceive green financial products as more expensive than traditional alternatives.
- 59% think customers hesitate to invest due to financial risk concerns.
- 59% believe customers prioritize financial returns over environmental benefits.
- Only 46% of respondents think customers are willing to accept slightly lower returns for sustainability.
- Implication: Financial institutions must demonstrate competitive returns for green investments while emphasizing long-term cost savings and incentives.

Green washing &Trust Issues

- 60% believe customers do not trust financial institutions' sustainability commitments.
- Concerns about green washing (false sustainability claims) may deter customers from adopting green finance products.
- Implication: To build trust, institutions should ensure transparency, report measurable sustainability impacts, and avoid misleading environmental claims.

Slow Customer Engagement& Demand

- Only 28% of respondents say customers frequently inquire about green finance.
- 24% believe their institutions do not provide sufficient training or resources to promote sustainable finance.
- 43%of respondents disagree or are neutral when asked whether customers understand the difference between traditional and green financial products.
- Implication: Financial institutions need more proactive marketing, customer engagement, and employee training to increase demand.

Opportunities for Growth & Improvement

Expanding Green Finance Training for Employees

- 82% of respondents express interesting receiving more training to engage customers about green financial products.
- 62% feel confident discussing green finance, but 28% remain neutral.
- Opportunity: Institutions and envelop specialized training programs to enhance staff confidence and expertise in sustainable finance.

Targeting Younger Customers (Millennials & GenZ)

- 76% believe Millennials and Gen Z show more interest in green investments than older generations.
- Younger investors are more environmentally conscious and willing to support sustainable finance if properly

informed.

- Opportunity: Institutions and envelope youth-focused marketing strategies and tailored investment products to attract the next generation of sustainable investors.

Leveraging Digital Platforms to Educate & Promote Green Finance

- Digital banking and fintech can simplify access to green investment information.
- AI-driven financial advisory tools can help customers make informed choices based on sustainability preferences.
- Opportunity: Institutions should integrate ESG investment options in to digital banking platforms and develop easy-to-use tools for sustainability-focused investment tracking.

Strengthening Government & Institutional Partnerships

- Many customers are unaware of government incentives supporting green finance.
- Collaborations with regulators and policymakers can help create awareness campaigns and better incentives for green investments.
- Opportunity: Financial institutions can work with governments, NGOs, and sustainability bodies to educate customers and offer tax benefits or subsidies for green investments.

Emerging Trends in Green Finance

Growing Interest in ESG (Environmental, Social, Governance) Investing

- 45% of respondents believe there is growing awareness of ESG investing among customers.
- Institutions are increasingly incorporating ESG factors into investment portfolios to attract sustainability-conscious investors.

Development of New Green Financial Products

- The demand for green loans, eco-friendly savings accounts, and impact investment funds is rising.
- Green bonds and sustainability-linked investment products are becoming more popular in global markets.

Policy & Regulatory Shifts Toward Green Finance

- Governments are introducing stricter sustainability disclosure requirements for financial institutions.
- Institutions that align with global ESG standards may gain a competitive advantage.

Technology-Driven Sustainable Finance Solutions

- F in tech innovations, such as carbon footprint tracking, AI-driven ESG scoring, and blockchain for sustainable investment verification, are reshaping the industry.

Conclusion:

The study provided meaningful insights into the current state of awareness, perceptions, and adoption of green finance among financial professionals and customers. The findings revealed a growing interest in sustainable finance, especially among younger generations, but also highlighted significant challenges such as limited customer awareness, trust issues, and perceived financial risks. While institutions are making efforts through training and marketing, there remains a strong need for enhanced education, affordable green financial products, and greater institutional commitment.

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Annexure:
Structured Questionnaire

Sadhu Vaswani Institute of Management Studies for Girls
Green Finance: Gauging Awareness and Interest in Green Investments

Name: ______________________________

Name of Organization: ______________________________

Section 1: Demographics
(Please select the most appropriate option for each question.)

1. **Age Group:**
   - ☐ Under 25
   - ☐ 25-34
   - ☐ 35-44
   - ☐ 45-54
   - ☐ 55+
2. **Gender:**
   - ☐ Male
   - ☐ Female
   - ☐ Other
3. **Highest Level of Education:**
   - ☐ High School Diploma
   - ☐ Bachelor's Degree
   - ☐ Master's Degree
   - ☐ Doctorate / Ph.D.
   - ☐ Other (Please specify) ________
4. **Current Position in the Financial Institution:**
   - ☐ Customer Service Representative
   - ☐ Financial Advisor / Investment Consultant
   - ☐ Relationship Manager
   - ☐ Risk & Compliance Officer
   - ☐ Other (Please specify) ________
5. **Years of Experience in the Financial Sector:**
   - ☐ Less than 1 year
   - ☐ 1-3 years
   - ☐ 4-7 years
   - ☐ 8-10 years
   - ☐ More than 10 years
6. **Have you received any training on green finance or sustainable investment products?**
   - ☐ Yes
   - ☐ No

Section 2: Perceived Customer Awareness of Green Finance
Objective: To assess employees' perceptions of how well customers understand green finance, its concepts, and its relevance, including knowledge of green financial products and related policies.

7. Most customers I interact with are familiar with the concept of green finance.
   - ☐ Strongly Disagree
   - ☐ Disagree
   - ☐ Neutral
   - ☐ Agree
   - ☐ Strongly Agree
8. Customers frequently inquire about green investment products.
   - ☐ Strongly Disagree
   - ☐ Disagree
   - ☐ Neutral
   - ☐ Agree
   - ☐ Strongly Agree
9. Customers understand the difference between traditional and green financial products.
   - ☐ Strongly Disagree
   - ☐ Disagree
   - ☐ Neutral
   - ☐ Agree
   - ☐ Strongly Agree
10. Customers are aware of government incentives or policies related to green investments.
    - ☐ Strongly Disagree
    - ☐ Disagree
    - ☐ Neutral
    - ☐ Agree
    - ☐ Strongly Agree
11. There is growing awareness among customers about ESG (Environmental, Social, and Governance) investing.
    - ☐ Strongly Disagree
    - ☐ Disagree
    - ☐ Neutral
    - ☐ Agree
    - ☐ Strongly Agree

Section 3: Perceived Customer Interest in Green Investments
Objective: To evaluate employee observations regarding customer demand for green financial products, willingness to invest, and the factors that drive or hinder their interest in sustainable finance.

12. Customers show interest in sustainable banking options (e.g., green loans, eco-friendly accounts).
    - ☐ Strongly Disagree
    - ☐ Disagree
    - ☐ Neutral
    - ☐ Agree
    - ☐ Strongly Agree
13. Customers consider sustainability factors when making investment decisions.
    - ☐ Strongly Disagree
    - ☐ Disagree
    - ☐ Neutral
    - ☐ Agree
    - ☐ Strongly Agree
14. I have noticed an increase in customer demand for green financial products over the past year.
    - ☐ Strongly Disagree
    - ☐ Disagree
    - ☐ Neutral
    - ☐ Agree
    - ☐ Strongly Agree
15. Younger customers (Millennials & Gen Z) show more interest in green investments compared to older customers.
    - ☐ Strongly Disagree
    - ☐ Disagree
    - ☐ Neutral

- ☐ **Agree**
- ☐ **Strongly Agree**

16. Customers are willing to accept slightly lower returns for investments that support sustainability.
    - ☐ **Strongly Disagree**
    - ☐ **Disagree**
    - ☐ **Neutral**
    - ☐ **Agree**
    - ☐ **Strongly Agree**

Section 4: Barriers to Customer Adoption of Green Finance
Objective: To identify key challenges that prevent customers from adopting green finance products, such as financial concerns, trust issues, lack of awareness, or regulatory complexities, as perceived by financial institution employees.

17. Customers perceive green financial products as more expensive than traditional ones.
    - ☐ **Strongly Disagree**
    - ☐ **Disagree**
    - ☐ **Neutral**
    - ☐ **Agree**
    - ☐ **Strongly Agree**
18. Customers are hesitant to invest in green products due to perceived financial risks.
    - ☐ **Strongly Disagree**
    - ☐ **Disagree**
    - ☐ **Neutral**
    - ☐ **Agree**
    - ☐ **Strongly Agree**
19. There is a lack of accessible and clear information on green investment options for customers.
    - ☐ **Strongly Disagree**
    - ☐ **Disagree**
    - ☐ **Neutral**
    - ☐ **Agree**
    - ☐ **Strongly Agree**
20. Many customers do not trust that financial institutions genuinely support sustainability (concerns about greenwashing).
    - ☐ **Strongly Disagree**
    - ☐ **Disagree**
    - ☐ **Neutral**
    - ☐ **Agree**
    - ☐ **Strongly Agree**
21. Customers prioritize financial returns over environmental impact when making investment decisions.
    - ☐ **Strongly Disagree**
    - ☐ **Disagree**
    - ☐ **Neutral**
    - ☐ **Agree**
    - ☐ **Strongly Agree**

Section 5: Employee Role in Promoting Green Finance

Objective: To understand employees' confidence, training, and institutional support in promoting green finance products and gauge their willingness to engage customers in sustainable investment discussions.

22. I feel confident discussing green financial products with customers.
    - ☐ **Strongly Disagree**
    - ☐ **Disagree**
    - ☐ **Neutral**
    - ☐ **Agree**
    - ☐ **Strongly Agree**
23. My institution provides adequate training and resources to help employees promote green finance.
    - ☐ **Strongly Disagree**
    - ☐ **Disagree**
    - ☐ **Neutral**
    - ☐ **Agree**
    - ☐ **Strongly Agree**
24. I believe my institution actively markets and educates customers about green investment options.
    - ☐ **Strongly Disagree**
    - ☐ **Disagree**
    - ☐ **Neutral**
    - ☐ **Agree**
    - ☐ **Strongly Agree**
25. I would like to receive more training on how to engage customers about green financial products.
    - ☐ **Strongly Disagree**
    - ☐ **Disagree**
    - ☐ **Neutral**
    - ☐ **Agree**
    - ☐ **Strongly Agree**
26. I believe financial institutions should do more to encourage green finance adoption among customers.
    - ☐ **Strongly Disagree**
    - ☐ **Disagree**
    - ☐ **Neutral**
    - ☐ **Agree**
    - ☐ **Strongly Agree**
27. In your opinion, what are the biggest challenges in increasing customer awareness and interest in green finance, and how can financial institutions address them?

Transforming Accounting Practices: The Role and Impact of Digital Technology

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Abstract
Accounting has seen substantial changes as a result of the development of digital technology, which has made conventional procedures more streamlined and effective. Using information from industry publications, case studies, and previous research, this study looks at how digital tools are changing accounting. Automating repetitious operations, increasing accuracy, and facilitating improved decision-making are all made possible by technologies like artificial intelligence, blockchain, cloud computing, and data analytics.
The paper emphasizes the many benefits of implementing digital technology in accounting, such as improved productivity, lower expenses, and instant access to financial data. However, issues including the necessity for upskilling personnel, high implementation costs, and cybersecurity risks continue to be major concerns. New developments in the industry, such blockchain and AI-powered predictive analytics for safe financial transactions, indicate promise for more change.
This study emphasizes how crucial flexibility and ongoing education are to accountants' abilities to take full advantage of modern technology. By examining the effects of digital technologies, the study offers insightful viewpoints for academics, corporations, and politicians as well as a road map for navigating accounting's future in a digital world.

Keywords: Digital Technology, Accounting, Artificial Intelligence, Blockchain, Automation, Data Analytics

Introduction
The accounting profession has come a long way from its early days nearly five millennia ago. Back then, maintaining financial records meant relying on manual methods like handwritten ledgers and stacks of paper receipts. Tasks were often tedious and time-consuming, a far cry from the streamlined processes we see today.
With the rise of accounting technology, these outdated methods have been replaced by efficient, digitized systems. What once took weeks to complete can now be accomplished in mere minutes, freeing accountants to focus on more meaningful work. Modern tools not only save time but also enhance accuracy and expand the scope of accountants' roles, offering new levels of responsibility and opportunity.
From apps to advanced software, technology has transformed accounting practices in remarkable ways. It boosts productivity, reduces errors, and simplifies complex tasks. However, for those new to computerized systems, choosing the right tools can feel overwhelming. This study highlights the importance of adaptability and continuous learning for accountants' ability to fully utilize contemporary technology. The research provides a roadmap for navigating accounting's future in a digital world and offers valuable perspectives for scholars, businesses, and politicians by analyzing the effects of digital technology. The field of accounting is at the forefront of a digital revolution that has fundamentally altered its processes, methodologies, and outcomes. Traditional accounting, characterized by manual record-keeping and time-intensive computations, is rapidly giving way to automated systems driven by cutting-edge technologies. Digital tools such as artificial intelligence (AI), blockchain, cloud computing, and data analytics are not merely supplementary but are becoming integral to modern accounting practices.

Objectives
The primary objectives of this study are:
1. To examine the role of digital technologies such as AI, blockchain, cloud computing, and data analytics in transforming accounting practices.
2. To evaluate the benefits of adopting digital technology in accounting, including productivity, cost-efficiency, and real-time access to data.
3. To identify the challenges and risks associated with the implementation of digital tools in accounting.
4. To explore emerging trends in the field and their implications for stakeholders.
5. To provide actionable insights for academics, businesses, and policymakers to navigate the future of accounting in a digital world.

Review of Literature
- AI significantly reduces manual effort and enhances decision-making capabilities through predictive analytics and automated processes, as shown in Smith et al. (2020). AI-driven systems streamline repetitive tasks and provide insights that empower strategic planning.

- According to Johnson and Miller (2019), blockchain offers a secure and transparent platform for financial transactions. Its decentralized and immutable nature minimizes fraud while enabling real-time auditing, transforming traditional accounting systems.
- Studies by Williams (2018) emphasize that cloud-based accounting systems enhance accessibility and collaboration. These systems ensure compliance with regulatory standards and allow remote access, promoting efficiency in financial management.
- Brown and Taylor (2021) highlight how advanced analytics tools transform complex data into actionable insights. By identifying trends and patterns, these tools enable businesses to make informed, data-driven decisions that drive growth and mitigate risks.
- These findings underscore the need for strategic planning and continuous education to maximize the benefits of digital technology in accounting.
- While these advancements offer significant advantages, the literature also highlights challenges such as the need for skilled professionals, high implementation costs, and cybersecurity concerns.

Research Methodology

This research paper is based on secondary data. The data is collected from reference books, articles, web links reflecting digital technologies application in the field of accounting with the emerging trends, role and benefit.

Results and Discussions

technology is reshaping the accounting landscape and some of its key applications in today's workplace.

Key Technologies Driving Modern Accounting

Cloud-Based Solutions

Traditional accounting software was often limited to a single device, but cloud-based solutions have changed the game. These tools, hosted on third-party servers, allow accountants to access data from anywhere using a web browser. Not only is the data automatically backed up, but businesses can also save money by opting for subscription-based services instead of costly IT infrastructure.

The flexibility of cloud-based systems also promotes collaboration. Accountants can easily work with remote colleagues, share reports, and send digital invoices to clients, all from their mobile devices.

Accounting Software

Over the years, a variety of accounting software tools have been developed, including popular options like QuickBooks, FreshBooks, and NetSuite ERP. These tools handle everything from tracking expenses and generating financial statements to processing payroll and managing taxes.

What makes these tools indispensable is their ability to improve accuracy, ensure data security, and offer insights through analytics and forecasting features. They empower businesses to make informed decisions with confidence.

Automation

Repetitive tasks like data entry and invoice processing can now be handled by robotic process automation (RPA). This technology reduces human error and frees up accountants to focus on strategic responsibilities. For example, automation can detect discrepancies in financial records or respond to vendor queries without any manual intervention.

Machine Learning

Machine learning takes data analysis to the next level by using algorithms to process vast amounts of information. These systems continuously learn and improve, making them highly effective for identifying trends, detecting fraud, and analyzing financial transactions.

While still evolving, machine learning has the potential to revolutionize audits by enabling faster and more accurate detection of irregularities.

Data Analytics

Analytics tools help accountants make sense of complex data sets, revealing patterns and trends that inform business strategies. These tools can assist in advising clients, assessing risks, forecasting future performance, and solving complex problems. For instance, analytics can pinpoint the root causes of inefficiencies or predict how a particular decision might impact the bottom line.

Data Visualization

Visual tools like Tableau and Excel bring data to life with charts, graphs, and other graphics. These visuals make it easier to spot trends, outliers, and other critical insights. They also help accountants communicate findings in a way that's accessible to clients and stakeholders, turning complex numbers into clear, actionable narratives.

Predictive Analytics

By analyzing historical data, predictive analytics help accountants forecast future trends. For instance, this technology can estimate upcoming expenses, identify growth opportunities, or create more accurate budgets, empowering businesses to plan with greater precision.

Artificial Intelligence (AI)

AI is the powerhouse behind many modern accounting tools. It automates mundane tasks like tax filing and data aggregation while offering advanced capabilities like predictive analytics. With AI's ability to learn and adapt, accountants can focus on creative problem-solving and strategic decision-making.
The rapid growth of AI, exemplified by tools like ChatGPT and Google Bard, underscores its transformative impact on the industry.

Cybersecurity

With financial data becoming increasingly digital, robust cybersecurity measures are critical. Innovations like password management tools, stealth log-ins, and cloud-based storage ensure sensitive information remains safe from breaches. These measures protect both accountants and their clients, building trust and safeguarding reputation.

The Future of Accounting: Collaboration Between Technology and People

The integration of AI, ML, RPA, blockchain, and cloud computing is not just automating processes—it's redefining the accounting profession. From fraud detection and financial forecasting to enhanced collaboration, these technologies are making accounting teams more efficient, accurate, and strategic.
While there are concerns about AI replacing jobs, industry experts believe these advancements will enhance the role of accountants. By automating routine tasks, accountants can focus on high-value activities that drive organizational growth and innovation.

Benefits of AI and Technology in Accounting

1. **Enhanced Security and Transparency with Blockchain**
   Blockchain technology ensures secure, transparent, and tamper-proof financial records. This reduces the risk of fraud and simplifies audit processes, offering greater confidence in financial reporting.
2. **Improved Accuracy with Machine Learning**
   Machine learning algorithms enhance the precision of financial analysis and reporting by identifying patterns and trends, leading to more informed and reliable financial decisions.
3. **Time Savings Through Chatbots**
   Chatbots automate routine tasks such as reconciling accounts and processing invoices. This saves time for accounting professionals, allowing them to focus on higher-value responsibilities.
4. **Increased Efficiency via Robotic Process Automation (RPA)**
   RPA automates repetitive tasks like data entry and report generation, reducing errors and increasing operational efficiency across accounting workflows.
5. **Proactive Decision-Making with Predictive Analytics**
   Predictive analytics empowers businesses to anticipate financial trends, make data-driven decisions, and respond proactively to potential challenges, fostering strategic growth.
6. **New Insights from IoT and Smart Devices**
   By leveraging data from connected devices, accounting teams gain valuable insights into consumer behavior, market dynamics, and operational efficiency, enabling smarter financial planning.

Agility in a Digital World: A Key to Business Excellence

For organizations embracing digital transformation, agility is essential to adapt to the ever-evolving technological and business landscape. Success requires a forward-thinking digital mindset, backed by innovation and a willingness to evolve.
A comprehensive suite of modern solutions is enabling businesses to thrive by:

- Delivering intuitive, scalable decision-making.
- Providing actionable, real-time insights.
- Offering seamless anytime/anywhere experiences.
- Ensuring data visibility across functions for hyper-productivity.

Organizations that operate like "living systems" — capable of sensing, learning, and responding to change — are better positioned for long-term success. By fostering collaboration, innovation, and adaptability, businesses can build a robust foundation for the future. The journey ahead for accounting is exciting, with technology empowering professionals to achieve more than ever before.

Conclusion

Digital technology has revolutionized accounting, enhancing efficiency, accuracy, and decision-making. Tools like AI, blockchain, cloud computing, and data analytics streamline processes, reduce errors, and offer actionable insights, enabling accountants to focus on strategic roles. Despite challenges such as implementation costs, cybersecurity concerns, and the need for upskilling, these advancements position accounting as a dynamic and evolving field. Embracing adaptability and innovation will be key for businesses, policymakers, and professionals to fully leverage these transformative tools and navigate the future of accounting.

Entrepreneurship In Modern Business Scenario

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Abstract
Entrepreneurship has become a cornerstone of the modern business environment. Today's entrepreneurial landscape is defined by rapid technological advancements, globalization, shifting consumer behaviors, and increased access to capital and information. Entrepreneurs play a vital role in shaping and driving modern businesses forward. Their unique mindset, innovative approaches, and risk-taking abilities contribute significantly to the growth and evolution of industries. Here's how entrepreneurs help modern businesses:

Keywords: Entrepreneur, key driver, social change

Introduction
Entrepreneurship in the modern world has become more than just starting a business—it is about innovation, solving problems, and creating value in a rapidly changing global economy. Today's entrepreneurs operate in an environment shaped by advanced technology, globalization, and evolving consumer needs. They use creative thinking and digital tools to launch startups, disrupt traditional industries, and bring fresh ideas to life. Modern entrepreneurship is also increasingly focused on social impact, sustainability, and inclusivity, making it a key driver of both economic growth and positive societal change. In this dynamic landscape, entrepreneurs play a crucial role in shaping the future of business and the world.

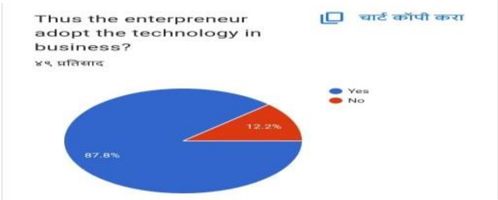
Objective
1) To create innovative solutions that create current market and social needs.
2) To create employment opportunities.

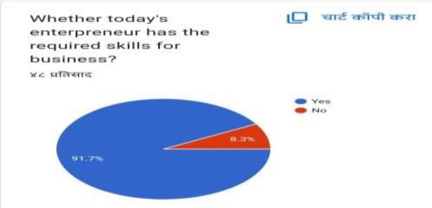
Literature review
1) Introduction to Entrepreneurship, A. Pahuja, R Sanjeev, 2015, In this study Entrepreneur pays current prices for the materials consumed in the business. Entrepreneurship, which is one the most powerful economic force known to humankind, is empowering individuals to seek opportunity where others find intractable problems. Entrepreneurship is the symbol of business tenacity and achievement; it is a vital source of change in all facets of society.
2) Exploring the synergy between Entrepreneurship and innovation, Fjhao, 2009
   In this study researcher study contribute to an understanding of the complementary nature of entrepreneurship and innovation through an empirical study of various organizations; and to develop an integrative framework of the interaction between entrepreneurship and innovation.
3) Entrepreneurship and small business, P Burns, 2022, In this study researcher said about perspectives how small-scale business get financial help to conduct smooth business, to arrange working capital and other business activities.
4) The future of family business, family entrepreneurship G Dossena, A fayolle 2016 This study
   Here's a clear and insightful take on the **future of family businesses in entrepreneurship**: The future of family businesses in entrepreneurship looks promising yet challenging in a rapidly evolving business landscape. As technology, consumer behavior, and globalization reshape industries, family-owned businesses must adapt to stay competitive. Many are shifting from traditional practices to more innovative and professionally managed models, incorporating digital tools, e-commerce, and data-driven decision-making.

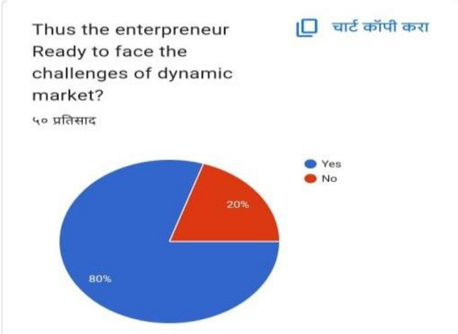
Research Gap
1. Limited research on how AI, blockchain are reshaping entrepreneurial strategies.
2. Need for models that integrate digital tools into entrepreneurial decision-making.
3. Lack of real-time studies on the effectiveness of government startup support program.

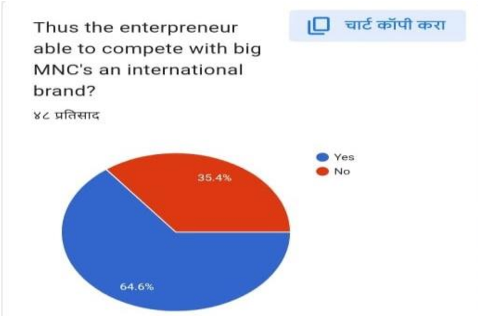
Research methodology
To conduct the survey, the researcher used a primary data collection method, questionnaire method researcher took feedback of approximately 50 individuals located in the Vasai–Virar region. Following questions are asked by researcher.

1) Whether today's entrepreneur has the required skills for business?
2) Does the entrepreneur adopt technology in business?
3) Thus, the entrepreneur ready to face the challenges of dynamic market?
4) Thus, the entrepreneur able to compete with big MNCs with international brands?
5) Thus, the Entrepreneur is consistent in adopting new challenges of market and giving good returns of business?
6) Does the entrepreneur of today able to do an expansion office business at international level? Thus, the entrepreneur includes innovative ideas into the business?









Conclusion:

In the modern business scenario, entrepreneurship has emerged as a key driver of innovation, economic growth, and societal transformation. With rapid advancements in technology, shifting consumer behavior, and dynamic global markets, entrepreneurs are compelled to adopt agile, innovative, and sustainable approaches. The integration of digital tools, emphasis on sustainability, and the rise of inclusive and social entrepreneurship reflect a shift from traditional business models to more holistic and impact-driven practices. However, to fully harness the potential of entrepreneurship, there is a growing need for adaptive policies, supportive ecosystems, and continuous research that addresses evolving challenges. As the business environment continues to evolve, entrepreneurship remains central to shaping a resilient, inclusive, and forward-looking global economy.

References:

1) A. Pahuja, R Sanjeev, 2015, Introduction to Entrepreneurship
2) Jhao, 2009, Exploring the synergy between Entrepreneurship and innovation
3) P. Burns ,2022, Entrepreneurship and small business
4) G Dossena, A fayolle 2016 The future of family business

The Role of Digital Payments in E-Commerce: A Case Study of Google Pay in India

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Abstract

The rise of digital payment systems has significantly fuelled the rapid expansion of e-commerce in India. Among these, Google Pay has emerged as a leading platform, revolutionizing the way consumers and businesses conduct financial transactions. Examining the function of digital payments in e-commerce is the goal of this study, focusing on Google Pay as a case study in the Indian market. The research explores the impact of digital payment solutions on consumer behaviour, merchant adoption, transaction security, and overall economic growth.

The Indian government is pushing for a cashless economy with initiatives like Digital India and UPI (Unified Payments Interface), digital payment platforms have gained widespread acceptance. Google Pay, leveraging UPI, has simplified peer-to-peer transactions, bill payments, and online shopping experiences, offering convenience, security, and efficiency. This study analyses how Google Pay enhances transaction speed, reduces dependency on cash, and fosters access to financing for small and medium-sized businesses (SMEs). Additionally, the study assesses consumer trust in digital payment security and the challenges faced in digital transactions, such as cyber threats and technical disruptions.

A combination of qualitative and quantitative data collection techniques is used in the research process. Primary data is gathered through surveys and interviews with e-commerce users and merchants, while secondary data includes reports from government and financial institutions. Findings from this study will shed light on the evolving landscape of digital payments, their benefits, and challenges, offering recommendations for policymakers, businesses, and consumers to optimize the use of digital payment platforms in e-commerce.

Keywords: Digital Payments, E-Commerce, Google Pay, UPI, Financial Inclusion

Introduction

In the last decade, India has witnessed a remarkable transformation in its digital economy, driven by advancements in technology, increasing internet penetration, and the widespread adoption of smartphones. One of the most significant developments in this space has been the surge in digital payments, which has reshaped how financial transactions are conducted across various sectors. E-commerce, being one of the most rapidly expanding industries in India, has particularly benefited from the emergence of seamless and secure digital payment solutions.

The Indian government has been instrumental in advancing a cashless economy through programs like Digital India and the Unified Payments Interface (UPI). Digital systems such as Google Pay have been made possible by these innovations. which has rapidly gained popularity as a preferred payment mode for online and offline transactions. By offering fast, reliable, and user-friendly services, Google Pay has enabled millions of users to transact conveniently, fostering trust and reliability among consumers and merchants alike.

This research explores how Google Pay, as a digital payment platform, has impacted the e-commerce ecosystem in India. The study examines its role in enhancing consumer behavior, improving transaction efficiency, promoting merchant participation, and supporting financial inclusion. It also investigates user perceptions regarding the security and trustworthiness of the platform, along with identifying the challenges faced in digital transactions such as fraud risks, transaction failures, and technical glitches

Objectives

5. To evaluate how digital payments will improve Indian e-commerce transactions.
6. To investigate how Google Pay affects consumer behavior and trends in online purchasing.
7. To evaluate the security, efficiency, and convenience of Google Pay in e-commerce transactions.
8. To assess the challenges faced by users while using Google Pay for online purchases.

Review of Literature

- The landscape of digital payments has undergone a radical transformation globally, with India emerging as a key player in the digital revolution. Scholars and industry experts have widely examined the interface between digital payment systems and e-commerce, uncovering several dimensions of this evolving ecosystem.

1. Digital Payments and Economic Acceleration

Raghuram & Ghosh (2018) observed that digital payment systems significantly reduce transaction friction and contribute to the velocity of money in a digital economy. Their findings suggest that platforms like Google Pay can act as microeconomic catalysts, especially in developing countries like India where traditional banking has limited reach.

2. Consumer Behavior in a Cashless World

A unique behavioural shift has been identified by Sharma & Dey (2020), where convenience, instant gratification, and rewards have begun to drive consumers more than price alone. Their research emphasized that platforms offering cashback, gamification (such as Google Pay's 'scratch cards'), and seamless integration into lifestyle apps can subconsciously condition user habits.

3. E-Commerce Synergy with UPI

Patel & Bansal (2021) explored the synergy between India's UPI system and e-commerce platforms, suggesting that UPI-enabled apps like Google Pay provide a competitive edge by reducing cart abandonment rates due to faster and hassle-free checkout processes. The study found that integrating such platforms into the buyer journey increases conversion rates for digital marketplaces.

4. Trust and Security: The Hidden Currency

Research by Gupta & Verma (2019) highlighted that perceived security and data protection are among the top psychological barriers for digital payment adoption. Interestingly, users are more likely to trust global tech players like Google due to brand reputation, although any breach (real or rumored) can significantly impact user confidence.

5. Financial Inclusion and SMEs

World Bank reports and studies by Mehta (2022) emphasized the democratizing role of digital wallets in bringing small and medium enterprises into the digital economy. Google Pay, with its low entry barrier and wide accessibility, enables micro-entrepreneurs and even local kirana stores to tap into digital commerce.

6. The Evolution of Payment Habits Post-Pandemic

post-COVID-19 literature reflects a dramatic shift in payment preferences. According to a 2021 report by NPCI, digital transactions surged as consumers avoided cash for safety. This "pandemic push" opened a window for long-term behavioural change, accelerating the adoption of platforms like Google Pay among hesitant users.

Hypothesis

The research will be guided by the following hypotheses:

- **The null hypothesis** (H_0) states that Google Pay has no discernible effect on Indian consumers' e-commerce transaction behaviour.
- **Alternative Hypothesis** (H_1): Google Pay significantly influences Indian consumers' e-commerce transaction behaviour.

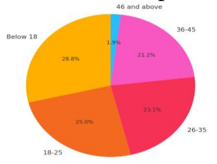
  In order to ascertain whether digital payments made with Google Pay have a substantial impact on online purchasing, customer trust, and transaction patterns, these

.

Data Findings

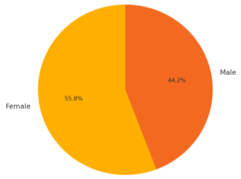
What is your age group?

Below 18: 15 responses (28.85%)
18-25: 13 responses (25.00%)
26-35: 12 responses (23.08%)
36-45: 11 responses (21.15%)
46 and above: 1 response (1.92%)

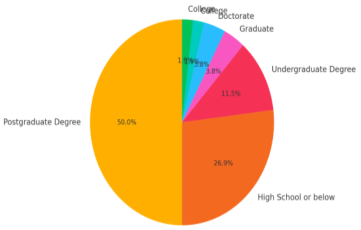


Gender:

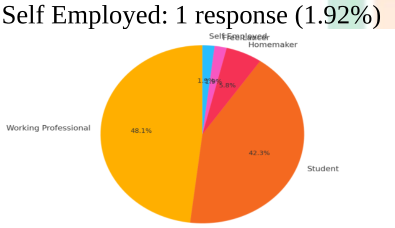
Female: 29 responses (55.77%)
Male: 23 responses (44.23%)



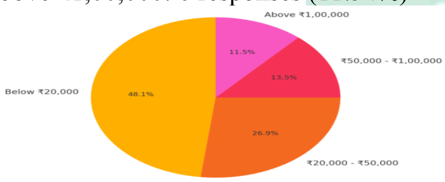
What is your highest level of education?
Postgraduate Degree: 26 responses (50.00%)
High School or below: 14 responses (26.92%)
Undergraduate Degree: 6 responses (11.54%)
Graduate: 2 responses (3.85%)
Doctorate: 2 responses (3.85%)
College: 1 response (1.92%)
College: 1 response (1.92%)



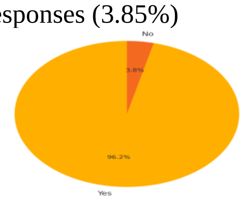
What is your occupation?
Working Professional: 25 responses (48.08%)
Student: 22 responses (42.31%)
Homemaker: 3 responses (5.77%)
Free Lancer: 1 response (1.92%)
Self Employed: 1 response (1.92%)



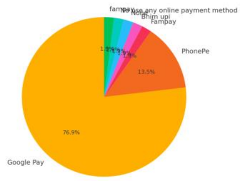
What is your average monthly income?
Below ₹20,000: 25 responses (48.08%)
₹20,000 - ₹50,000: 14 responses (26.92%)
₹50,000 - ₹1,00,000: 7 responses (13.46%)
Above ₹1,00,000: 6 responses (11.54%)



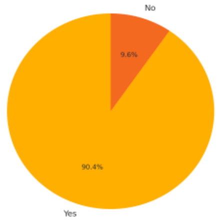
Are you aware of Google Pay as a digital payment platform?
Yes: 50 responses (96.15%)
No: 2 responses (3.85%)



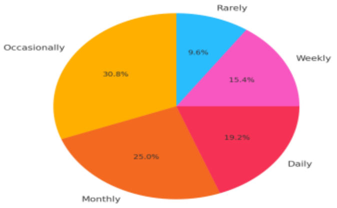
Which digital payment method do you use the most for online shopping?
Google Pay: 40 responses (76.92%)
PhonePe: 7 responses (13.46%)
Fampay: 1 response (1.92%)
Bhim upi: 1 response (1.92%)
None: 1 response (1.92%)
No use any online payment method: 1 response (1.92%)
Fampay : 1 response (1.92%)



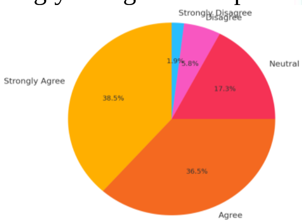
Do you use digital payment platforms for online shopping?
Yes: 47 responses (90.38%) No: 5 responses (9.62%)



How frequently do you shop online?
Occasionally: 16 responses (30.77%)
Monthly: 13 responses (25.00%)
Daily: 10 responses (19.23%)
Weekly: 8 responses (15.38%)
Rarely: 5 responses (9.62%)

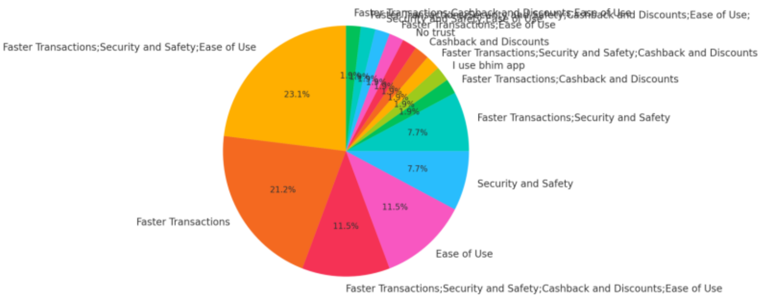


Has Google Pay influenced how frequently you shop online?
Strongly Agree: 20 responses (38.46%)
Agree: 19 responses (36.54%)
Neutral: 9 responses (17.31%)
Disagree: 3 responses (5.77%)
Strongly Disagree: 1 response (1.92%)

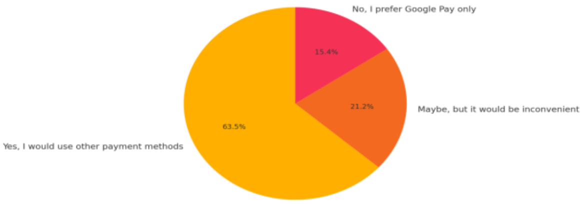


What are the key reasons you prefer Google Pay for online shopping?
Faster Transactions; Security and Safety; Ease of Use: 12 responses (23.08%)
Faster Transactions: 11 responses (21.15%)
Faster Transactions; Security and Safety; Cashback and Discounts; Ease of Use: 6 responses (11.54%)
Ease of Use: 6 responses (11.54%)
Security and Safety: 4 responses (7.69%)
Faster Transactions; Security and Safety: 4 responses (7.69%)
Faster Transactions; Cashback and Discounts: 1 response (1.92%)
I use Bhim app: 1 response (1.92%)
Faster Transactions; Security and Safety; Cashback and Discounts: 1 response (1.92%)
Cashback and Discounts: 1 response (1.92%)
No trust: 1 response (1.92%)
Faster Transactions; Ease of Use: 1 response (1.92%)
Security and Safety; Ease of Use: 1 response (1.92%)
Faster Transactions; Security and Safety; Cashback and Discounts; Ease of Use: 1 response (1.92%)
Faster Transactions; Cashback and Discounts; Ease of Use: 1 response (1.92%)

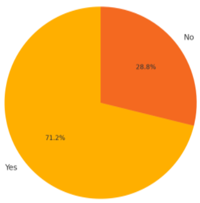
 ISBN No- 978-93-342-5395-5



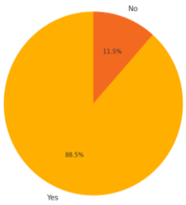
Would you still shop online if Google Pay was not available?
Yes, I would use other payment methods: 33 responses (63.46%)
Maybe, but it would be inconvenient: 11 responses (21.15%)
No, I prefer Google Pay only: 8 responses (15.38%)



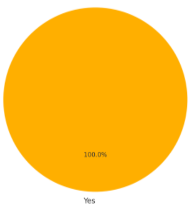
Do you feel more comfortable making larger online purchases because of Google Pay?
Yes: 37 responses (71.15%)
No: 15 responses (28.85%)



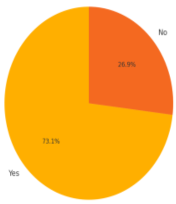
Has Google Pay made your online shopping experience easier?
Yes: 46 responses (88.46%)
No: 6 responses (11.54%)



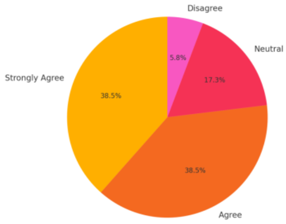
Do you believe Google Pay has improved the speed of online transactions?
Yes: 52 responses (100.00%)



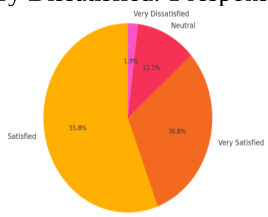
Has Google Pay influenced your spending habits (e.g., spending more due to ease of transactions?
Yes: 38 responses (73.08%)
No: 14 responses (26.92%)



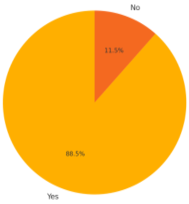
Do you find it easier to shop on e-commerce platforms that accept Google Pay?
Strongly Agree: 20 responses (38.46%)
Agree: 20 responses (38.46%)
Neutral: 9 responses (17.31%)
Disagree: 3 responses (5.77%)



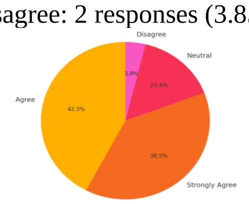
How satisfied are you with Google Pay's transaction success rate?
Satisfied: 29 responses (55.77%)
Very Satisfied: 16 responses (30.77%)
Neutral: 6 responses (11.54%)
Very Dissatisfied: 1 response (1.92%)



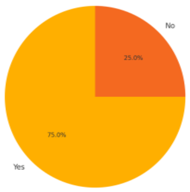
Would you recommend Google Pay to others for online shopping?
Yes: 46 responses (88.46%)
No: 6 responses (11.54%)



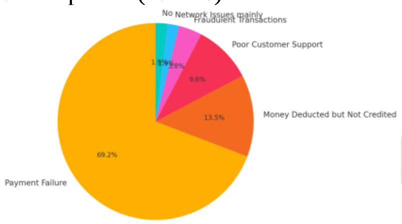
Do you trust Google Pay for secure transactions?
Agree: 22 responses (42.31%)
Strongly Agree: 20 responses (38.46%)
Neutral: 8 responses (15.38%)
Disagree: 2 responses (3.85%)



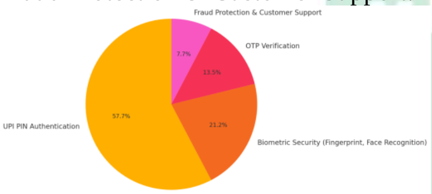
Have you ever faced transaction failures or security issues while using Google Pay?
Yes: 39 responses (75.00%)
No: 13 responses (25.00%)



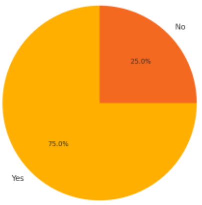
If yes, what type of issues have you faced? (Select all that apply)
Payment Failure: 36 responses (69.23%)
Money Deducted but Not Credited: 7 responses (13.46%)
Poor Customer Support: 5 responses (9.62%)
Fraudulent Transactions: 2 responses (3.85%)
Network Issues mainly: 1 response (1.92%)
No: 1 response (1.92%)



What security features of Google Pay make you feel safe? (Select all that apply)
UPI PIN Authentication: 30 responses (57.69%)
Biometric Security (Fingerprint, Face Recognition): 11 responses (21.15%)
OTP Verification: 7 responses (13.46%)
Fraud Protection & Customer Support:4 responses (7.69%)



Would security concerns make you stop using Google Pay?
Yes: 39 responses (75.00%)
No: 13 responses (25.00%)



Hypothesis Testing Result:

- **Chi-Square Value (χ^2)** = 11.08
- **p-value** = 0.00087
- **Significance Level (α)** = 0.05

Interpretation:
Since **p-value (0.00087) < 0.05**, we **reject the Null Hypothesis (H_0)**.

- **Rejected**:
  H_0: *"The use of Google Pay has no significant impact on consumer behavior and e-commerce transactions in India."*
- **Accepted**:
  H_1: *"The use of Google Pay has a significant positive impact on consumer behavior and e-commerce transactions in India."*

Hypothesis Testing – Analysis and Findings:

- To assess whether Google Pay has a significant impact on consumer behavior and e-commerce transactions in India, a hypothesis test was conducted. The test focused on the responses to the question: *"Has Google Pay influenced your spending habits (e.g., spending more due to ease of transactions)?"* Using the Chi-Square Goodness-of-Fit test, the observed data was compared with expected values assuming equal likelihood of 'Yes' and 'No' responses.
- The results yielded a **Chi-Square value of 11.08** with a **p-value of 0.00087**, which is significantly lower than the standard significance level of **0.05**. Based on this, the **null hypothesis (H_0)**—which states that Google Pay has no discernible effect on Indian consumers' e-commerce transaction behaviour. —was **rejected**. Consequently, the **alternative hypothesis (H_1)** was **accepted**, affirming that the use of Google Pay has a **statistically significant and positive impact** on consumer behavior in the Indian e-commerce space.
- This finding highlights that ease of transactions, enhanced convenience, and the digital-first experience offered by platforms like Google Pay have notably influenced consumers' purchasing patterns, promoting increased spending and digital adoption.

Recommendation

9. **Enhance Digital Literacy and Awareness Campaigns**
The government and digital payment platforms should collaborate to increase awareness and digital literacy among consumers and small merchants, particularly in semi-urban and rural regions. Awareness campaigns and training initiatives can boost self-esteem and increase the user base.
10. **Strengthen Security Features and Fraud Detection Mechanisms**
Despite high adoption, concerns about security and fraud remain. Google Pay and similar platforms should continue investing in AI-based fraud detection, biometric authentication, and user education on safe digital practices to improve trust.
11. **Promote Small Business Onboarding**
Google Pay should create more tailored offerings and incentives for small and medium-sized enterprises (SMEs) to join the digital payment ecosystem. Offering free onboarding, low transaction fees, and business insights could boost merchant participation.
12. **Integrate More Value-Added Services**
To increase engagement, platforms can integrate loyalty programs, cashbacks, budgeting tools, or personalized financial recommendations. This adds more value to users and encourages continued usage.
13. **Improve Offline Transaction Experience**
While online payments are seamless, offline QR-based transactions can still be slow or fail due to network issues. Enhancing offline functionality (like UPI Lite or NFC support) can bridge this gap and improve reliability.
14. **Support Multi-Language Accessibility**
Enabling regional language support within apps can drive adoption among non-English speaking users. This promotes inclusivity and accessibility across India's diverse population.
15. **Leverage Data Analytics for User Experience Optimization**
Google Pay can utilize transaction patterns and user behavior data to personalize the user experience, predict needs, and offer tailored offers, thus deepening user engagement.
16. **Work with E-Commerce Platforms for Seamless Checkout Integration**
Collaborating with major e-commerce websites and apps to offer faster, one-tap payments can enhance the overall online shopping experience and further boost digital adoption.

Conclusion

Using Google Pay as a case study; the paper examines the crucial role that digital payment has played in the expansion of e-commerce in India. The analysis reveals that the convenience, speed, and security offered by Google Pay have significantly influenced consumer behaviour, encouraging more frequent and higher-value transactions in the digital space. With initiatives like UPI and Digital India promoting a cashless economy, platforms such as Google Pay have become central to India's evolving payment landscape.

The hypothesis testing strongly supports the alternative hypothesis, indicating that Google Pay has a statistically significant positive impact on both consumer behavior and e-commerce transactions. Consumers increasingly rely on digital payment methods for their shopping needs, and businesses—especially small and medium enterprises—are adapting quickly to accommodate this shift.

However, challenges such as cyber security concerns, lack of awareness in rural areas, and occasional technical disruptions persist. Therefore, continued efforts toward digital literacy, infrastructure enhancement, and user trust-building are essential for sustaining the momentum of digital payments in India's commerce sector.

This research provides meaningful perspective for policymakers, financial institutions, and digital payment providers to design more inclusive, secure, and user-centric payment ecosystems that support India's broader economic digitalization goals.

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Safe Shopping in the Digital Age: Cybersecurity Challenges in E-Commerce

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Abstract
E-commerce has transformed the nature of shopping to such an extent that everything you need or want even at an odd hour is just a click away. The amount of convenience and variety offered by online shopping sites is incomparable with offline shopping. However, the rise of online shopping habits has also led to increasing cybersecurity threats, including data breaches and digital fraud. This paper explores the key cybersecurity challenges faced by e-commerce platforms, such as phishing attacks, payment fraud, and data theft. It also looks at the impact of these threats on consumers' purchasing habits and businesses. The study also focuses on essential security measures, including encryption, multi-factor authentication, bot checks and regulatory compliance, to enhance online safety. By understanding these challenges and solutions, businesses and consumers can work towards a more secure digital shopping experience.

Safe Shopping in the Digital Age: Cybersecurity Challenges in E-Commerce

1. Introduction

1.1 Background

The rapid growth of e-commerce has significantly altered the way consumers shop, conduct transactions, and interact with businesses. Online shopping platforms have made global markets within reach, offering convenience, a wide variety of products, and personalized shopping experiences. However, this digital expansion has also introduced several cybersecurity challenges. As more users share personal and financial information online, the risk of cyber threats such as data breaches, phishing attacks, identity theft, and payment fraud has increased. These threats not only compromise customer data but also damage the reputation and credibility of e-commerce businesses. As digital transactions continue to grow, implementing strong cybersecurity measures is highly essential to protect sensitive customer information, ensure safe transactions, and maintain customer trust. The need for awareness and proactive action in cybersecurity is now more urgent than ever in the evolving landscape of e-commerce.

1.2 Problem Statement

Despite technological advancements, cybersecurity threats continue to evolve, leading to financial losses and reputational damage for e-commerce businesses. Consumers face risks such as identity theft, fraudulent transactions, and personal data discourse. This study aims to explore the major cybersecurity threats in e-commerce, analyze their impact, and check the effectiveness of security measures to safeguard online transactions.

1.3 Research Objectives

1. To identify the major cybersecurity threats impacting e-commerce platforms.
2. To analyze the impact of cybersecurity threats on consumers and businesses.
3. To find out effective security measures for safe online transactions.
4. To assess the role of cybersecurity norms in protecting e-commerce.

1.4 Research Scope & Significance

This research paper focuses on cybersecurity risks, preventive measures, and regulatory frameworks in the e-commerce sector. The findings will benefit businesses, policymakers, and users by providing insights into enhancing online security. The study will also highlight best practices in the field of E-commerce to mitigate cyber threats and improve trust in digital transactions.

1.5 Research Methodology (Brief Overview)

A mix method approach has been used to conduct the research. The research is based on secondary data collected from academic journals, industry reports, case studies, and regulatory documents. A qualitative approach is used to analyze cybersecurity trends, threats, and mitigation strategies. The study uses thematic and comparative analysis techniques to understand the evolution of cyber risks in e-commerce and evaluate security practices implemented by leading online platforms.

2. Literature Review

2.1 Overview of Cybersecurity Research in E-Commerce

Cybersecurity in e-commerce has been widely studied and analysed in the past, with research highlighting the increasing difficulty of cyber threats and their economic impact. According to Smith et al. (2021), cyber threats have grown alongside the expansion of digital payment systems, making e-commerce platforms prime targets for cybercriminals. On the similar lines, a study by Johnson and Patel (2020) emphasizes that the financial and reputational risks associated with data breaches have made cybersecurity a top priority for online businesses.

2.2 Common Cyber Threats Identified in Past Research

2.2.1 Data Breaches and Privacy Concerns

Data breaches are one of the most violent threats in e-commerce, with millions of customer records being exposed each year (Jones et al., 2019). The breach of Equifax in 2017 and the Marriott data leak in 2018 serve as examples of how cybercriminals exploit weak security systems to access sensitive customer information (Brown, 2020). Studies have shown that companies with inadequate encryption and authentication measures are more vulnerable to such attacks (Miller & Davis, 2021).

2.2.2 Phishing, Malware, and Online Payment Fraud

Phishing remains the most prominent method used by cybercriminals to steal customer credentials. Research by Kumar and Singh (2018) found that over 80% of e-commerce fraud cases involve phishing attacks, where attackers trick users into revealing login information. Additionally, malware attacks targeting e-commerce platforms have increased, with ransomware being used to hold business operations hostage (Taylor, 2022). Online payment fraud, including credit card fraud and fake digital payment gateways, usually done with Wallet apps such as Google pay or Phone pe has also been identified as a growing concern (Wilson & Thomas, 2020).

2.3 Studies on Consumer Behavior and Cybersecurity Awareness

Consumer awareness plays a crucial role in addressing and avoiding cybersecurity threats. A survey by the Pew Research Center (2021) found that nearly 60% of online shoppers are unaware of basic cybersecurity practices, such as checking for SSL certificates or avoiding unsecured Wi-Fi networks while making purchases. Research by Anderson et al. (2020) also indicates that consumers who are more informed about cybersecurity are less likely to fall victim to online fraud.

2.4 Cybersecurity Measures in Previous Research

2.4.1 Role of Encryption and Authentication

Encryption has been recognized as a most crucial l security measure for protecting e-commerce transactions. Studies by Chen and Roberts (2019) highlight the importance of using end-to-end encryption for securing customer data. Similarly, two-factor authentication (2FA) has been identified as an effective method to prevent unauthorized access to accounts (Davis & Lee, 2021).

2.4.2 Government Regulations and Industry Standards

Government regulations, such as the General Data Protection Regulation (GDPR) and the Payment Card Industry Data Security Standard (PCI DSS), have been widely discussed in cybersecurity literature. Research by Sharma and Gupta (2021) indicates that strict compliance with these regulations significantly reduces the risk of cyberattacks on e-commerce platforms. However, studies also show that small and medium-sized enterprises (SMEs) often struggle to meet these regulatory requirements due to financial and technical constraints (Williams, 2020).

2.5 Research Gaps

While existing studies provide valuable insights into cybersecurity threats and prevention methods, there are notable research gaps. For instance, limited studies have focused on cybersecurity challenges faced by emerging markets, where digital literacy rates may be lower (Nguyen, 2022). Additionally, there is a lack of research on the effectiveness of consumer awareness programs in reducing cyber fraud cases. Recent efforts of telecom companies running a recorded voice message spreading awareness about digital frauds or sharing otp have being the work of spreading awareness but a not needs to be done in this field. Future research should explore these areas to provide a more comprehensive understanding of cybersecurity in e-commerce.

3. Research Methodology

3.1 Research Design

This study adopts a mixed-method research design, integrating both qualitative and quantitative approaches. The research paper focuses cybersecurity challenges in e-commerce using both secondary and primary data sources to provide a comprehensive understanding of the topic.

3.2 Data Collection Methods

Secondary Data: Sourced from peer-reviewed journals, industry reports, cybersecurity case studies, government regulations, and white papers published by cybersecurity firms. Online databases such as Google Scholar, IEEE Xplore, and research archives are used to gather relevant literature.

Primary Data: A structured survey was conducted to gather information from 80 respondents aged 15 to 20. The questionnaire consisted of multiple-choice questions which focused on online shopping habits, cybersecurity awareness, security practices, personal experiences with cyber threats, and opinions on the adequacy of e-commerce platform security.

3.3 Data Analysis Techniques

Secondary data was analyzed using thematic and comparative analysis techniques to identify recurring cybersecurity threats and assess mitigation strategies. Primary survey data was statistically interpreted using frequency distributions and percentage analysis to identify patterns in cybersecurity awareness and practices among young online consumers. The findings were then cross-referenced with secondary literature to evaluate consistencies or gaps.

3.4 Ethical Considerations

Ethical guidelines were followed throughout the research. Participants of the survey remained anonymous, where no personal or identifiable information was collected. Proper citation and referencing were ensured while using secondary data sources. The data was then analyzed and presented with integrity and transparency.

4. Data Analysis

This section presents the analysis of primary data collected through a structured survey consisting of multiple-choice questions answered by 80 respondents. The objective was to assess cybersecurity awareness, practices, and experiences of online shoppers aged between 15 to 20 years. The responses offer insights into prevalent behaviors, concerns, and perceptions regarding e-commerce cybersecurity.

4.1 Demographic Profile

Gender Distribution:
Male: 31.3% (25 respondents)
Female: 68.8% (55 respondents)

4.2 Online Shopping Habits

Frequently shop online: 23.8%
Occasionally shop online: 31.3%
Rarely shop online: 35%
Never shop online: 10%

4.3 Awareness of Cybersecurity Risks

Fully aware: 48.8%
Somewhat aware: 46.3%Not at all aware: 5%

4.4 Perceived Cybersecurity Threats in E-Commerce

Respondents were allowed to select multiple threats:

Phishing scams: 33.8%
Data breaches: 33.8%
Fake websites: 73.8%
Payment frauds: 73.8%
Identity thefts: 43.8%

4.5 Cyber Safety Practices

Always check HTTPS: 28.7%
Sometimes: 37.5%
Rarely: 33.8%
Use strong passwords: 56.3%
Two-factor authentication: 27.5%
Use same password everywhere: 11.3%
Take no security measures: 5%

4.6 Experience with Cyber Threats

 ISBN No- 978-93-342-5395-5

Have been victims: 20%
Know someone affected: 51.2%
No experience: 28.7%

4.7 Sources of Cybersecurity Awareness

Social Media: 65%
School/College: 6.3%
News Articles: 10%
Friends/Family: 15%
Do not learn actively: 3.7%

4.8 Perceived Safety While Shopping Online

Not safe at all: 8.8%
Somewhat safe: 20%
Neutral: 56.3%
Safe: 10%
Completely safe: 5%

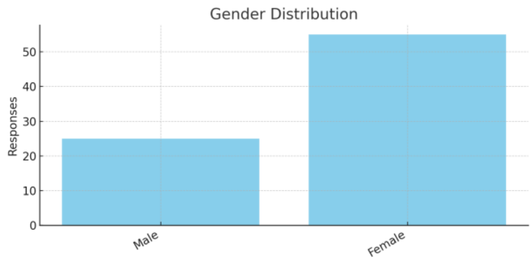
4.9 Measures Considered Important for Online Safety

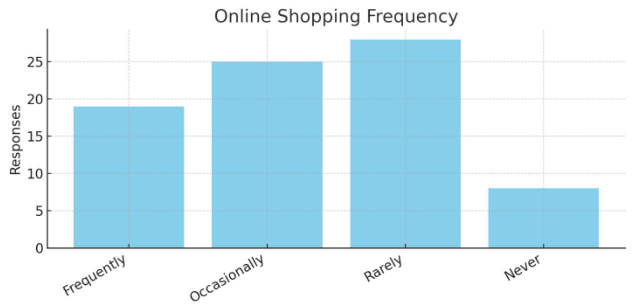
Top selected practices:
Using secure payment methods: 62.5%
Checking HTTPS/website authenticity: 56.3%
Avoiding public Wi-Fi: 47.5%
Two-factor authentication: 38.8%
Regularly updating passwords: 30%

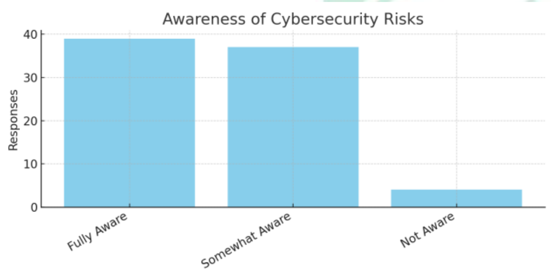
4.10 Opinions on E-Commerce Platform Security

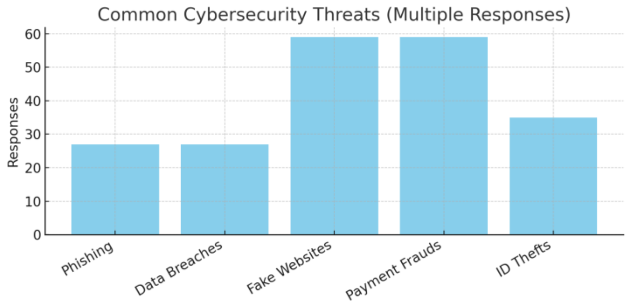
Sufficient security measures: 22.5%
Somewhat secure, but improvement needed: 63.7%
Not secure enough: 13.7%

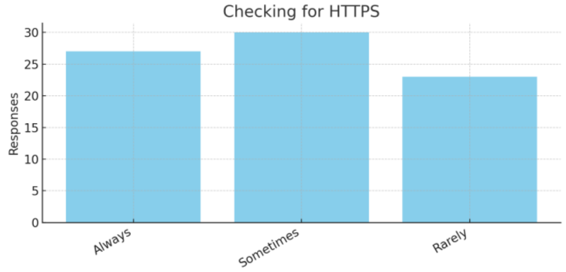
Graphical representation of Data

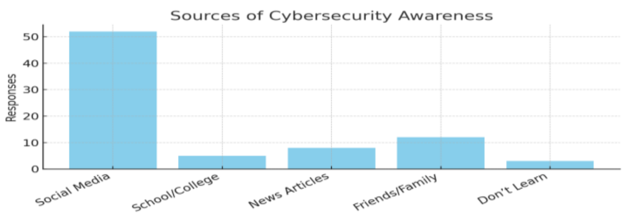


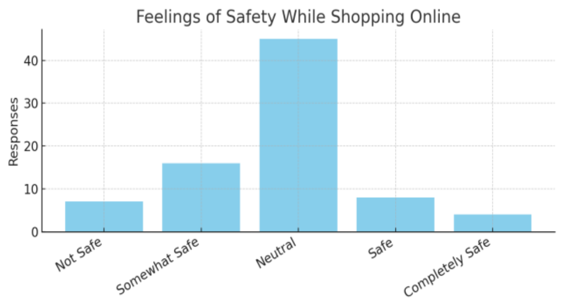


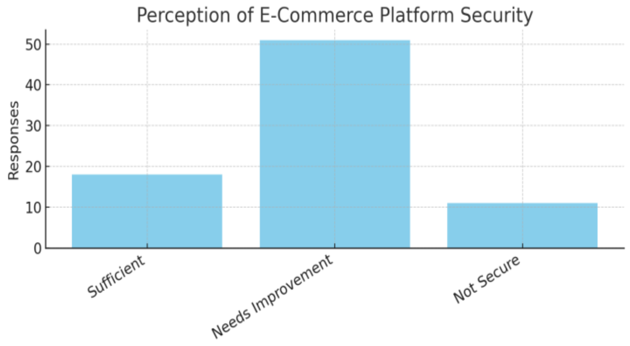












Findings and Interpretation

The survey reveals that while a majority of young users (15–20 years) are aware of cybersecurity threats in e-commerce, the most shocking part was their actual safety practices often fall short. Most respondents (68.8%) were female, and while 35% shop online occasionally, 23.8% do so frequently. Around 49% are fully aware of cyber threats, with phishing, fake websites, and payment frauds being the most commonly identified risks.

Despite this awareness, only 28.7% always check for HTTPS, and a significant number (56.3%) do not adopt strong security measures. This highlights a clear gap between awareness and practice. Which tells us that mainly it's the careless attitude towards cybersecurity rather than unawareness. While 20% have been victims of online fraud, over half (51.2%) know someone who has. This suggests that young users are exposed to threats either directly or indirectly.

Most respondents (65%) rely on social media for cybersecurity knowledge, while only 6.3% learn about it through formal education. Additionally, 56.3% feel neutral or unsafe when shopping online, and 63.7% believe that e-commerce platforms need to significantly improve their cybersecurity. These findings tell us that more emphasis needs to be given on cybersecurity security education through formal education.

These findings underline the importance of both user behavior (careless attitude) and platform accountability in ensuring safe digital transactions.

Suggestions

1.Digital Literacy: Schools and colleges should integrate basic cybersecurity education into their curriculum to build early awareness among young users of cybersecurity.

2. **Awareness Campaigns:** Government and platforms should run mass social media-based awareness drives targeting youth.

3.Platform Responsibility: E-commerce websites must increase transparency about their security measures and simplify user privacy settings.

4.Promote Safe Habits: Users should be encouraged to use secure payment options, two-factor authentication, and regularly update passwords which are complex to crack.

5.Parental/Peer Guidance: As young users rely on peers' reviews, fostering open conversations at home and among friends can reinforce safe practices.

Conclusion

In Today AI powered world where cybersecurity in e-commerce has become a growing concern, especially as the digital marketplace continues to expand beyond leaps and bounds; this study aimed to understand the awareness, behavior, and perception of cybersecurity among young online shoppers aged 15 to 20. The findings reveal a significant stark contrast between awareness levels and the implementation of safe online practices. While nearly half of the respondents are aware of potential threats such as phishing, payment fraud, and fake websites, many still fail to take basic precautions such as checking for HTTPS or enabling two-factor authentication which clearly tells us about the lack of seriousness in terms of cybersecurity among users.

The survey also highlights that most young users gain their cybersecurity knowledge from social media rather than formal education which tells us that the source which gives them this information is not credible. This dependence on informal sources may result in incomplete or misleading information. Additionally, despite being digital natives, a large number of respondents feel neutral or even unsafe when shopping online. This indicates a lack of confidence not only in their personal knowledge but also in the protective measures offered by e-commerce platforms which arises due to bad past experiences or lack of proper education.

Another notable discovery is that a considerable number of participants have either been victims of online fraud or know someone who has. This exposure highlights the urgent need for both individual action and institutional responsibility. E-commerce companies must invest in more visible and user-friendly security measures, and users must be encouraged to adopt safer online habits.

In conclusion, we can say that cybersecurity in e-commerce is not just a technical issue but also a social and behavioral challenge. Bridging the gap between awareness and practice requires combined efforts from individuals, educators, businesses, and policymakers. Only through coordinated awareness, education, and technological innovation accompanied by mutual efforts can a truly safe digital shopping environment be created for the next generation of online consumers.

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Annexure

Survey Questionnaire: Cybersecurity in E-Commerce

The following multiple-choice questions were used to collect primary data from 80 respondents aged 15 to 20 years:

1. Gender
Male
Female
2. How often do you shop online?
Frequently
Occasionally
Rarely
Never
3. Are you aware of cybersecurity risks when shopping online?
Yes, I am fully aware
Somewhat aware
Not at all aware
4. Which cybersecurity threats do you think are most common in e-commerce? (Select all that apply)
Phishing scams
Data breaches
Fake websites
Payment frauds
Identity thefts
5. Do you check if the website has HTTPS before making a purchase?
Always
Sometimes
Rarely
6. How do you usually secure your online account?
Strong password
Two-factor authentication
Using the same password for all sites
I do not take any security measures
7. Have you ever faced any cybersecurity issues while shopping online?
Yes, I have been a victim of an online scam/fraud
No, but I know someone who has
No, I have never experienced such issues
8. Where do you mostly learn about online security?
Social media
School/College
News articles
Friends and family
I don't actively learn about it
9. How safe do you feel while shopping online?
Not safe at all
Somewhat safe
Neutral
Safe
Completely safe
10. Which safety measures do you consider most important for safe online shopping? (Select all that apply)
Using secure payment methods (credit cards, digital wallets)
Avoiding public Wi-Fi for transactions
Checking the HTTPS and website authenticity
Regularly updating passwords
Enabling two-factor authentication

The Role of Paytm in Advancing India's Digital Economy

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Abstract:
India's digital economy has witnessed exponential growth in recent years, with financial technology (fintech) playing a pivotal role in this transformation. Among the key drivers of this shift is Paytm, a homegrown fintech company that evolved from a mobile recharge platform into a comprehensive digital payment's ecosystem. This research paper examines the contribution of Paytm in promoting a cashless economy and advancing financial inclusion in India. The study adopts a descriptive research design, utilizing both primary and secondary data to evaluate user adoption patterns, service accessibility, and the platform's impact on small merchants and unbanked populations. Findings indicate that Paytm has significantly influenced digital transaction habits, especially following the 2016 demonetization. Its user-friendly interface, QR-code-based merchant solutions, and integration of banking and financial services have made it a catalyst for economic empowerment and digital inclusion. Despite facing regulatory and competitive challenges, Paytm continues to play a vital role in shaping India's digital financial infrastructure. The study underscores the importance of innovation, accessibility, and compliance in sustaining this progress.
Keywords: Paytm, Cashless Economy, Fintech, digital transaction

Introduction:
In recent years, India has witnessed a transformative shift towards a digitally empowered economy, driven in large part by advancements in financial technology (fintech). At the heart of this transformation lies the digital payments ecosystem, which has rapidly changed due to increased smartphone use, government initiatives like *Digital India*, and the growing demand for convenient and secure financial transactions. One of the key players catalyzing this digital revolution is Paytm, a homegrown fintech company that has played a crucial role in India's digital economy.
Paytm Founded in 2010 as a simple mobile recharge platform, Paytm (short for "Pay Through Mobile") quickly expanded its services to include digital wallets, utility bill payments, e-commerce, ticketing, banking, and most notably, QR-code-based merchant payments. The company gained national importance during India's 2016 demonetization drive, where a sudden cash crunch pushed millions of Indians to adopt digital payment solutions. Paytm grabbed this opportunity, positioning itself as a reliable and user-friendly alternative to traditional cash transactions.
The platform's widespread acceptance, even in small towns and among informal sector merchants, marks a significant milestone in India's journey toward a cashless economy. Moreover, by providing financial access to individuals without traditional banking support, Paytm has emerged as a tool for financial inclusion, bridging the gap between rural and urban India, and between the banked and the unbanked population.

Objectives:
This research paper aims to explore the contribution of Paytm to India's digital economy, focusing on two core objectives:
1. To evaluate Paytm's impact on promoting a cashless economy in India.
2. To assess Paytm's role in enhancing financial inclusion and contributing to economic growth.

Review of Literature:
- **Singh and Sharma (2020):**
  Singh and Sharma conducted a study on the role of mobile wallets in financial inclusion. Their findings suggest that Paytm has significantly reduced the financial gap for small vendors and rural populations by offering accessible and affordable digital financial services. The platform's low barriers to entry and vernacular features have made it appealing to a diverse user base.
- **Jain and Kapoor (2023)**
  Jain and Kapoor's research paper discussed the emerging risks in the Indian fintech space, such as cybersecurity threats, data privacy issues, and regulatory challenges. They used Paytm as a case study to demonstrate how rapid expansion without adequate compliance mechanisms can lead to long-term setbacks in user trust and investor confidence.
- **Chatterjee and Roy (2022)**
  In a comparative study of global fintech ecosystems, Chatterjee and Roy highlighted Paytm's unique strategies for market penetration in India. They noted that Paytm's innovations like local-language support, offline payment modes, and audio-based transaction alerts have made it more accessible than Western or Chinese counterparts in the Indian context.

- **Aggarwal and Joshi (2022)**
  The authors investigated fintech's role in achieving financial equity in India. Their paper noted that Paytm has made digital banking accessible to marginalized sections, including low-income workers, women entrepreneurs, and daily-wage labourers. The study praised Paytm's zero-cost onboarding and micro-loan offerings via partnerships with NBFCs.
- **Verma and Kaur (2019)**
  Verma and Kaur's study focused on consumer perceptions of mobile wallets. Their survey revealed that 72% of respondents used Paytm primarily for utility bill payments and peer-to-peer transfers. They concluded that convenience, brand trust, and frequent usage incentives drove higher engagement with Paytm compared to lesser-known digital wallets.

Research Methodology:
This study adopts a **descriptive research design** to evaluate Paytm's contribution in India's digital economy, focusing on two key objectives: promoting a cashless economy and enhancing financial inclusion. **Secondary Data** collected from RBI reports, government publications, journal articles and Paytm's official releases.

1.Paytm's Impact on Promoting a Cashless Economy:

- **Adoption of Digital Payments:** Paytm's introduction of user-friendly services, such as mobile wallets and QR code-based payments, has significantly accelerated the adoption of digital transactions. The platform's ease of use has encouraged both consumers and merchants to embrace cashless methods.
- **Response to Demonetization:** The 2016 demonetization of ₹500 and ₹1,000 notes in India served as a catalyst for digital payment platforms. Paytm capitalized on this opportunity by providing an alternative to cash transactions, leading to a substantial increase in its user base and transaction volumes.
- **Market Expansion Initiatives:** Paytm's efforts to bridge the digital divide include the introduction of vernacular audio confirmations through its Soundbox feature, catering to India's diverse linguistic population. This approach has facilitated wider acceptance of digital payments across various demographics.

2. Paytm's Role in Financial Inclusion and Economic Growth:

- **Services for the Unbanked Population:** Paytm has played a crucial role in bringing financial services to unbanked and underbanked individuals, providing them with a platform for digital transactions and basic banking services.
- **Support for Small and Medium Enterprises (SMEs):** By offering payment solutions like QR codes and point-of-sale systems, Paytm has empowered SMEs to participate in the digital economy, thereby enhancing their operational efficiency and market reach.
- **Contribution to Economic Development:** The widespread adoption of Paytm's services has contributed to the formalization of the economy, increased transparency in financial transactions, and provided a boost to e-commerce growth in India.

3. Challenges and Regulatory Environment:

- Regulatory Hurdles**:** Paytm has faced regulatory challenges, including restrictions imposed by the Reserve Bank of India on its banking operations due to compliance issues. These developments highlight the importance of adhering to regulatory standards in the fintech sector.
- Market Competition**:** The emergence of the Unified Payments Interface (UPI) and other fintech players has intensified competition in the digital payments space, prompting Paytm to innovate continually to maintain its market position.

Conclusion:
Paytm has been instrumental in advancing India's digital economy by promoting cashless transactions and enhancing financial inclusion. Despite facing regulatory and competitive challenges, its contributions have significantly shaped the financial landscape of the country. Continued innovation and compliance with regulatory frameworks will be key to sustaining its impact on India's economic development.

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Artificial Intelligence: A Curse or a Blessing?

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Abstract
Artificial Intelligence (AI) is a revolutionary technology that has quickly influenced many facets of human life. From automating routine tasks to driving advanced processes in the medical, financial, and communication sectors, AI has tremendous potential. But with all its amazing benefits, AI also raises deeper ethical, social, economic, and security issues. Concerns of job displacement, monitoring, invasion of privacy, and independent decision-making have generated controversy worldwide. In this research paper, the twofold function of AI has been debated through critical discussion by examining its positive contributions and pitfalls. With the aid of real-life case studies, historical development of AI, surveys, and statistical facts, this paper is intended to respond to an existential question: Is AI a bane or a boon? The research ends with a discussion of how AI can be developed and regulated responsibly for the good of society.

Introduction

Artificial Intelligence (AI), an area of computer science, deals with developing machines capable of performing tasks that essentially require human intelligence. They range from learning by example (machine learning), voice recognition, decision-making, language translation, vision perception, to emotional responses. AI evolved from being entirely theoretical to becoming an everyday aspect of life over the last decades.

The promise of AI is enormous—it's transforming industries, reshaping how we work and live and interact with the world. At the same time, the emergence of AI has also brought a swarm of ethical and societal challenges. While most of us think AI will improve our quality of life and usher unprecedented progress, there are others concerned that AI would lead to vast job losses, increasing inequality, and loss of control over machines.

This essay analyzes AI's double nature—its potential to be both a positive force and a disruptor. Through in-depth analysis, real-world implementation, and expert perspectives, we analyze the current status of AI, its risks and benefits, and how it can be used responsibly.

Historical Background of AI

2.1 The Genesis of AI

The origin of AI can be traced back to ancient myths and legends where humans attempted to create intelligent machines or beings. However, the scientific exploration of AI began in the 20th century.

- 1950s: British mathematician Alan Turing proposed the idea of machine intelligence with the Turing Test, which evaluates a machine's ability to exhibit human-like intelligence.
- 1956: The Dartmouth Conference used the term "Artificial Intelligence," and AI became an official research field.
- 1970s–1980s: Expert systems were built that mimicked human decision-making. But with computers in short supply, the pace was slow.
- 1997: IBM's Deep Blue defeated world chess champion Garry Kasparov, demonstrating AI's ability to think strategically.
- 2011: IBM Watson defeated human champions on TV game show Jeopardy! demonstrating AI's natural language processing ability.
- 2016: Google's AlphaGo defeated world Go champion Lee Sedol, which was considered impossible earlier due to the complexity of the game.

2.2 The Rise of Machine Learning and Deep Learning

With increasing availability of data and computing power, AI has entered a new phase of machine learning (ML) and deep learning (DL). These technologies enable machines to learn from data patterns and forecast outcomes without explicit programming.

Now, AI powers everything from voice assistants and recommendation systems to health diagnostics and autonomous vehicles.

3. AI as a Boon

3.1 Transforming Healthcare

AI has revolutionized healthcare provision, diagnosis, and research significantly. It supports doctors in offering accurate diagnoses, designing treatments, and predicting diseases.

- Medical Imaging: AI algorithms can detect anomalies in X-rays, MRIs, and CT scans. For instance, Google's DeepMind AI correctly diagnosed breast cancer more effectively than radiologists.

- Drug Discovery: AI accelerates drug development by analyzing chemical compositions and predicting effective compounds. During the COVID-19 pandemic, AI helped identify potential treatments faster.
- Virtual Health Assistants: Chatbots and voice assistants provide round-the-clock health advice and schedule appointments.
- Predictive Analysis: AI models predict patient deterioration, allowing timely intervention.

According to a 2023 WHO report, AI-assisted diagnostics reduced error rates by 35% compared to traditional methods.

3.2 Enhancing Education

AI plays an essential part in personalizing learning experiences:

- Adaptive Learning Platforms: AI-enabled platforms like Coursera and Duolingo tailor content to learners' performance.
- Automated Grading: AI-enabled software saves teachers' time by auto-grading assignments and detecting plagiarism.
- Language Translation: AI-enabled software like Google Translate breaks linguistic barriers, and education becomes more inclusive.

EdTech Insights (2023): 67% of learners using AI-enabled platforms showed better learning outcomes than with traditional learning.

3.3 Productivity Growth in Companies

AI transforms industries into efficient, cost-effective, and innovative ones.

- Manufacturing: AI-powered robots increase production and detect defects.
- Finance: AI algorithms analyze market trends, detect fraud, and provide investment advice through robo-advisors.
- Customer Service: AI chatbots answer queries, increasing service availability and reducing workload.

McKinsey & Company (2023): 75% of companies that implemented AI experienced a 20–40% increase in productivity.

3.4 Farm Modernization

AI is helping to modernize farming by enhancing crop management, resource allocation, and yield prediction:

- Precision Agriculture: AI algorithms analyze weather patterns, soil quality, and crop health to recommend optimal sowing and harvesting times.
- Drones and Sensors: AI-powered drones survey vast fields for pests, irrigation issues, or disease outbreaks in real time.
- Yield Forecasting Models: Machine learning helps farmers predict crop yields and make informed decisions.
  According to the UN's FAO (2022), implementing AI in agriculture boosted crop production by 30% and reduced water consumption by 20% in pilot districts.

3.5 Promoting Inclusion and Accessibility

AI empowers differently-abled individuals and everyone else and makes them more inclusive:

- Speech-to-Text and Text-to-Speech: Software like Otter.ai or Google's Speech API assists those with hearing or speech disabilities.
- Prosthetics Smart: AI-controlled limbs adapt to the user's movement in order to attain enhanced mobility.
- Vision Aid: Programs like Seeing AI describe settings, text, and people to the blind.
  World Bank Report (2023): AI-powered assistive technology improved the quality of life for over 80 million impaired individuals worldwide.

3.6 Environmental Conservation

AI facilitates green living and combats climate change

- Wildlife Monitoring: AI-enabled cameras detect and track endangered species to prevent poaching.
- Energy Efficiency: Intelligent grids use AI to optimize electricity usage and reduce wastage.
- Pollution Identification: Satellite images and AI software detect polluted sites and illegal dumping sites.

UNEPA (2023): AI-enabled conservation contributed to a 15% rise in the survival rate of endangered species in certain reserves.

4. AI as a Bane

Let's now turn to the dark side — the problems, dangers, and hazards AI poses.

4.1 Job Displacement and Economic Inequality

Perhaps the biggest issue with AI is job loss through automation:

- Manufacturing & Logistics: Robots and automated systems are taking over assembly line workers and warehouse staff.
- Transportation: Autonomous vehicle technology is displacing drivers in trucking and taxi industries.
- Customer Support: Chatbots are diminishing human contact in service jobs.
- White-Collar Occupations: AI tools in law, finance, and healthcare are mechanizing tasks long done by skilled professionals.

WEF Report (2024): AI may replace 85 million jobs globally by 2025 but might create 97 million new ones — if employees get retrained.

4.2 Ethics Issues and Bias in AI

AI programs can learn bias from training data:

- Hiring Bias: AI recruitment software has been found to favor male candidates or particular ethnicities.
- Facial Recognition: Studies (e.g., MIT's 2019 report) show higher error rates in the recognition of women and darker-skinned people.
- Judicial Risk: Predictive sentencing and policing AI software can perpetuate systemic bias, leading to unfair punishment.

Example: Amazon was compelled to shut down its AI recruitment program after it discovered it discriminated against female job applicants.

4.3 Invasion of Privacy and Surveillance

AI dependence on big data raises inherent privacy concerns:

- Mass Surveillance: States use AI face recognition to monitor citizens, sometimes suppressing dissent.
- Data Mining: Tech giants track users' activities, interests, and location for targeted ads—sometimes without consent.
- Deepfake Technology: Fake videos indistinguishable from reality can be created, which leads to disinformation, harassment, or blackmail.

Pew Research (2023): 78% of those surveyed are concerned about AI trespassing on their digital privacy.

4.4 Cyber Threats and Security Risks

AI is being militarized against malevolent use:

- AI Malware: AI is used by cybercriminals to create adaptive, untraceable viruses.
- Autonomous Weapons: Deadly AI guide killer robots and drones in life-or-death situations without human command.
- Deepfake Fraud: Con artists use AI to impersonate CEOs or politicians, causing reputational and monetary damage.

UN reports warn that lack of control on AI for military use might result in unforeseen wars or conflict.

4.5 Social and Psychological Consequences

Even mental health and interpersonal relationships suffer:

- Isolation: Overreliance on AI pals or virtual help might reduce interaction with people.
- Addiction & Diversion: Recommendation algorithms (YouTube, TikTok) are attention-maximizing in design, apt to create excessive usage.
- Disinformation: AI-generated deepfakes and skewed journalism can divide countries.

Stanford Study (2023): AI-powered content personalization resulted in excessive screen time and teen addiction.

5. Real-World Case Studies: AI in Action

5.1 Case Studies Demonstrating AI as a Blessing

Case 1: AlphaFold by DeepMind

DeepMind's AlphaFold solved the decades-old protein-folding problem in 2020. It accurately predicted the 3D structure of proteins with unprecedented accuracy.

Impact: Revolutionized drug development and biology. Scientists used AlphaFold predictions to study Parkinson's and Alzheimer's disease.

Case 2: Artificial Intelligence for Natural Disaster Management

AI has been adopted by India and Japan for early warning flood and earthquake systems. AI can analyze seismic activity and predict earthquakes more accurately.

Result: Indian pre-monsoon evacuations rescued thousands of people in 2023.

Case 3: Self-Driving Cars

Tesla, Waymo, and numerous other companies use AI in autonomous cars. The vehicles read traffic data, make real-time decisions, and reduce human error.

Potential: Reduced accident, better fuel efficiency, and convenience for the aged or physically impaired.

5.2 Case Studies Illustrating AI as a Bane

Case 4: Deepfake Scandals

Deepfakes made with AI have been used in political elections and financial scams.

In 2023, a CEO's voice was deep faked in a scam, leading to a fake $35 million company transfer by the finance team.

Case 5: AI Bias in Hiring

A top tech firm created an AI hiring tool that was shelved after it was discovered to prefer male candidates based on biased training data.

Consequence: Reinforced workplace gender bias.

Case 6: Surveillance in Authoritarian Regimes

Facial recognition AI is used heavily in countries like China for mass surveillance and repression of dissent.

Risk: Erosion of civil liberties and human rights.

6. Public Perception and Surveys

To understand what people think of AI, various organizations have conducted world surveys.

6.1 Ipsos Global Survey (2024)

- 72% respondents agreed that AI would improve lives.
- 64% feared losing jobs because of AI.
- 58% were privacy and surveillance concerned.

6.2 Pew Research Center (2023)

- Positive sentiments: Healthcare (82%), Education (74%)
- Negative sentiments: Military AI (85%), Surveillance (67%)
- Divided: Social media content moderation and law enforcement use of AI.

6.3 Youth and AI

Young people and students are on average more positive:

- 86% believe that AI will create new opportunities.
- 49% also fear to be replaced by machines.

7. Future Trends in AI

AI is yet to be developed, and the next few decades will definitely usher in revolutions:

7.1 Generative AI

Gadgets like ChatGPT, DALL·E, and Midjourney are leading the charge for a creative AI revolution that can create text, images, and even videos.

Problem: Misinformation, academic plagiarism, abuse of deepfakes.

7.2 Artificial General Intelligence (AGI)

Developing AGI — machines equal to human intelligence — could be the greatest tech revolution.

Visionaries such as Elon Musk and Stephen Hawking have warned about the existence threat of runaway AGI.

7.3 AI and Ethics

There is growing demand for ethically designed AI. Transparency, accountability, and fairness will be central to next-generation systems.

7.4 International Governance

International regulation can be expected to increase. The EU AI Act (2024) and OECD AI Principles are driving towards global standards that are responsible.

8. Conclusion: So, Is AI a Bane or a Boon?

Artificial Intelligence is not simply just a blessing nor is it wholly a bane—it's an powerful agent, and what it does is in the use we make of it.

As a Boon, AI:

- Saves lives in healthcare,
- Increases productivity and education,
- Aids the environment,
- Seeks accessibility,
- Spurs innovation.

As a Bane, AI:

- Destroys jobs,
- Intrudes on privacy,
- Duplicates biases,
- Aids surveillance and abuse,
- Loses ethical limits in some fields.

Thus, the future of AI needs to be human-centred—ethics, equity, and empowerment. With regulation, transparency, and global collaboration, AI can be made to enhance the human experience rather than impede it.

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ई कामर्स में साइबर सुरक्षा और अनुवाद

डॉ. अनवर अहमद सिद्दीक़ी
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शोध सार :
ई-कॉमर्स के अंतर्गत साइबर सुरक्षा आज एक बेहद महत्वपूर्ण और अत्यंत आवश्यक विषय के रूप अपनी विशिष्ट पहचान रखता है। सामान्यतः यह ऑनलाइन लेन-देन और डेटा की सुरक्षा के लिए बेहद आवश्यक है। वर्तमान समय में स्मार्टफोन और अन्य गैजेट्स का प्रयोग आम बात हो गयी है। साइबर तकनीक और उसके अनुप्रयोगों को समझने से पहले इस विषय पर गंभीरता से विचार करना आवश्यक है। वर्तमान समय में साइबर सुरक्षा हमारे जीवन का एक महत्वपूर्ण पहलू बन चुकी है, क्योंकि हमारी समस्त व्यक्तिगत, स्वास्थ्य संबंधी और वित्तीय जानकारियाँ इंटरनेट और वेब पर संग्रहीत होती हैं, जिसे हम आज **क्लाउड** के नाम से जानते हैं।अतः अनुवाद के द्वारा साइबर सुरक्षा में बेहद सहायता मिल सकती है।

वर्चुअल प्लेटफॉर्म पर जानकारी साझा करने से हम वैश्विक स्तर पर अन्य लोगों से जुड़ सकते हैं, सूचनाओं के प्रवाह को नियंत्रित कर सकते हैं। उसी तरह आपस में आवश्यक जानकारियाँ साझा कर सकते हैं। हालाँकि, यह ध्यान रखना आवश्यक है कि एक बार डेटा अपलोड हो जाने के बाद वह स्थायी रूप से ऑनलाइन बना रहता है, लेकिन जब तक उसे उचित सुरक्षा प्रदान नहीं की जाती, तब तक वह पूरी तरह सुरक्षित नहीं होता, जिससे कई प्रकार के खतरें उत्पन्न हो सकते हैं। उक्त जानकारी केवल अंग्रेज़ी भाषा तक सीमित होने से भाषा की दृष्टि से आम लोगों तक समझने हेतु अनुवाद एक बेहतर विकल्प हो सकता है।

बीज शब्द : ई कामर्स, साइबर सुरक्षा, अनुवाद

विषय प्रवेश :
तकनीकी प्रगति के साथ, कृत्रिम बुद्धिमत्ता (AI) को व्यापक रूप से अपनाया जा रहा है। इंटरनेट ऑफ थिंग्स (IOT) और AI आने वाले वर्षों में इंटरनेट और वैश्विक अर्थव्यवस्था को पूरी तरह से बदल देंगे। अगले पाँच वर्षों में, AI और मशीन लर्निंग (ML) सभी प्रकार की तकनीकों में सम्मिलित हो जाएंगे, जिनमें डेटा विश्लेषण और उसके आदान-प्रदान की प्रक्रिया भी सम्मिलित होगी।

आज अधिकांश लोग स्मार्टफोन, लैपटॉप, होम राउटर, स्मार्ट टीवी, अत्याधुनिक कारों, डीवीआर और कैमरों आदि के माध्यम से इंटरनेट से जुड़े रहते हैं। यह कनेक्टिविटी हमें ऑनलाइन शॉपिंग, मूवी देखने, संगीत सुनने, मानचित्रों का उपयोग करने, ऑनलाइन सर्च करने और बिलों का भुगतान करने जैसी सुविधाएँ प्रदान करती है। IOT के आगमन के साथ, अब बल्ब, थर्मोस्टेट और एयर कंडीशनर जैसे उपकरण भी इंटरनेट से जुड़े हैं। दुर्भाग्यवश, इनमें से कई डिवाइसेस साइबर सुरक्षा को ध्यान में रखकर नहीं बनाए गए हैं, जिससे नई साइबर समस्याओं का खतरा बढ़ जाता है।

कंप्यूटर सुरक्षा और साइबर सुरक्षा का उद्देश्य कंप्यूटर सिस्टम को चोरी, हार्डवेयर या सॉफ्टवेयर की क्षति, डेटा की हानि और सेवाओं में रुकावट से बचाना है। तकनीकी निर्भरता के बढ़ते प्रभाव के कारण साइबर सुरक्षा आज जीवन का एक अपरिहार्य और अनिवार्य अंग बन गई है। यह सूचना प्रौद्योगिकी (आईटी) के अंतर्गत एक विशेष क्षेत्र है, जिसे कंप्यूटर विज्ञान की एक शाखा माना जाता है।

साइबर सुरक्षा के अंतर्गत ऑपरेटिंग सिस्टम, नेटवर्क और डेटा को साइबर हमलों अर्थात अपराधों से सुरक्षित रखने का प्रशिक्षण दिया जाता है। ई-कॉमर्स और वित्तीय क्षेत्र में इसके व्यापक उपयोग के कारण यह व्यवसायों के लिए अत्यंत महत्वपूर्ण हो गया है। इस तकनीक के माध्यम से न केवल डेटा की सुरक्षा सुनिश्चित की जाती है, बल्कि डिजिटल लेन-देन को भी सुरक्षित बनाया जाता है। अतः उक्त जानकारी अनुवाद की दृष्टि से बेहद ज़रूरी है।

साइबर सुरक्षा का अर्थ

'साइबर खतरे 'एक वैश्विक चुनौती बन चुके हैं, जिनसे सरकारों, निजी संस्थानों, गैर-सरकारी संगठनों और समग्र रूप से वैश्विक समुदाय को निपटने की आवश्यकता है। कंप्यूटर सुरक्षा, साइबर सुरक्षा या सूचना प्रौद्योगिकी सुरक्षा का उद्देश्य कंप्यूटर सिस्टम और नेटवर्क को सुरक्षा प्रदान करना है ताकि संवेदनशील सूचनाओं की चोरी, हार्डवेयर और सॉफ़्टवेयर को नुकसान, डेटा के दुरुपयोग और सेवाओं में व्यवधान से बचा जा सके।

ई-कॉमर्स के बढ़ते उपयोग के साथ, डिजिटल सुरक्षा सुनिश्चित करने के लिए साइबर सुरक्षा उपायों को अपनाना अनिवार्य हो गया है। साइबर सुरक्षा का उद्देश्य सिस्टम, नेटवर्क और डिजिटल कार्यक्रमों को साइबर हमलों से बचाना है। इन हमलों का मुख्य उद्देश्य संवेदनशील डेटा तक पहुँच प्राप्त करना, उसे बदलना या नष्ट करना, वित्तीय धोखाधड़ी को अंजाम देना, या व्यावसायिक प्रक्रियाओं को बाधित करना होता है। प्रभावी साइबर सुरक्षा उपायों को लागू करना चुनौतीपूर्ण बना हुआ है, क्योंकि डिजिटल उपकरणों की संख्या लगातार बढ़ रही है और साइबर अपराधी अधिक उन्नत तकनीकों का उपयोग कर रहे हैं।

ई-कॉमर्स पर साइबर सुरक्षा का प्रभाव

साइबर सुरक्षा किसी भी व्यवसाय या संगठन में सुरक्षा व्यवस्था का एक अनिवार्य हिस्सा है, जिसका उद्देश्य आईटी सिस्टम की अधिकृत पहुंच को सुनिश्चित करना और अनधिकृत हस्तक्षेप को रोकना होता है। इसका प्राथमिक उद्देश्य व्यवसाय को सुरक्षित रखते हुए उसे अधिक कुशल और सफल बनाना है। इसके तहत व्यापारिक ब्रांड की सुरक्षा, वित्तीय नुकसान की रोकथाम और व्यावसायिक प्रक्रियाओं में रुकावट को कम करने के लिए विश्वसनीय रणनीतियाँ अपनाई जाती हैं, जिससे ग्राहकों, उपभोक्ताओं, निवेशकों और अन्य हितधारकों का विश्वास बना रहता है।

साइबर सुरक्षा उपायों को डेस्कटॉप कंप्यूटर, सर्वर, लैपटॉप, नोटबुक, स्मार्टफोन और नेटवर्क उपकरणों पर लागू किया जाना चाहिए। इसमें वे सभी प्रक्रियाएँ और तकनीकें सम्मिलित होती हैं, जो डिजिटल उपकरणों, सूचना और सेवाओं को अनधिकृत पहुँच, हेरफेर या नष्ट होने से बचाने में सहायता प्रदान करती हैं। आज के डिजिटल युग में, कंप्यूटर सिस्टम पर बढ़ती निर्भरता के कारण साइबर सुरक्षा की आवश्यकता और अधिक बढ़ गई है।

विशेषज्ञों के अनुसार, ऐसा कोई भी संगठन खोजना मुश्किल है, जिसका डेटा किसी भी स्तर पर सुरक्षित न रहा हो। साइबर सुरक्षा में 'सी.आई.ए.' (CIA) का संक्षिप्त रूप डेटा के तीन महत्वपूर्ण पहलुओं—गोपनीयता (Confidentiality), अखंडता (Integrity) और उपलब्धता (Availability)—को दर्शाता है, जो साइबर खतरों से सुरक्षा सुनिश्चित करने के प्रमुख कारक हैं।

ई-कॉमर्स के अंतर्गत साइबर सुरक्षा के महत्वपूर्ण प्रकार दर्शाए जा रहे हैं, जिनकी चर्चा विस्तार से निम्नलिखित की गई है,

साइबर सुरक्षा : प्रकार

1) **नेटवर्क सुरक्षा :** नेटवर्क सुरक्षा के द्वारा नेटवर्क को हैकिंग और मैलवेयर से बचाना इसके अंतर्गत सम्मिलित है।
2) **डेटा सुरक्षा :** डेटा सुरक्षा में ग्राहकों अथवा उपभोक्ताओं के डेटा को सुरक्षित करना इसमें सम्मिलित है, यथा- नाम, पता, क्रेडिट कार्ड नंबर आदि की सुरक्षा बेहद ज़रूरी है।
3) **एप्लिकेशन सुरक्षा :** एप्लिकेशन सुरक्षा में ई-कॉमर्स वेबसाइट और एप्लिकेशन को सुरक्षित करना सम्मिलित है।

साइबर सुरक्षा : महत्त्वपूर्ण उपकरण

1) **फ़ायरवॉल :** फ़ायरवॉल एक महत्वपूर्ण सुरक्षा उपकरण है, जो नेटवर्क को हैकिंग और मैलवेयर से सुरक्षित रखने में सहायता करता है।
2) **एंटीवायरस :** एंटीवायरस भी एक सुरक्षा उपकरण कहलाता है, जो वायरस और मैलवेयर से सुरक्षित रखने में सहायता प्रदान करता है।
3) **इन्क्रिप्शन :** इन्क्रिप्शन एक सुरक्षा उपकरण है, जो डेटा को सुरक्षित रखने में सहायता करता है।

साइबर सुरक्षा : लाभ

- **ग्राहकों का विश्वास उत्पन्न करना :** साइबर सुरक्षा के माध्यम से ग्राहकों में विश्वास उत्पन्न किया जा सकता है।
- **डेटा की सुरक्षा :** साइबर सुरक्षा के माध्यम से डेटा की सुरक्षा प्रदान की जा सकती है।
- **व्यवसाय की सुरक्षा :** साइबर सुरक्षा के माध्यम से व्यवसाय को सुरक्षा प्रदान की जा सकती है।

उपर्युक्त विवेचन से स्पष्ट होता है कि ई-कॉमर्स और अनुवाद के मध्य एक गहरा नाता है। ई-कॉमर्स कंपनियों को अपने उत्पादों और सेवाओं को वैश्विक बाज़ार में पेश करने के लिए अनुवाद की बेहद आवश्यकता प्रतीत होती है।

ई-कॉमर्स में अनुवाद के कुछ महत्वपूर्ण तत्वों पर चर्चा करना समीचीन प्रतीत होता है, यथा-

- **उत्पाद विवरण का अनुवाद :** ई-कॉमर्स कंपनियों को अपने उत्पादों के विवरण का अनुवाद करना बेहद आवश्यक होता है ताकि वे अपनी भाषा के द्वारा समझ सकें।
- **वेबसाइट का अनुवाद :** ई-कॉमर्स कंपनियों को अपनी वेबसाइट का अनुवाद करना होता है ताकि उन्हें उक्त जानकारी विभिन्न भाषाओं द्वारा आसानी से समझ सकें।
- **ग्राहक सेवा का अनुवाद :** ई-कॉमर्स कंपनियों को अपनी ग्राहक सेवा का अनुवाद करना होता है ताकि वे विभिन्न भाषाओं में जानकारी प्रदान हो सकें।

- **विपणन सामग्री का अनुवाद :** ई-कॉमर्स कंपनियों को अपनी विपणन सामग्री का अनुवाद करना होता है ताकि वे अपनी भाषा के द्वारा जानकारी मुहैया करा सकें।
- **सांस्कृतिक अनुवाद :** ई-कॉमर्स कंपनियों को अपने उत्पादों और सेवाओं का सांस्कृतिक अनुवाद करना होता है ताकि वे विभिन्न संस्कृतियों को आसानी से समझ सकें।

उपर्युक्त तत्वों के माध्यम से यह स्पष्ट होता है कि ई-कॉमर्स में अनुवाद एक महत्वपूर्ण तत्व है, जो वैश्विक बाजार में सफलता अर्जित करने की दृष्टि से आवश्यक है। ई-कॉमर्स में साइबर सुरक्षा और अनुवाद दोनों ही महत्वपूर्ण भूमिकाएँ अदा करते हैं। निम्न कुछ विधियाँ हैं, जिनमें साइबर सुरक्षा और अनुवाद ई-कॉमर्स दोनों ही महत्वपूर्ण माने जाते हैं, यथा-

साइबर सुरक्षा :

- **ग्राहक डेटा की सुरक्षा :** ई-कॉमर्स कंपनियों को अपने ग्राहकों के डेटा की सुरक्षा स्वयं ही करनी होती है, यथा- नाम, पता, क्रेडिट कार्ड नंबर आदि।
- **वेबसाइट की सुरक्षा :** ई-कॉमर्स कंपनियों को अपनी वेबसाइट की सुरक्षा करनी होती है, यथा- हैकिंग और मैलवेयर से सुरक्षित रखना।
- **लेन-देन की सुरक्षा :** ई-कॉमर्स कंपनियों को अपने लेन-देन की सुरक्षा स्वयं करनी होती है, यथा- पेमेंट (भुगतान) गेटवे की सुरक्षा करना।

साइबर सुरक्षा और अनुवाद की आवश्यकता

- **वेबसाइट का अनुवाद :** भारत में अधिकतर लोग हिंदी समझते है । मातृभाषा में अनुवाद करने से अधिक समय तक लोग खोज कर सकते है ।ई-कॉमर्स कंपनियाँ अगर अपनी वेबसाइट का अनुवाद करते है तो अधिक लोगों तक जानकारी मिलने से लोगों का आत्मविश्वास भी बढ़ता है।
- **उत्पाद विवरण का अनुवाद :** ई-कॉमर्स कंपनियों को अपने उत्पादों के विवरण का अनुवाद करना होता है ताकि वे विभिन्न भाषाओं में आसानी से जानकारी मुहैया करा सकें। जब ग्राहक को उसकी भाषा में जानकारी मिलती है, तब वह उस. ब्रांड पर अधिक भरोसा करता है तथा उत्पाद सम्बधी अधिक पारदर्शिता मिलती है। उदा. Product Name (उत्पाद का नाम), Stainless still Tiffin (स्टेनलेस स्टील टिफ़िन), Capacity (क्षमता) ml, Colour (रंग), Silver (चांदी जैसा), Price (मूल्य) ₹499/-
- **ग्राहक सेवा का अनुवाद :** ई-कॉमर्स कंपनियों को अपनी ग्राहक सेवा का अनुवाद करना होता है ताकि वे विभिन्न भाषाओं में समझ पाने में दक्ष हो सकें। ग्राहक सेवा की जानकारी जब अपनी भाषा में या हिन्दी भाषा में दी जाती है, तब ग्राहक उसे अच्छी तरह. से समझते है और उसे सही निर्णय लेने में भी उसे सहायता अधिक मिलती है ।

साइबर सुरक्षा और अनुवाद के मध्य संबंध

- **सुरक्षित अनुवाद :** ई-कॉमर्स कंपनियों को अपने अनुवाद को सुरक्षित करना होता है, यथा- अनुवाद के दौरान डेटा को सुरक्षित रखना।
- **अनुवाद के माध्यम से साइबर सुरक्षा :** ई-कॉमर्स कंपनियों को अपने अनुवाद के माध्यम से साइबर सुरक्षा के संदर्भ में जागरूकता का विस्तार करना होता है, यथा- ग्राहकों को अपने डेटा की सुरक्षा के संदर्भ में जानकारी मुहैया कराना।

उपर्युक्त विवेचन से यह स्पष्ट होता है कि साइबर सुरक्षा और अनुवाद दोनों ई-कॉमर्स में महत्वपूर्ण भूमिकाएँ अदा करते हैं।

ई-कॉमर्स में अनेक प्रकार के उपकरणों का उपयोग किया जाता है, जो व्यवसाय को ऑनलाइन चलाने और ग्राहकों के साथ जुड़ने में सहायता करते हैं। निम्न कुछ प्रमुख उपकरण की चर्चा की जा रही हैं, जो ई-कॉमर्स के लिए प्रयुक्त किए जाते हैं:

ई-कॉमर्स प्लेटफ़ॉर्म और हिंदी अनुवाद

1) **शॉपिफ़ाई :** शॉपिफ़ाई एक लोकप्रिय ई-कॉमर्स प्लेटफ़ॉर्म कहलाता है, जो व्यवसायों को ऑनलाइन स्टोर बनाने और संचालित करने में सहायता प्रदान करता है।
2) **मैगेंटो :** मैगेंटो एक ओपन-सोर्स ई-कॉमर्स प्लेटफ़ॉर्म कहलाता है, जो व्यवसायों को ऑनलाइन स्टोर बनाने और संचालित करने में सहायता प्रदान करता है।
3) **वूकॉमर्स :** वूकॉमर्स एक पॉपुलर ई-कॉमर्स प्लेटफ़ॉर्म कहलाता है, जो व्यवसायों को ऑनलाइन स्टोर बनाने और उसे संचालित करने में सहायता प्रदान करता है।

भुगतान गेटवे में हिंदी अनुवाद की आवश्यकता –

- **पेपैल :** पेपैल एक लोकप्रिय भुगतान गेटवे कहलाता है, जो व्यवसायों को ऑनलाइन भुगतान स्वीकार करने में सहायता प्रदान करता है।
- **स्ट्राइप :** स्ट्राइप एक पॉपुलर भुगतान गेटवे कहा जाता है, जो व्यवसायों को ऑनलाइन भुगतान स्वीकार करने में सहायता प्रदान करता है।
- **पेटीएम :** पेटीएम एक लोकप्रिय भुगतान गेटवे माना जाता है जो व्यवसायों को ऑनलाइन भुगतान स्वीकार करने में सहायता प्रदान करता है।

मार्केटिंग और विज्ञापन

1) **गूगल एनालिटिक्स :** गूगल एनालिटिक्स एक वेब एनालिटिक्स टूल के रूप में जाना जाता है, जो व्यवसायों को अपनी वेबसाइट के ट्रैफिक और व्यवहार को ट्रैक करने में सहायता प्रदान करता है।
2) **फेसबुक एड्स :** फेसबुक एड्स एक पॉपुलर विज्ञापन प्लेटफ़ॉर्म कहलाता है, जो व्यवसायों को अपने उत्पादों और सेवाओं को प्रमोट करने में सहायता प्रदान करता है।
3) **इन्स्टाग्राम एड्स :** इन्स्टाग्राम एड्स एक पॉपुलर विज्ञापन प्लेटफ़ॉर्म कहलाता है जो व्यवसायों को अपने उत्पादों और सेवाओं को प्रमोट करने में सहायता प्रदान करता है।

ग्राहक सेवा :

- **फ्रेशडेस्क :** फ्रेशडेस्क एक ग्राहक सेवा सॉफ़्टवेयर कहलाता है, जो व्यवसायों को अपने ग्राहकों के साथ जुड़ने और उनकी समस्याओं और कठिनाइयों का योग्य निवारण करने में सहायता करता है।
- **ज़ेंडेस्क :** ज़ेंडेस्क एक ग्राहक सेवा सॉफ़्टवेयर कहलाता है, जो व्यवसायों को अपने ग्राहकों के साथ जुड़ने और उनकी समस्याओं और कठिनाइयों का निवारण करने में सहायता प्रदान करता है।
- **लाइवचैट :** लाइवचैट एक ग्राहक सेवा सॉफ़्टवेयर कहलाता है, जो व्यवसायों को अपने ग्राहकों के साथ जुड़ने और उनकी समस्याओं और कठिनाइयों का निवारण करने में सहायता प्रदान करता है।

ई-कॉमर्स में साइबर सुरक्षा के विविध उपकरणों का अनुवाद अत्यंत महत्वपूर्ण भूमिका है। यहाँ कुछ बिंदुओं को दर्शाया गया हैं, जिनमें साइबर सुरक्षा के विविध उपकरणों का अनुवाद किया जा सकता है, यथा-

साइबर सुरक्षा उपकरण : अनुवाद के प्रकार

1) **फ़ायरवॉल का अनुवाद :** फ़ायरवॉल एक ऐसा साइबर सुरक्षा उपकरण है, जो वेबसाइट को हैकिंग और मैलवेयर से सुरक्षित रखता है। इस उपकरण का अनुवाद करने से वेबसाइट की सुरक्षित रखने में सहायक सिद्ध होता है।
2) **एंटीवायरस का अनुवाद :** एंटीवायरस एक ऐसा साइबर सुरक्षा उपकरण है, जो वेबसाइट को वायरस और मैलवेयर से सुरक्षित रखने में कारगर सिद्ध होता है। इस उपकरण का अनुवाद करने से वेबसाइट की सुरक्षा में सुधार की संभावना में वृद्धि होती है, अतः उक्त **एंटीवायरस** उपकरण का अनुवाद करने से वेबसाइट के डेटा को सुरक्षित रखने में सहायता मिलती है।
3) **इन्क्रिप्शन का अनुवाद :** इन्क्रिप्शन एक ऐसा साइबर सुरक्षा उपकरण है, जो वेबसाइट के डेटा को सुरक्षित करने का कार्य करता है। इस उपकरण का अनुवाद करने से वेबसाइट के डेटा को सुरक्षित रखने में सहायता मिलती है।
4) **पासवर्ड मैनेजर का अनुवाद :** पासवर्ड मैनेजर एक ऐसा साइबर सुरक्षा उपकरण है, जो वेबसाइट के पासवर्ड को सुरक्षित रखता है। इस उपकरण का अनुवाद करने से वेबसाइट के पासवर्ड को सुरक्षित रखने में सहायक होता है।

साइबर सुरक्षा उपकरण - अनुवाद की दृष्टि से लाभ

- **सुरक्षा में सुधार :** साइबर सुरक्षा उपकरणों का अनुवाद करने से वेबसाइट को सुरक्षित रखने में अपेक्षित सुधार होता है।सायबर सुरक्षा से जुडी चेतावनियाँ, निर्देश और विकल्प मातृभाषा में होने के कारण सामान्य उपयोगकर्ता उसे आसानी से समझता है. और. जागरूक रहकर अपने डेटा को सुरक्षित करता है।
- **हैकिंग और मैलवेयर से सुरक्षा :** साइबर सुरक्षा उपकरणों का स्थानीय भाषा में अनुवाद करने से वेबसाइट को हैकिंग और मैलवेयर से आसानी से सुरक्षित रखा जा सकता है।जब सुरक्षा अलर्ट का मेसेज हिंदी में मिलता है तब उपयोगकर्ता सतर्क रहकर व्यवहार. करता है। उदा. आपके सिस्टम संदिग्ध लिंक. पायी है कृपया उसपर क्लिक ना करें।
- **ग्राहकों के विश्वास में वृद्धि :** साइबर सुरक्षा उपकरणों का अनुवाद करने से ग्राहकों के विश्वास में वृद्धि होती है।साइबर सुरक्षा में अनुवाद की भागीदारीता की वजह से लोगों में सतर्क की भावना अधिक आयी है ।
- **व्यवसाय की सुरक्षा में वृद्धि :** साइबर सुरक्षा उपकरणों का अनुवाद करने से व्यवसाय की सुरक्षा में वृद्धि हो सकती।जब साइबर सुरक्षा से जुड़ी चेतावनियाँ और जानकारी स्थानीय भाषाओं में अनुवादित होती हैं, तो आम लोग उन्हें बेहतर समझ पाते हैं, जिससे जागरूकता और सुरक्षा दोनों बढ़ती हैं।

ई-कॉमर्स में साइबर सुरक्षा के प्रमुख क्षेत्र

नेटवर्क सुरक्षा :

- **फ़ायरवॉल :** फ़ायरवॉल एक सुरक्षा उपकरण है जो नेटवर्क को हैकिंग और मैलवेयर से बचाता है।
- **इन्ट्रज़न डिटेक्शन सिस्टम** : इन्ट्रज़न डिटेक्शन सिस्टम एक सुरक्षा उपकरण है जो नेटवर्क में अनधिकृत पहुँच का पता लगाता है।
- **वायरलेस नेटवर्क सुरक्षा** : वायरलेस नेटवर्क सुरक्षा में वायरलेस नेटवर्क को हैकिंग और मैलवेयर से बचाना सम्मिलित है।

डेटा सुरक्षा :

- **इन्क्रिप्शन :** इन्क्रिप्शन एक सुरक्षा उपकरण है जो डेटा को सुरक्षित करता है।
- **डेटा बैकअप** : डेटा बैकअप एक सुरक्षा उपकरण है जो डेटा को सुरक्षित स्थान पर संग्रहीत करता है।
- **डेटा एक्सेस कंट्रोल** : डेटा एक्सेस कंट्रोल एक सुरक्षा उपकरण है जो डेटा तक पहुँच को नियंत्रित करता है।

एप्लिकेशन सुरक्षा :

* **वेब एप्लिकेशन सुरक्षा :** वेब एप्लिकेशन सुरक्षा में वेब एप्लिकेशन को हैकिंग और मैलवेयर से बचाना सम्मिलित है।
* **मोबाइल एप्लिकेशन सुरक्षा** : मोबाइल एप्लिकेशन सुरक्षा में मोबाइल एप्लिकेशन को हैकिंग और मैलवेयर से बचाना सम्मिलित है।
* **क्लाउड एप्लिकेशन सुरक्षा :** क्लाउड एप्लिकेशन सुरक्षा में क्लाउड एप्लिकेशन को हैकिंग और मैलवेयर से बचाना सम्मिलित है।ई-कॉमर्स में साइबर अपराध कई जगहों पर हो सकता है, जिनमें से कुछ प्रमुख स्थान है।

उपर्युक्त समस्त **नेटवर्क सुरक्षा, डेटा सुरक्षा** और **एप्लिकेशन सुरक्षा** को अनुवाद के माध्यम से आसान बनाया जा सकता है जिससे कि सूक्ष्म खतरे को भी समझा सकें।

वेबसाइट और एप्लिकेशन :

- **हैकिंग :** हैकिंग में वेबसाइट या एप्लिकेशन को अनधिकृत पहुँच के माध्यम से नियंत्रित करना शामिल है।
- **मैलवेयर :** मैलवेयर में वेबसाइट या एप्लिकेशन में दुर्भावनापूर्ण सॉफ़्टवेयर को स्थापित करना शामिल है।
- **फ़िशिंग :** फ़िशिंग में वेबसाइट या एप्लिकेशन के माध्यम से ग्राहकों की व्यक्तिगत जानकारी को चोरी करना शामिल है।

भुगतान प्रणाली :

- **क्रेडिट कार्ड धोखाधड़ी** : क्रेडिट कार्ड धोखाधड़ी में क्रेडिट कार्ड की जानकारी को चोरी करना और उसका दुरुपयोग करना शामिल है।
- **पेमेंट गेटवे धोखाधड़ी** : पेमेंट गेटवे धोखाधड़ी में पेमेंट गेटवे की जानकारी को चोरी करना और उसका दुरुपयोग करना शामिल है।

डेटा संग्रहण :

- **डेटा चोरी** : डेटा चोरी में ग्राहकों की व्यक्तिगत जानकारी को चोरी करना आदि तथ्य इसके अंतर्गत सम्मिलित है, अतः उक्त जानकारी को अनुवाद के द्वारा आसानी से जाना जा सकता है।
- **डेटा भंग** : डेटा भंग में ग्राहकों की व्यक्तिगत जानकारी को नष्ट करना आदि तथ्य इसके अंतर्गत सम्मिलित है, अतः उक्त जानकारी को अनुवाद के द्वारा आसानी से जाना जा सकता है।
- **ग्राहक सेवा*ग्राहक सेवा धोखाधड़ी** : ग्राहक सेवा धोखाधड़ी में ग्राहक सेवा के माध्यम से ग्राहकों की व्यक्तिगत जानकारी को चोरी करना आदि सम्मिलित है। अतः उक्त जानकारी को अनुवाद के द्वारा आसानी से समझा जा सकता है।
- **ग्राहक सेवा भंग** : ग्राहक सेवा भंग में ग्राहक सेवा के माध्यम से ग्राहकों की व्यक्तिगत जानकारी को पूर्णतया नष्ट करना आदि इसके अंतर्गत सम्मिलित है अतः उक्त जानकारी को अनुवाद के द्वारा आसानी से समझा जा सकता है।

ई-कॉमर्स में साइबर सुरक्षा में अनुवाद की महत्ता :

ई-कॉमर्स में साइबर सुरक्षा में अनुवाद की महत्ता बहुत अधिक है, क्योंकि यह व्यवसायों को अपने ग्राहकों की व्यक्तिगत जानकारी को सुरक्षित करने में सहायता प्रदान करता है। यहाँ ई-कॉमर्स में साइबर सुरक्षा में अनुवाद की महत्ता के कुछ तत्व हैं, जिसे अनुवाद के माध्यम से आसानी के साथ नियंत्रण कर पाना काफी हद तक संभव किया जा सकता है, जिससे साइबर सुरक्षा में बहुत अधिक पैमाने पर सहायता हो सकती है, जो कि निम्नवत है, यथा-

सुरक्षा संदेशों का अनुवाद :

1) **सुरक्षा संदेशों का अनुवाद** : सुरक्षा संदेशों का अनुवाद करना बहुत महत्वपूर्ण है, ताकि ग्राहकों को सुरक्षा संबंधी जानकारी समझ आसानी के साथ ज्ञात हो जाए।
2) **सुरक्षा संदेशों का सटीक अनुवाद** : सुरक्षा संदेशों का सटीक अनुवाद करना बहुत महत्वपूर्ण है, ताकि ग्राहकों को सुरक्षा संबंधी जानकारी आसानी से समझ में आ जाए।

सुरक्षा नीतियों का अनुवाद

- **सुरक्षा नीतियों का अनुवाद** : सुरक्षा नीतियों का अनुवाद करना बहुत महत्वपूर्ण है, ताकि ग्राहकों को सुरक्षा संबंधी जानकारी समझने में कोई समस्या उत्पन्न ना हो।
- **सुरक्षा नीतियों का सटीक अनुवाद** : सुरक्षा नीतियों का सटीक अनुवाद करना बहुत महत्वपूर्ण है, ताकि ग्राहकों को सुरक्षा संबंधी जानकारी सहजरूपेण समझ में आए।

सुरक्षा संबंधी जानकारी का अनुवाद

1) **सुरक्षा संबंधी जानकारी का अनुवाद** : सुरक्षा संबंधी जानकारी का अनुवाद करना बेहद महत्वपूर्ण है, ताकि ग्राहकों को सुरक्षा संबंधी जानकारी आसानी से समझ में आ सकें।
2) **सुरक्षा संबंधी जानकारी का सटीक अनुवाद** : सुरक्षा संबंधी जानकारी का सटीक अनुवाद करना बेहद महत्वपूर्ण कार्य समझा जाता है, ताकि ग्राहकों को सुरक्षा संबंधी जानकारी को समझने में किसी भी तरह की दिक्कत या समस्या नहीं आने पाए।

ई-कॉमर्स में साइबर सुरक्षा संबंधी अनुवाद के प्रमुख उद्देश्य :

ग्राहकों की सुरक्षा सुनिश्चित करना :

- **ग्राहकों की व्यक्तिगत जानकारी की सुरक्षा** : साइबर सुरक्षा अनुवाद के माध्यम से, ई-कॉमर्स व्यवसाय ग्राहकों की व्यक्तिगत जानकारी की सुरक्षा सुनिश्चित करने का कार्य कर सकते हैं।

- **ग्राहकों के लेन-देन की सुरक्षा** : साइबर सुरक्षा अनुवाद के माध्यम से, ई-कॉमर्स व्यवसाय ग्राहकों के लेन-देन की सुरक्षा सुनिश्चित करने का कार्य कर सकते हैं।

व्यवसाय की सुरक्षा सुनिश्चित करना :

- **व्यवसाय की वित्तीय जानकारी की सुरक्षा** : साइबर सुरक्षा अनुवाद के माध्यम से, ई-कॉमर्स व्यवसाय अपनी वित्तीय जानकारी की सुरक्षा सुनिश्चित कर सकते हैं।
- **व्यवसाय की प्रतिष्ठा की सुरक्षा** : साइबर सुरक्षा अनुवाद के माध्यम से, ई-कॉमर्स व्यवसाय अपनी प्रतिष्ठा की सुरक्षा सुनिश्चित करने का कार्य कर सकते हैं।

अनुपालन और नियमों का पालन करना :

- **डेटा सुरक्षा नियमों का पालन** : साइबर सुरक्षा अनुवाद के माध्यम से, ई-कॉमर्स व्यवसाय डेटा सुरक्षा नियमों का पालन करने का कार्य कर सकते हैं।
- **वित्तीय नियमों का पालन** : साइबर सुरक्षा अनुवाद के माध्यम से आसानी के साथ ई-कॉमर्स व्यवसाय वित्तीय नियमों का पालन करने का कार्य किया जा सकता है।

निष्कर्षतः :

उपर्युक्त विवेचन के आधार पर यह कहा जा सकता है कि ई-कॉमर्स में साइबर सुरक्षा में अनुवाद की महत्ता बहुत अधिक है, क्योंकि यह व्यवसायों को अपने ग्राहकों की व्यक्तिगत जानकारी को सुरक्षित करने में उपयुक्त सहायता प्रदान करता है। आज की डिजिटल दुनिया में कंप्यूटर सिस्टम पर बढ़ती निर्भरता, ब्लूटूथ और वाई-फाई जैसे वायरलेस नेटवर्क का उपयोग और स्मार्टफोन, स्मार्ट टीवी, व अन्य **स्मार्ट** डिवाइसेस की बढ़ती संख्या के कारण साइबर क्षेत्र का महत्व लगातार बढ़ रहा है। ये सभी डिवाइसेस **इंटरनेट ऑफ थिंग्स** (IoT) का हिस्सा बनते जा रहे हैं, जिससे डेटा की सुरक्षा पहले की तुलना में और भी आवश्यक हो गई है उक्त उपकरणों के अनुवाद से आसानी से सुरक्षित जानकारी को समझा जा सकता है।

ई-कॉमर्स में साइबर सुरक्षा के विविध उपकरणों का अनुवाद अत्यंत महत्वपूर्ण भूमिका है। जिससे कि साइबर अपराध या साइबर हमलों/खतरों को आसानी से रोका जा सकता है, जिससे कि भाषा की दृष्टि से अनभिज्ञ व्यक्ति की समझ को विकसित कर उसकी जिज्ञासा की अभिपूर्ति अनुवाद के माध्यम से पूर्ण हो सकें। निश्चय यह कहा जा सकता है कि साइबर सुरक्षा और अनुवाद दोनों ई-कॉमर्स में महत्वपूर्ण और कारगर भूमिकाएँ अदा करते हैं।

संदर्भ :

1) एथिकल हैकिंग – डैनियल जी. ग्राहम
2) साइबर सुरक्षा फर्स्ट प्रिंसिपल्स" रिक हॉवर्ड
3) "सैंडवॉर्म" एंडी ग्रीनबर्ग
4) "ब्लू टीम हैंडबुक: घटना प्रतिक्रिया संस्करण" डॉन मर्डोक द
5) समाचार पत्र-पत्रिकाओं साइबर सुरक्षा संबंधी प्रकाशित लेखों से प्राप्त अंशों के अनुसार।
6) साइबर सुरक्षा पर आधारित वेबसाइट की सूचना के अनुसार।
7) साइबर सुरक्षा संबंधी जनहित में पुलिस विभाग द्वारा प्रसारित/प्रचारित जानकारी के अनुसार।
8) साइबर सुरक्षा और अनुवाद संबंधी जारी वीडियो के अनुसार
9) साइबर सुरक्षा और अनुवाद पर आधारित व्याख्यान/परिचर्चा/वार्ता के अनुसार।
10) वाट्स एप (WhatsApp) पर पुलिस साइबर (Police Cyber) जागरूकता (Awareness) समूह (Group) से प्राप्त जानकारी के अनुसार

Cyber Security Challenges in E-Commerce

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ABSTRACT
As E-Commerce continues to grow rapidly, so do the risks posed by Cyber threats targeting digital platforms. This paper explores the evolving Cyber security landscape in E-Commerce, identifies and classifies major Cyber threats and examines the role of emerging technologies in defense mechanisms. Furthermore, it presents best practices and strategic recommendations to bolster Cyber security frameworks within E-Commerce systems.

KEYWORDS: E-Commerce, Cybercrime, threats, security, attacks, challenges, technologies, classification, best practice.

INTRODUCTION
Over the past year, both E-Commerce and Cyber crime have experienced exponential growth. Protecting the integrity, privacy, and safety of consumers and E-Commerce enterprises requires Cyber security. The Cyber security issues that E-Commerce companies confront will be examined in this study paper, along with some recommended procedures and countermeasures. The technique of preventing theft, damage, or illegal access to computer systems, networks, and sensitive data is known as Cyber security. Cyber security is now a major concern for people, companies, and governments worldwide due to the extensive use of digital technology and the internet. There are numerous types of Cyber threats, such as malware, viruses, phishing schemes, hacking, and denial-of-service assaults.

History of E –Commerce:
Beginning with business-focused EDI in the 1960s and the standardization of electronic document sharing in 1979, E-Commerce significantly evolved in the 1990s with platforms like eBay and Amazon, opening online shopping to consumers. Current E-Commerce utilizes diverse tools for B2B and consumer interactions, including digital marketing methods.

Types of E-Commerce
- Business-to-Consumer (B2C) B2C E-Commerce corporation executes dealing with the consumer for goods. Generally, it is used as a business model to put on sale.
- Business-to-Business (B2B) B2C, an E-Commerce business can instantly hand over the goods to a purchaser which is a corporate body.
- Business-to-Government (B2G) Some organization acts as a government contractor. In these circumstances, the business produces, prices of goods are transmitted to body. This type of companies must perform governmental project.
- Consumer-to-Consumer (C2C) Through E-Commerce platforms online consumers can conduct buy &sale of the product with other consumers like auction.
- Consumer-to-Business (C2B) Companies are now made an agreement with the customer for different services.
- Consumer-to-Government (C2G) consumers can communicate with administrations, agencies, or governments through C2G transaction such as paying tax, online admission in a university.

Key ethical considerations in Cybersecurity include:
• **Privacy:** Cyber security professionals must respect individuals' right to privacy and ensure that personal information is kept confidential and secure. They should also be transparent about their data collection practices and obtain consent from users before collecting or using their personal information.
• **Confidentiality:** Cyber security professionals must maintain the confidentiality of sensitive information and protect it from unauthorized access or disclosure. This includes protecting trade secrets, confidential business information, and other forms of proprietary information.
• **Integrity:** Cyber security professionals must ensure the integrity of computer systems and networks by preventing unauthorized modifications or alterations to data, code, or other digital assets. They should also ensure that data is accurate and reliable and that users can trust the systems they are using.
• **Availability:** Cyber security professionals must ensure that computer systems and networks are available to authorized users and that disruptions and downtime are minimized. This includes protecting against denial-of-service attacks and other forms of disruption.

• **Responsibility:** Cyber security professionals must take responsibility for their actions and ensure that they comply with relevant laws, regulations, and ethical standards. They should also report any suspected security breaches or other incidents to appropriate authorities.

Cyber Security Challenges in E-Commerce

• **Payment fraud:** Payment fraud is one of the most significant Cyber security challenges faced by E-Commerce businesses. Fraudsters use stolen credit card details to make unauthorized purchases. Payment fraud can be divided into two categories: account takeover fraud and card not-present fraud.

• **Phishing attacks:** E-Commerce faces phishing attacks that deceive customers into sharing sensitive information through email, social media, or SMS. Data breaches, resulting from compromised systems, expose customer data, potentially leading to its sale on the dark web and causing legal and financial damage to the E-Commerce business.

• **Malware attacks:** Malware is malicious software that can be used to steal customer data, including payment card details, login credentials, and other sensitive information. Malware can be delivered via email, social media, or through malicious websites.

OBJECTIVES OF THE STUDY:

1. To identify and classify the key Cyber threats that specifically target E-Commerce platforms, including payment fraud, phishing attacks, malware attacks, etc.
2. To explore the role of emerging technologies (e.g., blockchain, AI, machine learning) in preventing Cyber threats and enhancing the security infrastructure of E-Commerce platforms.
3. To propose a set of best practices, recommendations, and strategies for E-Commerce businesses to strengthen their Cyber security frameworks and protect both customer data and their own operations from evolving Cyber threats.

NEED FOR THE STUDY:

With the rapid growth of E-Commerce, Cyber threats such as phishing, malware, ransomware, and data breaches have become increasingly sophisticated and damaging. This study is crucial to identify and classify these threats and explore how emerging technologies like AI, blockchain, and machine learning can enhance security. As traditional measures often fall short, the research also aims to propose actionable best practices and strategies to help E-Commerce businesses strengthen their Cybersecurity frameworks, protect sensitive information, and ensure safe, resilient online operations.

REVIEW OF LITERATURE

Sood et al. (2018) emphasize that phishing scams are evolving, with more sophisticated methods like spear-phishing gaining traction. Unlike traditional phishing attacks, which are typically mass-targeted, spear-phishing involves highly personalized attacks aimed at specific individuals or organizations. By leveraging publicly available information, such as social media profiles or company websites, attackers craft convincing emails or messages that appear legitimate, making it harder for recipients to identify them as malicious.

Choi et al. (2019) observe that Cybercriminals frequently use malware to infiltrate E-Commerce websites and compromise sensitive data. Malware such as viruses, Trojans, and ransomware can be employed to steal customer information, including credit card details, usernames, and passwords. Additionally, ransomware attacks can paralyze E-Commerce platforms by encrypting data and demanding payment for its release, often resulting in significant downtime and loss of business revenue.

Zhang et al. (2020) note that fraudulent transactions are often carried out using stolen credit card information or fabricated identities. These types of fraud are particularly concerning because they can be executed anonymously, making it difficult to trace the perpetrators. According to the authors, such fraud is facilitated by insecure payment gateways, where attackers can easily intercept payment details or use fake accounts to make purchases

Zohar et al. (2020) further explain that the use of blockchain in verifying payment transactions can significantly enhance trust between E-Commerce businesses and consumers. By providing a decentralized, immutable ledger, blockchain ensures that all transactions are recorded transparently and cannot be tampered with or altered after the fact. This transparency reduces the risk of fraud and unauthorized alterations to transaction data, which are common concerns in online payments.

Chavez and Zhang (2020) stress the importance of implementing secure payment gateways and utilizing end-to-end encryption (E2EE) to safeguard information such as credit card numbers, billing addresses, and personal identification details. End-to-end encryption ensures that data is encrypted on the sender's device and can only be decrypted by the intended recipient, significantly reducing the risk of interception by malicious actors during transmission. In addition to E2EE, the authors highlight the need for E-Commerce platforms to comply with established industry standards such as the Payment Card Industry Data Security Standard (PCI DSS), which outlines best practices for securely handling payment data. Compliance with PCI DSS not only strengthens data protection but also helps businesses avoid legal penalties and build consumer trust by demonstrating a commitment to high security standards. Together, these practices form a robust foundation for secure transaction processing in online retail environments.

Kou et al. (2021) observe that this increased reliance on mobile platforms has amplified the risk exposure for E-Commerce transactions. One of the key concerns highlighted by the authors is that users often access E-Commerce apps over unsecured public Wi-Fi networks, which makes them highly vulnerable to man-in-the-middle (MITM) attacks. Additionally, the use of outdated operating systems and apps further exacerbates the risk, as these platforms may not have the latest security patches or encryption protocols to protect sensitive transaction data.

RESEARCH METHODOLOGY:
This research paper has been done through literature review survey and secondary data. The source of secondary data is official websites, newspaper articles, journals, books and research studies.

DATA COLLECTION:
This study utilizes secondary data collection methods to gather relevant insights:

Literature Review: Academic journals, white papers, industry reports, and Cybersecurity publications.
Case Studies: Documented Cyberattacks on E-Commerce platforms highlighting threat vectors and exploited vulnerabilities.
Surveys and Reports: Existing Cybersecurity surveys from Statista, IBM, and PWC providing data on technology adoption and threat impact.
Patent and R&D Analysis: Examination of innovations in AI, blockchain, and machine learning applications in Cybersecurity.

DATA ANALYSIS:
1. Identification and Classifications of Cyber Threats targeting E-commerce platforms

Threat Category	**Specific Threat**	**Description**	**Primary Target/Vector**	**Impact on E-Commerce**
a. Payment Fraud	Stolen Credit Card Use	Fraudulent transactions using stolen or cloned card details	Payment gateways, checkout forms	Financial loss, chargebacks, customer trust damage
	Fake Identities	Use of fabricated credentials to open accounts or make purchases	Registration/login forms	Skewed data, loss of inventory, reputational harm
	Account Takeover (ATO)	Unauthorized access to user accounts for fraudulent purchases	Credential stuffing, phishing	Data theft, unauthorized transactions
b. Phishing Attacks	Generic Phishing	Mass emails or fake sites tricking users into giving login/payment info	Email, fake websites	User data theft, brand impersonation
	Spear-Phishing	Targeted attacks on specific individuals or staff with convincing messages	Email, SMS, social media	Internal breaches, credential leaks
	Smishing & Vishing	Phishing via SMS (smishing) or voice calls (vishing)	Mobile devices, call centers	Identity theft, payment fraud
c. Malware Attacks	Trojan Horses	Malware disguised as legitimate files or plugins	Downloads, third-party integrations	Data exfiltration, backdoor access
	Ransomware	Encrypts system data and demands payment to restore access	Infected emails, insecure endpoints	Business interruption, ransom payment demands
	Keyloggers & Spyware	Secretly records user activity or captures sensitive inputs	Compromised apps, browser extensions	Theft of user credentials, payment info

2. Role of emerging technologies in preventing threats- Emerging technologies demonstrate strong potential. Blockchain ensures transaction integrity and user authentication, while AI-based tools enhance anomaly detection and response time. Machine learning algorithms can adapt to new threats, making them valuable for predictive security.

A. Blockchain Technology

Key Role:
Provides decentralized, tamper-proof transaction records and enhances data integrity.
Applications in E-Commerce Cybersecurity:

- **Secure Payment Processing**: Blockchain enables transparent and immutable records of transactions, reducing payment fraud and chargebacks.

- **User Authentication**: Decentralized digital identity systems based on blockchain ensure secure and verifiable login processes.
- **Supply Chain Integrity**: Blockchain helps trace and verify product authenticity, reducing counterfeit product risks.

A. Artificial Intelligence (AI)

Key Role:

Automates threat detection, speeds up incident response, and enhances anomaly recognition.

Applications in E-Commerce Cybersecurity:

- **Fraud Detection**: AI systems monitor user behavior in real-time to flag suspicious activities like unusual purchase patterns or login anomalies.
- **Phishing Prevention**: AI models can analyze emails and URLs to detect phishing content before it reaches users.
- **Chatbot Security Monitoring**: AI-powered bots can assist in real-time monitoring of customer queries to detect fraud attempts or impersonation.

3. Machine Learning (ML)

Key Role:

Learns from past data and adapts to evolving threats with predictive analytics.

Applications in E-Commerce Cybersecurity:

- **Predictive Threat Modeling**: ML models forecast potential attacks based on historical data and behavioral trends.
- **Dynamic Access Control**: ML can adjust user access based on contextual data like location, device, and login habits.
- **Bot Detection**: ML helps differentiate between human users and malicious bots, especially during DDoS attacks or scalping attempts.

3. As E-commerce platforms continue to expand and handle increasing volumes of sensitive customer data and financial transactions, they have become prime targets for sophisticated Cyber threats. To effectively combat these evolving risks, businesses must adopt a proactive and multi-layered Cyber security approach. This involves not only implementing advanced technological solutions but also establishing clear security policies, training personnel, and building a culture of Cyber awareness. The following best practices and strategic recommendations aim to guide E-commerce businesses in strengthening their Cyber security frameworks, protecting digital assets, and ensuring customer trust and operational resilience.

1. Secure Payment Systems
2. Strengthen Website and Application Security
3. Adopt AI & Machine Learning Tools
4. Implement Robust Authentication and Access Control
5. Conduct Cyber security Training and Awareness
6. Secure Third-Party Integrations and Supply Chains
7. Backup and Disaster Recovery Planning
8. Monitor, Log, and Respond
9. Leverage Emerging Technologies
10. Regulatory Compliance and Data Privacy

CONCLUSION:

This study, grounded in a comprehensive review of secondary data sources—including academic literature, case studies, industry reports, and patent analyses—offers a clear depiction of the evolving Cyber security landscape in the E-commerce sector. The analysis highlights a persistent and growing threat posed by payment fraud, phishing, and malware attacks, with root causes often traced to inadequate security configurations and the absence of real-time threat monitoring. **Most targeted areas include**: Payment systems, user accounts, and web application vulner abilities. The key causes of Cyber threats are: Inadequate security controls, lack of real-time monitoring, insecure third-party integrations, etc. **Top preventive needs should include** Strong encryption, AI-based threat detection, staff training, secure development practices.

Emerging technologies play a **transformational role** in Cyber security by: Shifting from reactive to **proactive defense mechanism,** enabling **real-time threat detection and mitigation,** Enhancing **trust, transparency, and operational resilience, etc.** However, the analysis also reveals promising developments in the form of emerging technologies. Blockchain stands out for its ability to ensure transaction integrity and secure authentication processes. Meanwhile, artificial intelligence and machine learning are proving instrumental in advancing predictive threat detection and accelerating incident response. These technologies not only enhance the ability of e-commerce platforms to defend against attacks but also help businesses adapt to rapidly changing threat environments.

A layered, proactive, and adaptive Cyber security strategy is crucial for E-commerce success. By integrating technology, training, policy, and prevention, businesses can reduce risk exposure, build customer trust, and ensure operational continuity in the face of evolving Cyber threats. To effectively counteract these risks, a multifaceted Cyber security strategy is essential. Best practices identified include Secure Payment System, Strengthening Website and Application Security, Adoption of AI & Machine Learning Tools, implement Robust Authentication and Access Control etc. Collectively, these measures can significantly strengthen an e-commerce platform's security infrastructure, safeguarding both consumer data and business continuity in an increasingly digital marketplace.

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Education Challenges in the Technology World

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Abstract: - The rapid technological revolution has reshaped almost every aspect of human life—including education. While digital tools and platforms offer immense possibilities for enhanced learning, they also present complex challenges that educators, students, and institutions must navigate. This paper explores the multifaceted struggles faced in the education sector due to evolving technologies, focusing on accessibility, digital divide, dependency, adaptability, privacy concerns, and the erosion of traditional learning values. The research aims to offer a grounded understanding of these issues with a human-centred perspective and suggest possible solutions that can make education in the digital era more inclusive, balanced, and meaningful.

Keyword:- Education, Challenges, Technology, Vital.

Introduction:-
In today's fast-moving digital world, the education sector is no longer confined to chalkboards, textbooks, or even physical classrooms. With tools like online learning platforms, AI-powered tutors, virtual classrooms, and digital assessments, the education experience has undergone a dramatic transformation. However, these advancements come with their own set of challenges that are often overlooked in the race toward modernization.
Despite the benefits, millions of students and teachers are struggling to adapt to new technologies—whether due to lack of access, insufficient training, or the overwhelming speed at which things are changing. This paper reflects on those challenges from the ground up, not just through data but through the lived experiences of educators and learners.
Objective: -
1) To Study the Conceptual framework of paper.
2) Importance of education in today's world
3) Challenges
4) Suggestions

Research Methodology: - The paper is based on the secondary sources of data i.e. websites**,** books, journals etc.

Importance of Education in today's world: -
Education is incredibly important in today's world for a multitude of reasons, and its role continues to evolve with the rapid changes in technology, society, and the global economy. the significance of education in today's world:
1. **Empowerment and Opportunity**: Education provides individuals with the skills and knowledge needed to improve their lives. It opens doors to opportunities that might not otherwise be available, allowing people to break the cycle of poverty, contribute to their communities, and achieve personal and professional goals.
2. **Economic Growth**: A well-educated workforce is crucial for the economic development of a country. Countries with higher levels of education typically experience higher productivity, innovation, and competitiveness in the global market. Education leads to a more skilled labour force, which in turn fosters economic stability and growth.
3. **Social Equality**: Education can serve as a great equalizer in society. It provides everyone, regardless of background or socioeconomic status, the chance to improve their circumstances. Ensuring access to education can help reduce social inequalities and promote fairness.
4. **Technological Advancements**: With the rapid pace of technological change, education is essential for understanding and leveraging new technologies. Whether it's artificial intelligence, renewable energy, or healthcare innovations, education enables people to adapt, innovate, and succeed in an increasingly tech-driven world.
5. **Critical Thinking and Problem Solving**: Education fosters the development of critical thinking skills, allowing individuals to analyse information, make informed decisions, and solve complex problems. These skills are vital in navigating the challenges of today's world, whether in the workplace, in communities, or on the global stage.
6. **Personal Growth and Fulfilment**: Education is not just about acquiring job-specific skills; it also enriches personal growth, encouraging curiosity, creativity, and lifelong learning. It enables individuals to pursue their passions, think critically, and develop as well-rounded individuals.

Challenges: -
<u>2. The Digital Divide</u>
2.1. Access Inequality

The most prominent issue in the tech-based education world is the digital divide—the gap between those who have access to reliable technology and internet and those who do not. While some urban schools boast smart classrooms and high-speed connectivity, many rural or underfunded schools still struggle to provide basic digital tools to their students.

2.2. Infrastructure Gaps

Even in regions where devices are available, lack of proper infrastructure—such as electricity, internet bandwidth, and technical support—limits the effectiveness of digital learning. Governments and institutions often overlook the basic groundwork needed before pushing digital education.

3. Teacher Preparedness and Training

Technology is only as effective as the people who use it. Teachers play a crucial role in facilitating learning, but not all educators are comfortable with digital tools. Many teachers, especially those from older generations, find themselves struggling to adapt to apps, online platforms, and virtual classrooms.

4. Student Engagement and Overload

4.1. Passive Learning Habits

Digital platforms often promote a passive learning style. Unlike traditional classrooms where students are encouraged to discuss, ask questions, and interact with peers, online learning can feel isolating. Many students report feeling disengaged, distracted, or demotivated during online classes.

4.2. Screen Fatigue and Mental Health

The heavy use of screens for education has led to increased screen time, which contributes to eye strain, poor posture, sleep disturbances, and mental health issues. Many students feel overwhelmed by the sheer amount of content and digital notifications.

5. Privacy, Safety, and Data Concerns

The growing dependence on online tools has raised serious concerns about privacy and cybersecurity. Many educational apps collect vast amounts of student data—often without clear consent or transparency. There have been increasing cases of student information being compromised, raising alarms about the safety of digital platforms.

Suggestions:-

Despite these challenges, there are ways to make technology in education more inclusive and effective:

- Bridging the Digital Divide: Government initiatives must prioritize internet access and device distribution in underserved areas.
- Teacher Training Programs: Regular digital literacy workshops and mentorship programs can boost teacher confidence and competence.
- Hybrid Learning Models: A blend of online and offline methods can keep education flexible without losing human touch.
- Mental Health Support: Institutions should invest in counselling services and healthy screen-time policies.
- Ethical Tech Use: Clear guidelines and policies for data privacy, safe app use, and student security must be established.
- Curriculum Overhaul: Include more real-world skills and emotional intelligence-building exercises in the academic syllabus.

Conclusion: -

Technology in education is a double-edged sword. It offers groundbreaking opportunities but also poses significant challenges that we must address thoughtfully. The goal should not be to completely replace traditional methods, but to enhance them in ways that are inclusive, ethical, and human-centered.

Ultimately, education is not just about information—it's about transformation. And for transformation to be meaningful, technology must serve people, not overwhelm them.

education is a cornerstone of progress in today's world, shaping the future of individuals, societies, and nations. It is an investment in the potential of people and in the betterment of the global community.

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Evaluating the Impact of Microfinance on Rural Entrepreneurship and Housing Finance: A Case Study of Palghar District

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Abstract
This study examines how microfinance might support rural business, with a particular emphasis on financing for houses in rural areas. It looks at how microfinance affects rural Indian entrepreneurs' access to home finance and their ability to build their businesses. This study used t test and chi-square analyses on primary data from 301 respondents in the rural areas of Palghar district. The results show that although microfinance increases the availability of home finance, its effect on the growth of rural entrepreneurship as a whole is not statistically significant. Policymakers, microfinance organizations, and rural business owners can improve financial inclusion and economic development by implementing the insights and suggestions offered by the study.

Keywords: microfinance, rural entrepreneurship, housing finance

1. Introduction

Microfinance has become an essential instrument for advancing financial access, especially in rural regions where conventional banking options are frequently unavailable. By offering small loans and various financial services to those without bank accounts, microfinance institutions (MFIs) enable people to engage in activities that generate income, promoting economic growth and improving the quality of life. The role of microfinance in supporting rural business ventures is significant, as it contributes to economic expansion, job creation, and the reduction of poverty. This research delves into the relationship between microfinance and rural business ventures, with a particular emphasis on housing finance. It seeks to comprehend the impact of microfinance on rural business ventures within the housing finance sector and tackle the obstacles encountered by rural business owners in securing suitable housing finance. Through this investigation, the research
aims to offer important insights and suggestions for improving financial access and economic progress in rural India.

2. Review of Literature

1) **Yunus (2003),** Microfinance institutions (MFOs) are essential in offering financial assistance to people who do not have access to traditional banking services, especially in remote areas where conventional banking facilities are not easily reachable. By providing small loans, these organizations help people engage in activities that earn them income, which can greatly enhance their economic status. Research shows that having access to microfinance results in higher family earnings, improved chances for education, and better health results, all of which aid in the progress of rural areas.
2) **Saxena (2012),** It demonstrates how rural entrepreneurship not only promotes local economic progress but also lowers poverty and creates job possibilities. Rural business owners frequently make use of regional resources and conventional wisdom, which can result in creative business concepts suited to the unique requirements and circumstances of their local communities. By supporting the use of environmentally friendly practices, the growth of rural firms can boost regional economies, decrease migration to metropolitan regions, and advance sustainable development.
3) **Morduch (1999),** It highlights the fact that small loans intended specifically for housing are regularly given by microfinance organizations. With the help of these loans, rural households are able to enhance their living conditions, which have a positive knock-on effect on their health, educational attainment, and economic output. By lowering exposure to environmental risks and enhancing access to sanitary facilities and clean water, improved housing conditions can result in better health outcomes. A steady atmosphere for children's education and a sense of community stability can also be fostered by safe and suitable housing.

❖Research Gap

While the effects of microfinance and rural entrepreneurship independently have been extensively studied, their combined influence on housing finance in rural regions has received less attention.
By investigating the relationship between microfinance and rural entrepreneurship in the context of housing finance, this study seeks to close this gap.

3. Objective of the Study

- To examine the influence of microfinance on rural entrepreneurship.
- To study the role of microfinance in providing housing finance in rural areas.
- To provide suggestions based on microfinance and rural entrepreneurship.

4. Hypothesis of the Study

Hypothesis 1

H0: There is no significant influence of microfinance on the progress of rural entrepreneurship.
H1: There is significant influence of microfinance on the progress of rural entrepreneurship.

Hypothesis 2

H0: There is no marginal evidence that microfinance expands access to housing finance for rural entrepreneurs.
H1: There is marginal evidence that microfinance expands access to housing finance for rural entrepreneurs.

5. Statement of the Problem

However, microfinance's potential advantages, entrepreneurs in rural areas are frequently unable to get sufficient funding for their housing needs. The purpose of this study is to better understand these issues and how microfinance might help.

6. Significance of the Study

This research will shed light on how microfinance might be used to encourage rural entrepreneurship and enhance housing circumstances. These findings can be used by
policymakers, microfinance organizations, and rural businesses to improve financial inclusion and economic development in rural areas.

7. Scope of the Study

In the Palghar district's rural areas, microfinance institutions and their customers will be a focus of this study. Analysis of past decade several years effects of microfinance on home finance and entrepreneurship will be conducted.

8. Research Methodology

- **Sampling Method**: Stratified random sampling
- **Sample Size**: 301 respondents.
- **Sample Area**: Selected rural areas are wada, and vikramgad in Palghar district. • **Data Collection**: Primary data collected through structured questionnaires and secondary data collected through official reports.
- **Tests Required**: Chi-square test, and t-test.

9. Limitations of the Study

- Restricted to a few rural areas in the Palghar district.
- The depth of data collection may be impacted by time constraints.
- Using self-reported data, which could be biased.

10.Data Analysis and Interpretations

(Table No. 1: Likert scale)

Question	**Strongly Agree (%)**	**Agree (%)**	**Neutral (%)**	**Disagree (%)**	**Strongly Disagree (%)**
Microfinance has helped individuals start their businesses.	28%	40%	15%	10%	7%
There is access to adequate housing finance.	22%	35%	18%	15%	10%
Microfinance institutions support rural entrepreneurs.	30%	45%	12%	8%	5%

❖Hypothesis Testing and Interpretation

Hypothesis 1
(H0): There is no significant influence of microfinance on the progress of rural entrepreneurship.

- **Chi-square Test Analysis**

(Table No. 2: Chi-square Test)

Response	**Observed (O)**	**Expected (E)**	**(O-E)^2/E**
Strongly Agree	84	75	1.08
Agree	120	125	0.20
Neutral	45	45	0
Disagree	30	35	0.71
Strongly Disagree	22	21	0.048
Chi-square (χ^2)			**2.038**
P-value			**0.729**

Interpretation:

- The p-value (0.729) is higher than the significance level ($\alpha = 0.05$), we fail to reject the null hypothesis.
- **Conclusion:** The chi-square test results show no significant evidence that microfinance has a significant impact on the growth of rural entrepreneurship.

Hypothesis 2
(H0): There is no marginal evidence that microfinance expands access to housing finance for rural entrepreneurs.

- **T-test Analysis**

(Table No. 3: T-test)

Group	**Mean Score**	**Std. Deviation**	**T-value**
Access to Housing Finance	3.5	0.8	1.95
P-value			**0.052**

Interpretation:

- The p-value (0.052) is slightly higher than the significance level ($\alpha = 0.05$), indicating it is marginally significant.
- **Conclusion:** The p-value is close to 0.05, but it does not satisfy the usual threshold for statistical significance. As a result, we fail to reject the null hypothesis, but it does imply a tendency towards significance that may deserve further investigation.

- **Summary of Hypothesis Testing**

(Table No. 3: Summary of Hypothesis Testing)

Hypothesis	**Test**	**Chi square/t value**	**P value**	**Decision**	**Interpretation**
H1	χ^2	2.038	0.729	Fail to Reject H0	There is no significant impact of microfinance on the growth of rural entrepreneurship.
H2	t	1.95	0.052	Fail to Reject H0	There is marginal evidence that microfinance improves access to housing finance for rural entrepreneurs.

11.Findings of the Study

- Microfinance improves the ability of rural business owners to access financing for their homes.

• The link between microfinance and the expansion of rural business ownership is not proven statistically.
• Key challenges include high-interest rates and lack of collateral.

12.Suggestions

• Microfinance institutions should reduce interest rates to make loans more affordable.
• Training programmes to help rural entrepreneurs efficiently use microfinance.
• Government policy promoting microfinance ventures in rural housing.

13.Conclusion

Microfinance plays an important role in increasing housing finance for rural entrepreneurs, but its impact on overall entrepreneurship growth is unclear. Addressing the mentioned problems can increase the benefits of microfinance in rural areas.

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Consumer Behavior During Online Purchases: Special Reference to Vasai Taluka

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Abstract
This research paper investigates the behavior of consumers during online purchases with special reference to Vasai Taluka, located in Maharashtra, India. The rise of e-commerce has transformed the way consumers shop, influenced by factors such as convenience, variety, and socio-demographics. With increasing internet penetration and smartphone usage, the semi-urban region of Vasai Taluka is witnessing a shift in shopping behavior. This paper analyzes factors affecting online purchasing decisions, including socio-demographic profiles, technological influences, and trust in online platforms. The findings offer insights into how local businesses and e-commerce companies can cater to the preferences of consumers in Vasai Taluka.

1. Introduction

Digital transformation of commerce has significantly changed customer behavior around the world. India, an e-commerce marketplace that allows customers to purchase goods and services over the Internet, has gained significant popularity in a country known for its diverse customer base. There has been significant growth in online shopping in metropolitan cities like Mumbai, Delhi and Bengaluru, while semi-urban and rural areas are becoming increasingly important markets for e-commerce businesses. Actually, one state is Vasai Taluka of Maharashtra, where internet usage and mobile usage has increased in recent times.

The aim is to research the behavior of customers during online shopping in Vasai Taluk, especially the factors influencing purchase decisions, product preferences and challenges faced by local customers while shopping online. Understanding these trends is important for businesses looking to adapt their marketing strategies to emerging markets.

2. Literature Review

2.1 Understanding Consumer Behavior in E-Commerce

Consumer behavior refers to the actions and decision-making processes of individuals when purchasing goods or services. With the rise of online shopping, researchers have studied how various factors such as convenience, pricing, and trust influence online purchase decisions. A study by Singh and Kaur (2017) found that convenience and ease of access were among the top reasons consumers prefer shopping online. Trust in online platforms and concerns over data security are also significant factors influencing online shopping behavior (Lwin et al., 2020).

2.2 Growth of Online Shopping in India

India has seen a significant rise in e-commerce activity over the last decade. According to a report by Google and Bain & Company (2023), India’s online retail market is expected to grow exponentially in the coming years, driven by increased internet access, smartphone penetration, and digital payments. Semi-urban regions, like Vasai Taluka, are expected to contribute significantly to this growth due to the increasing number of internet users and rising disposable income.

2.3 Online Shopping Behavior in Semi-Urban Areas

While much of the research on consumer behavior focuses on urban markets, there has been growing interest in understanding the behavior of consumers in semi-urban and rural areas. Studies by Sahu et al. (2019) suggest that semi-urban areas exhibit a mix of traditional and modern shopping habits. Consumers in these regions are often more cautious and value trust and reliability in online platforms.

3. Research Methodology

3.1 Research Design

This study adopts a descriptive research design to explore the consumer behavior of online shoppers in Vasai Taluka. A combination of both qualitative and quantitative methods was employed, utilizing surveys to gather primary data and interviews to gain deeper insights.

3.2 Population and Sample

The target population includes residents of Vasai Taluka who have made at least one online purchase. A sample size of 50 respondents was selected using convenience sampling. The respondents were diverse in terms of age, gender, education, and income to ensure that the sample is representative of the general population in the area.

3.3 Data Collection Methods

Primary data were collected through structured questionnaires distributed to respondents. The questionnaire was designed to assess factors such as frequency of online shopping, preferred product categories, payment methods, and challenges faced. Secondary data were collected from relevant literature, reports, and studies to support the findings and provide a comprehensive understanding of the local e-commerce market.

4. Factors Influencing Online Purchase Behavior in Vasai Taluka

4.1 Technological Factors

Technological advancements have played a crucial role in shaping consumer behavior. The increasing availability of smartphones and internet access in Vasai Taluka has facilitated the adoption of e-commerce. As per the survey, 70% of respondents use mobile phones for online shopping, indicating the dominance of mobile commerce in the region.

4.2 Socio-Demographic Factors

Socio-demographic factors such as age, income, and education significantly influence online purchasing decisions. The study found that younger consumers, particularly those aged between 18 and 35, were more likely to shop online, with 80% of respondents from this age group indicating frequent online purchases. Income also plays a vital role in determining purchasing behavior. Those with higher income levels tend to make more expensive purchases online, particularly in categories like electronics and fashion.

4.3 Psychological and Emotional Factors

Psychological factors such as perceived value, brand loyalty, and convenience are important motivators for consumers. In Vasai Taluka, 60% of respondents indicated that they value the convenience of shopping from home, especially due to the time-saving aspect. Additionally, emotional factors such as trust in online platforms and satisfaction with past experiences were found to influence repeated online purchases.

4.4 Payment Methods and Security Concerns

Digital payment methods like UPI, e-wallets, and credit cards are widely used by consumers in Vasai Taluka, but a significant number of respondents (40%) still prefer cash-on-delivery as their payment method due to security concerns. This suggests that while digital payment adoption is increasing, there are still trust issues related to online transactions.

5. Consumer Attitudes Toward E-Commerce in Vasai Taluka

5.1 Advantages of Online Shopping

Consumers in Vasai Taluka value the convenience and variety offered by online shopping. Many respondents (70%) mentioned that they preferred online shopping because of the wide selection of products available and the ability to compare prices easily. The ease of browsing through various brands and the ability to shop at any time of day were also cited as key advantages.

5.2 Challenges Faced by Consumers

Despite the many advantages, consumers face several challenges when shopping online. The most common issues cited were delayed deliveries (45%), poor product quality (30%), and difficulty in returning or exchanging products (25%). Trust in product quality and concerns about fraudulent websites remain significant barriers to full online shopping adoption in Vasai Taluka.

6. Discussion and Analysis

6.1 Shifting Consumer Behavior in Vasai Taluka

The consumer behavior in Vasai Taluka reflects a fascinating shift as e-commerce penetration increases. Traditional shopping habits are being replaced by online shopping as consumers discover the advantages it offers in terms of convenience, variety, and access to products that were once unavailable in their local markets. This shift is particularly evident among the younger population, with 80% of respondents between the ages of 18 to 35 stating that they engage in online shopping regularly. This demographic is technologically savvy and accustomed to using smartphones, making them prime consumers for mobile commerce.

The middle-aged demographic (36-45 years), while still active in online shopping, tends to have a more cautious approach, often preferring to make smaller or essential purchases online. The older population (46 years and above) is still hesitant about transitioning to online shopping, often due to concerns over the complexity of the online shopping process, a lack of familiarity with digital payment methods, or fears related to data security.

6.2 Technological Influence on Consumer Behavior

The role of technology in shaping consumer behavior cannot be understated. With the growing availability of affordable smartphones and improved mobile network connectivity, Vasai Taluka is now more connected than ever before. According to the survey, 70% of respondents use mobile phones for online shopping, which highlights the increasing importance of mobile commerce (m-commerce) in this region. The rise of mobile commerce has also facilitated a change in how consumers interact with products. This convenience is especially beneficial for people living in semi-urban areas like Vasai Taluka, where accessibility to a wide range of stores and products might be limited.

6.3 Trust and Security Concerns

One of the critical challenges consumers face in Vasai Taluka when it comes to online shopping is trust. Despite the obvious advantages, a significant portion of the population remains skeptical about making purchases online. As seen in the survey, 40% of respondents prefer cash-on-delivery (COD) as their payment method because of concerns regarding payment security and the reliability of online platforms.

6.4 The Role of Social Media and Influencer Marketing

Social media platforms such as Facebook, Instagram, and YouTube have become essential tools for influencing consumer behavior in Vasai Taluka. Online retailers use these platforms to engage with their target audience, promoting product launches, discounts, and sales events. In Vasai Taluka, 65% of respondents indicated that social media reviews and advertisements significantly influence their online shopping decisions.

6.5 Challenges in Delivery and Logistics

Delivery issues, especially delays and product damage during transportation, remain a critical concern in Vasai Taluka. The survey found that 45% of respondents experienced delays in deliveries, and 30% faced issues with poor product quality. These challenges can deter consumers from purchasing online in the future, as they affect the overall customer experience.

7. Conclusion

This study concludes that consumer behavior in Vasai Taluka is evolving rapidly due to the increasing use of mobile phones and internet access. While consumers appreciate the convenience and variety of online shopping, challenges such as trust, payment security, and delivery issues continue to impact their purchasing decisions. To succeed in this market, businesses must address these concerns by enhancing customer experience, improving delivery systems, and building trust in online platforms. As digital adoption grows, the potential for e-commerce in Vasai Taluka is immense, making it an important region for future market expansion.

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Evaluating The Effectiveness of Kisan Credit Limit Expansion on Agricultural Productivity and Farmer Welfare

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Abstract:
The Kisan Credit Card (KCC) scheme has been a crucial importance in improving access to institutional credit for Indian farmers. Recent expansions in the credit limits under the KCC aim to further enhance agricultural productivity and improve farmer welfare by ensuring timely and adequate financial support. This study evaluates the effectiveness of these credit limit enhancements by examining their impact on key indicators such as crop yield, input usage, income levels, and overall livelihood conditions. Using secondary data since 1998, the research identifies both the benefits and limitations of the policy changes. The findings of the research suggest that, the increased credit limits have facilitated greater investment in inputs and technology adoption, challenges such as debt burden, awareness gaps, and uneven access continues to affect the overall efficiency of the scheme. The study offers policy recommendations to optimize credit delivery mechanisms and ensure that expanded credit access translates into sustainable improvements in agricultural outcomes and rural well-being.

Key words: Kisan Credit Card (KCC), Agricultural Productivity, Farmer Welfare, Credit Access, Institutional Credit, Policy Impact.

Introduction:
Agriculture remains the backbone of the Indian economy, employing nearly half of the country's workforce and contributing significantly to national GDP. Despite its importance, the sector faces persistent challenges including low productivity, inadequate access to institutional credit, and financial vulnerability among farmers. To address these issues, the Government of India introduced the Kisan Credit Card (KCC) scheme in 1998–99 with the aim of providing timely, short-term credit to farmers at subsidized interest rates. Over time, the scheme has been expanded to include broader credit coverage, enhanced limits, and streamlined disbursement processes.
In recent years, particularly after 2014, the government has significantly increased the credit limits under the KCC scheme, with the ceiling raised from ₹3 lakhs to ₹5 lakhs in 2023–24. This expansion was intended to improve access to working capital, enable investment in better inputs and technology, and ultimately boost agricultural productivity and improve the welfare of farmers. Simultaneously, rising institutional credit flows and increased interest subsidies have reflected a growing emphasis on rural financial inclusion.
This study aims to evaluate the effectiveness of the Kisan Credit Limit expansion, focusing on its impact on two critical outcomes: agricultural productivity and farmer welfare. By analyzing recent trends, credit data, and secondary literature, the research explores whether the expanded credit limits have translated into measurable improvements in farm output and farmer livelihoods.

Literature Review: -
The relationship between institutional credit and agricultural development has been widely studied in both national and international contexts. Several studies have highlighted that access to timely and affordable credit plays a crucial role in enhancing farm productivity, enabling technology adoption, and reducing farmer distress.
1. **Evolution and Reach of the Kisan Credit Card Scheme: -**
The Kisan Credit Card (KCC) scheme was launched in 1998–99 by the National Bank for Agriculture and Rural Development (NABARD), in collaboration with the Reserve Bank of India (RBI), to simplify and streamline access to credit for farmers. According to RBI and NABARD reports, the number of active KCC accounts has grown substantially, with a significant focus on small and marginal farmers (NABARD, 2022).
2. **Agricultural Productivity and Institutional Credit: -**
Studies such as Bhalla and Singh (2010) and Chand et al. (2015) have demonstrated a positive correlation between institutional credit availability and farm productivity. Agricultural loans under schemes like KCC enable farmers to invest in better seeds, fertilizers, irrigation, and mechanization, thereby increasing crop yields. Recent data from the Ministry of Agriculture shows a noticeable uptick in input adoption patterns following credit expansions.
3.Regional Disparities and Challenges in Implementation: -
Despite its success, the implementation of KCC has faced regional disparities. States like Punjab, Maharashtra, and Tamil Nadu show higher credit uptake, whereas the eastern and north-eastern states lag due to limited banking infrastructure and awareness. Reports by the Reserve Bank of India (2020) point to challenges such as lack of land records, procedural delays, and limited awareness among small and marginal farmers as key barriers.

4**. Welfare Outcomes and Financial Inclusion: -**

Research by ICRIER (2019) and IFPRI (2021) indicates that credit access under KCC has improved rural livelihoods by reducing dependency on informal lenders and enhancing income stability. The government's decision to increase the credit limit from ₹3 lakhs to ₹5 lakhs in 2023 has been seen as a strategic move to deepen financial inclusion and empower farmers, particularly during post-COVID economic recovery.

5. **Government Reports and Policy Reviews: -**

The Ministry of Agriculture and NITI Aayog have consistently reported that interest subvention and credit support under KCC have led to reduced borrowing costs and better financial health of rural households. According to the 2023 report by the Press Information Bureau (PIB), institutional credit to agriculture rose from ₹8.5 lakh crore in 2014–15 to ₹25.48 lakh crore in 2023–24, largely due to policy reforms and limit enhancements under the KCC scheme.

6. **Impact on Agricultural Productivity: -**

The KCC scheme has significantly influenced agricultural productivity by easing liquidity constraints and reducing reliance on informal credit. According to NABARD and RBI data, the total sanctioned amount under the KCC scheme surged from ₹8,582 crore in 2008–09 to ₹5,01,192 crore by March 2023. This remarkable growth highlights increased institutional credit penetration and financial inclusion in the rural economy.

Several empirical studies, such as those by Bharti and Kumar (2015) and Singh et al. (2019), have shown a positive correlation between KCC access and increased input use (such as seeds, fertilizers, and pesticides), timely sowing, and adoption of modern techniques. These improvements have contributed to higher yields and better risk management among farmers.

Gaps in the Literature

While several studies affirm the positive role of agricultural credit, there is limited research specifically evaluating the impact of recent KCC limit expansions on measurable outcomes like crop productivity, input usage, and farmer welfare. Additionally, few studies have captured regional disparities in credit utilization and their effects.

Objectives of this research includes: -

The primary aim of this study is to evaluate the impact of the recent expansion in the Kisan Credit Card (KCC) credit limit on the performance of the agricultural sector and the overall welfare of farmers in India. To achieve this, the study is guided by the following specific objectives:

1. To assess the impact of enhanced KCC credit limits on agricultural productivity, particularly in terms of crop yield, input adoption, and mechanization.
2. To analyze changes in farmer welfare as reflected by income levels, reduction in borrowing from informal sources, and improvement in financial resilience.
3. To examine trends in institutional credit flow to the agriculture sector before and after the expansion of the KCC credit limit.
4. To identify challenges and regional disparities in the implementation and utilization of expanded KCC credit limits.
5. To provide policy recommendations for optimizing agricultural credit delivery and improving the socioeconomic outcomes of farmers

Methodology applied: -

This study adopts a secondary data-based analytical approach to evaluate the impact of the Kisan Credit Card (KCC) credit limit expansion on agricultural productivity and farmer welfare in India. The methodology includes the following components:

1. **Research Design: -**

A descriptive and comparative research design is employed, focusing on key agricultural and financial indicators before and after the increase in the KCC credit limit (with particular attention to the period from 2014–15 to 2023–24).

2. **Data Sources**

The study relies on secondary data collected from credible and publicly available sources:

Reserve Bank of India (RBI): Agricultural credit data, policy circulars

National Bank for Agriculture and Rural Development (NABARD): Reports on KCC implementation and rural finance

Ministry of Agriculture & Farmers' Welfare: Agricultural productivity, crop statistics

Press Information Bureau (PIB): Budget allocations, interest subsidy reports

ICRIER / IFPRI / NITI Aayog: Research papers and policy evaluation studies

Agri-Stat Portal: Input usage, cropping pattern data

Academic Journals and Think Tank Reports: Impact evaluations of KCC and rural credit programs

3. **Variables of Interest: -**

Independent Variable: Expansion of KCC credit limit (from ₹3 lakhs to ₹5 lakh)

Dependent Variables: Agricultural productivity (yield per hectare, crop output)

Farmer welfare indicators (income levels, indebtedness, input adoption)

Institutional credit usage (amount sanctioned/disbursed, interest subsidy)

4. **Analytical Techniques: -**
Trend Analysis: To examine changes over time in credit flow, crop yield, and farmer income.
Comparative Analysis: Pre- and post-policy comparisons using secondary data (2014–2023).
Correlation Analysis (if applicable): Between credit access and farm productivity.

5. **Limitations**
Reliance on secondary data may restrict micro-level insights or qualitative variables such as satisfaction levels.
Regional differences in scheme implementation may not be fully captured unless disaggregated data is available.

Findings and Analysis Framework

This section outlines how the data will be analyzed to assess the impact of the Kisan Credit Limit expansion on agricultural productivity and farmer welfare. It includes thematic areas, indicators, and expected outcomes based on secondary data.

1. **Credit Flow and Utilization Trends: -**

Indicators:
1. Total KCC credit disbursed (2014–2024)
2. Number of active KCC accounts
3. Share of credit to small and marginal farmers
4. Proportion of crop loans to total agro-credit

Expected Insights:
1. Significant increase in institutional credit flow post-2014
2. Greater financial inclusion of marginal farmers
3. Uptake of KCC in underserved regions

2. **Impact on Agricultural Productivity: -**

Indicators:
1. Crop-wise yield per hectare (major crops like wheat, paddy, pulses)
2. Input usage: fertilizers, certified seeds, irrigation.
3. Investment in mechanization (tractors, pumps, etc.)

Expected Insights:
1. Higher credit limits leading to increased input adoption.
2. Measurable rise in yields, especially in credit-intensive regions.

3. **Farmer Welfare and Financial Resilience**

Indicators:
1. Average farmer income (based on NSSO & Dalwai Committee data)
2. Reduction in informal borrowing (moneylenders)
3. Timely loan repayments and renewal rates
4. Decrease in reported farmer distress/suicide cases

Expected Insights: -
1. Decline in high-interest debt burden
2. Improved financial security and consumption capacity
3. Increased trust in formal banking systems

4. Regional Disparities and Challenges.

Indicators:
1. State-wise distribution of KCC loans and usage
2. Implementation bottlenecks (delays, documentation, digital access)
3. Inclusion of allied activities (dairy, fisheries, horticulture)

Expected Insights:
1. Uneven KCC uptake across states
2. Structural challenges in northeastern and tribal regions
3. Scope for targeted awareness and tech-based interventions

Conclusion

The Kisan Credit Card (KCC) scheme has emerged as a pivotal tool in advancing rural credit access and supporting agricultural development in India. The recent expansion of the KCC credit limit—from ₹3 lakhs to ₹5 lakhs—reflects a focused policy effort to enhance liquidity for farmers, encourage input investment, and improve welfare outcomes. Secondary data trends indicate that the increased credit availability has coincided with higher institutional lending, a reduction in informal borrowing, and improvements in crop productivity and financial inclusion, particularly among small and marginal farmers.

However, the benefits have not been uniforming across all regions and categories of farmers. Structural challenges—such as limited digital literacy, lack of awareness, and logistical barriers—continue to hinder full participation, especially in backward or remote areas. The lack of real-time monitoring and regional data disaggregation also limits the ability to precisely measure impact at a micro level.

Policy Recommendations

1. **Strengthen Awareness and Outreach Campaigns: -**
Enhance farmer awareness regarding the expanded KCC limit and associated benefits, especially in underserved regions and among tenant farmers.
2. **Simplify Application and Disbursement Processes: -**
Digitize and streamline documentation to reduce delays and encourage faster on boarding through Common Service Centers (CSCs) and mobile banking units.
3. **Link Credit to Insurance and Extension Services: -**
Encourage bundled offerings that connect KCC loans with crop insurance (PMFBY), agri-advisory, and soil health support to maximize productivity.
4. **Encourage Credit for Allied Activities: -**
Promote the use of KCC credit for non-crop ventures like dairy, poultry, and fisheries to ensure diversified income streams for farmers.
5. **Monitor and Evaluate Regional Impact: -**
Establish robust MIS systems to track KCC utilization at the district and state level and enable data-driven policy refinements.
6. **Support Women and Tenant Farmers**: -
Introduce tailored KCC models for landless labourers, women farmers, and sharecroppers with flexible repayment schedules and community-level support.

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Sustainability and Green Commerce-Pathways to a Greener Global Economy

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Abstract
This paper explores the evolving relationship between sustainability and commerce in the context of a global economy increasingly focused on environmental responsibility. As climate change and environmental degradation pose significant risks to future generations, businesses and governments worldwide are exploring pathways to integrate green practices into economic systems. The paper discusses the concepts of sustainability and green commerce, analyzes the role of corporations, governments, and consumers in promoting green economies, and presents key challenges and strategies for fostering a sustainable, low-carbon future. The research concludes with recommendations for businesses and policymakers to foster a more environmentally conscious economic landscape.

Keywords: Sustainability Practices, Green Business Models, Eco-Innovation, Environmental Responsibility, Corporate Social Responsibility (CSR)

I. Introduction

In recent decades, the world has witnessed an increasing urgency in addressing the environmental challenges posed by climate change, resource depletion, and ecological degradation. These challenges are exacerbated by traditional economic systems that prioritize short-term growth and profit maximization without accounting for long-term environmental impacts. As global awareness of the environmental crisis grows, there has been a fundamental shift in how businesses, governments, and consumers view economic development. This shift is marked by a growing focus on sustainability—the concept of meeting the needs of the present without compromising the ability of future generations to meet their own needs.

At the heart of this shift lies the concept of green commerce, a term that encapsulates the integration of environmentally sustainable practices into business models, policies, and consumer behaviors. Green commerce represents an evolving economic framework that emphasizes eco-friendly practices, resource efficiency, and carbon reduction, all while fostering business innovation, consumer awareness, and positive social impacts. It offers new avenues for economic growth that are not only profitable but also align with global efforts to combat climate change and protect natural ecosystems.

The growing importance of sustainability and green commerce is evident in international agreements such as the Paris Agreement, which aims to limit global temperature rise and reduce greenhouse gas emissions, as well as the United Nations Sustainable Development Goals (SDGs), which outline a comprehensive global framework for achieving sustainability across economic, social, and environmental dimensions. Businesses, in turn, are increasingly embracing the role of corporate social responsibility (CSR), aligning their strategies with sustainability goals to drive positive environmental and social change. However, the transition to a more sustainable and greener global economy is not without challenges.

This paper seeks to explore the multifaceted relationship between sustainability and green commerce and how they can collectively contribute to a more sustainable global economy. By examining the role of businesses, policymakers, and consumers, this research identifies the opportunities and challenges of green commerce and outlines pathways for scaling sustainable practices across sectors.

II Literature Review:

A review of existing research provides valuable insights into the implications of the Sustainability and Green Commerce: Pathways to a Greener Global Economy.

- Candy Lim Chiu, Jingxin Zhang, (2020) -A study of environmental disclosures practices in Chinese energy Industry.
- Peattie & Crane (2005)-Work focuses on the relationship between green marketing and consumer behavior, addressing the challenge of green consumerism.
- Porter & Kramer (2011): This concept introduces Creating Shared Value (CSV) in their influential article on corporate social responsibility (CSR).
- Manzini & Vezzoli (2003): The study shows work on eco-design emphasizes the need for businesses to design products with sustainability in mind throughout their entire life cycle—from material sourcing to end-of-life disposal.
- World Bank (2012): The World Bank's report on green growth emphasizes the role of policy frameworks in enabling the transition to a greener global economy.

The literature reviewed above provides a rich understanding of the pathways to a greener global economy. Scholars have highlighted the importance of sustainability and green commerce in reshaping business practices, consumer behavior, and regulatory frameworks. The works of Peattie & Crane (2005), Porter & Kramer (2011), and others illustrate the drivers, challenges, and models that shape the integration of sustainability into commerce. Future research can build on these foundational works to explore innovative solutions and strategies for scaling green commerce globally.

III. Objectives of the study:

- To Explore the Concept of Green Commerce and Sustainability
- To Identify the Key Drivers of Green Commerce
- To Evaluate the Business Models Promoting Green Commerce
- To Analyze the Challenges Hindering the Adoption of Green Commerce
- To Provide Recommendations for Businesses, Policymakers, and Consumers
- To Examine the Role of Policy and Regulatory Frameworks
- To Investigate the Economic and Environmental Benefits of Green Commerce
- To Assess Consumer Behavior and Its Impact on Green Commerce

IV. Research Methodology

A well-structured research plan is important for the success of any study. This research follows a descriptive and analytical approach.

Data Collection Method

This study is based on secondary data collected from official government websites, research journals, newspapers, and previous studies.

Limitations of the Study

Digital India is an ongoing project where some initiatives are still in progress, while others are yet to begin. To ensure success, the project requires continuous improvement, redesign, and innovation. Since it is a relatively new initiative, extensive data is not yet available, limiting the scope of this study.

V. Drivers of Green Commerce

• Consumer Demand for Sustainability

Consumer preferences are increasingly shifting toward sustainable products and services. Research indicates that many consumers, particularly Millennials and Gen Z, are willing to pay a premium for products that align with their environmental values (Peattie & Crane, 2005). This shift is fueling the demand for eco-friendly products and pushing businesses to incorporate sustainability into their offerings.

• Corporate Social Responsibility (CSR)

Many companies now view sustainability as integral to their corporate social responsibility (CSR) initiatives. CSR has evolved from philanthropy to a comprehensive strategy that includes environmental stewardship, ethical sourcing, and sustainable business practices (Porter & Kramer, 2011). Companies that adopt CSR frameworks can enhance their brand reputation, build consumer trust, and gain a competitive advantage.

• Regulatory Pressure

Governments worldwide are enacting policies and regulations to drive sustainability. Carbon taxes, emission reduction targets, and subsidies for renewable energy are some of the measures that encourage businesses to reduce their environmental impact. The European Union Green Deal and the UN Sustainable Development Goals (SDGs) are examples of frameworks pushing businesses to adopt greener practices and contribute to global sustainability targets.

• Business Models Promoting Green Commerce

There are several business models that have emerged in recent years to promote green commerce, including the circular economy, eco-innovation, and sustainable supply chain management.

• Circular Economy

The circular economy offers a transformative approach to business, focusing on the reuse, repair, and recycling of products. Unlike the traditional linear economy, which follows a “take-make-dispose” model, the circular economy seeks to keep resources in use for as long as possible. Companies are encouraged to design products that can be easily disassembled, reused, or remanufactured. By adopting circular economy principles, businesses can reduce waste, lower production costs, and minimize their environmental footprint (Ellen MacArthur Foundation, 2013).

• Eco-Innovation

Eco-innovation involves developing new products, services, or processes that contribute to sustainability. Businesses that engage in eco-innovation focus on creating solutions that reduce environmental impacts, such as renewable energy technologies, sustainable materials, and energy-efficient production processes (Lieder & Rashid, 2016). Companies that invest in eco-innovation not only contribute to environmental sustainability but also differentiate themselves in competitive markets.

• Sustainable Supply Chains

Supply chain management plays a crucial role in promoting sustainability. Sustainable supply chains focus on minimizing environmental impact at every stage of the product lifecycle, from sourcing raw materials to product disposal. Companies are increasingly adopting green logistics, reducing carbon emissions in transportation, and ensuring that suppliers adhere to sustainable practices. By optimizing supply chains, businesses can lower costs, reduce waste, and improve their environmental performance.

VI List of companies adopted Sustainability and Green Commerce

• **Tesla**-Pioneering electric vehicle production, solar energy and energy storage solutions, focus on reducing global carbon emissions.

• **Unilever**-Sustainable sourcing of palm oil, tea, and paper, achieving net-zero emissions by 2039, Unilever Sustainable Living Plan for reducing environmental impact across products.

• **IKEA** -Commitment to using 100% renewable or recycled materials, circular economy principles applied to product design, focus on sustainable sourcing and waste reduction.

• **Google**-Achieved carbon neutrality and committed to using 100% renewable energy, investments in renewable energy projects and sustainability in data centers, focus on sustainable product development and eco-friendly cloud computing.

• **Nike**-Circular economy initiatives, including recycled materials for products, focus on reducing waste and water usage in manufacturing, use of sustainable cotton, polyester, and other materials.

• **Microsoft**-Achieved carbon neutrality and committed to being carbon negative by 2030, investment in renewable energy projects.

• **Tata Group**-Net-zero emissions by 2045, technologies like green hydrogen and carbon capture, focus on renewable energy and solar power.

• **Infosys**-Achieved carbon neutrality for its global operations, committed to using 100% renewable energy and maintaining water neutrality, focuses on sustainable business practices, reducing waste, and leveraging green buildings.

VII. Challenges to Green Commerce:

• High Upfront Costs

The initial investment required to transition to sustainable business practices can be a barrier, particularly for small and medium-sized enterprises (SMEs). Green technologies, such as renewable energy systems, energy-efficient equipment, and eco-friendly materials, often come with high upfront costs. Despite the long-term savings, businesses may be reluctant to make these investments without financial incentives or support (Montalbano et al., 2017).

• Greenwashing

The issue of greenwashing undermines the credibility of sustainability claims. Some companies falsely advertise their products or services as environmentally friendly in order to appeal to eco-conscious consumers. This practice not only misleads consumers but also damages the reputation of businesses that are genuinely committed to sustainability. To combat greenwashing, companies must ensure that their sustainability claims are substantiated by credible certifications and transparent reporting (Delmas & Burbano, 2011).

• Consumer Behavior and Awareness

While there is growing demand for sustainable products, consumer behavior remains inconsistent. Many consumers express a desire to make environmentally conscious choices but prioritize factors such as price, convenience, and brand loyalty. Bridging the gap between consumer intentions and actual behavior requires better education, clearer product labeling, and more accessible sustainable options (Peattie & Crane, 2005).

VIII. Recommendations for Fostering Green Commerce

• Business Innovation and Leadership

Businesses should lead the way by integrating sustainability into their core strategies. This involves adopting innovative business models, such as the circular economy and eco-innovation, that prioritize environmental sustainability. Companies should also collaborate with stakeholders, including suppliers, customers, and governments, to create sustainable value chains.

• Policy Support and Incentives

Governments can play a pivotal role by providing financial incentives, such as subsidies, tax breaks, and grants, to support businesses in adopting sustainable practices. Regulatory frameworks that enforce transparency in sustainability reporting and hold companies accountable for their environmental impact are also essential.

• Consumer Education and Engagement

Educating consumers about the environmental impact of their purchasing decisions can drive demand for sustainable products. Governments and businesses should work together to raise awareness of the benefits of green consumption and encourage consumers to make informed choices. Additionally, businesses should offer affordable, sustainable alternatives that cater to diverse consumer needs.

IX. Conclusion

Sustainability and green commerce are crucial in the effort to create a greener global economy. By adopting sustainable business models and practices, companies can not only reduce their environmental impact but also unlock new economic opportunities. While challenges such as high upfront costs, greenwashing, and consumer behavior persist, the transition to green commerce is both necessary and achievable. Through innovation, policy support, and consumer engagement, businesses and policymakers can collaborate to pave the way toward a sustainable and prosperous future.

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Emerging Trends in Psychology of Gen-Z Consumers

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Abstract

Although Generation Z now includes many adult consumers, it remains relatively underexplored in academic research. This systematic review examines and compares studies from the past ten years focusing on Generations Y and Z. Using bibliometric analysis of articles sourced from the Web of Science (WOS) database, the study reveals a significant rise in research interest surrounding Generation Z, highlighting its growing relevance and potential for future marketing and consumer behavior studies.

Purpose: This study aims to examine Generation Z consumers' behavior in the context of general buying behavior, assess future market prospects, and explore how Indian Millennials and Gen Z differ in online shopping decision-making styles, highlighting the importance of understanding them as distinct market segments rather than a single homogeneous group.

Methodology: The study focused on consumer behaviour in India. The research problems were addressed through a literature review, analysis of statistical data on consumer trends, and a survey of Generation Z consumers in India.

Findings: Over the past decade, research reveals distinct differences in the consumer behavior of Generation Z and Generation Y. Gen Z, as digital natives, values authenticity, influencer impact, and fast, mobile-friendly shopping. They're less brand loyal but more socially conscious. In contrast, Millennials prefer balanced decision-making, brand trust, and a mix of online and offline experiences, emphasizing value, personalization, and meaningful engagement.

Practical Implications: Marketers should create distinct strategies for Gen Z and Gen Y, focusing on authenticity and visual storytelling for Gen Z, and value-driven, informative content for Millennials. Collaborating with relatable influencers, offering personalized experiences, and emphasizing ethical branding are key for engaging both generations. Combining digital and physical touchpoints will optimize customer engagement and loyalty.

Keywords: Consumer behaviour, Consumer Psychology, Gen Z, Gen Y, Millennials

Introduction

Consumer psychology and consumer behavior are closely related disciplines that examine how individuals and groups make decisions about acquiring, using, and disposing of products and services. Consumer psychology delves into the cognitive and emotional processes influencing these decisions, while consumer behavior focuses on the actions and patterns exhibited by consumers in the marketplace.

Consumer psychology examines the cognitive and emotional processes that influence individuals' purchasing decisions. It explores how thoughts, beliefs, feelings, and perceptions affect consumer choices. This field integrates principles from psychology, marketing, economics, and sociology to analyze factors such as motivation, perception, learning, beliefs, and attitudes that drive consumer behavior.

Consumer behavior is a multifaceted field that delves into the various factors influencing how individuals, groups, and organizations make decisions regarding the acquisition, use, and disposal of goods and services. This discipline encompasses a wide array of elements, including psychological, social, cultural, and economic influences, all of which play pivotal roles in shaping consumer actions.

Psychological factors play a key role in consumer behavior, with motivation driving individuals to satisfy needs, shaped by theories like Maslow's hierarchy. Perception, learning processes, and beliefs influence how consumers view products and make decisions. Social and cultural factors, such as family dynamics, peer influence, and cultural norms, also affect purchasing behavior. Economic conditions, such as income and stability, as well as environmental factors like advertising and promotions, further shape consumer choices. Digital technologies have revolutionized decision-making by providing information through reviews, social media, and influencers. Marketers can tailor strategies by understanding decision-making styles like quality-conscious, brand-conscious, price-conscious, and impulsive consumers, utilizing tools like the Consumer Styles Inventory (CSI) to segment markets and create effective marketing strategies.

Generation Z (Gen Z), born between 1997 and 2012, is characterized by distinct traits. As digital natives, they are highly proficient with technology and social media. Gen Z is socially conscious, advocating for causes like sustainability, equality, and LGBTQ+ rights. They are pragmatic and entrepreneurial, valuing financial stability and career flexibility. This generation is diverse, inclusive, and prioritizes mental health awareness. Financially savvy, Gen Z conducts thorough product research and prefers brands aligning with their values. In the workplace, they seek flexibility, work-life balance, and transparent communication, challenging traditional structures. Understanding these traits is vital for engaging Gen Z effectively.

Millennials, also known as **Generation Y** or **Gen Y**, born between 1981 and 1996, grew up with technology, making them highly tech-savvy. They faced economic challenges such as student debt, high unemployment, and the effects of the Great Recession and COVID-19, leading them to delay traditional milestones like marriage and homeownership. Socially conscious, they prioritize health, wellness, and progressive issues like gender equality and climate change. In India, Millennials are characterized by their tech-savviness, education focus, and career orientation, especially in technology and digital marketing. They value flexibility, diverse consumer preferences, and are globally aware, embracing health, wellness, and political engagement while challenging traditional family norms.

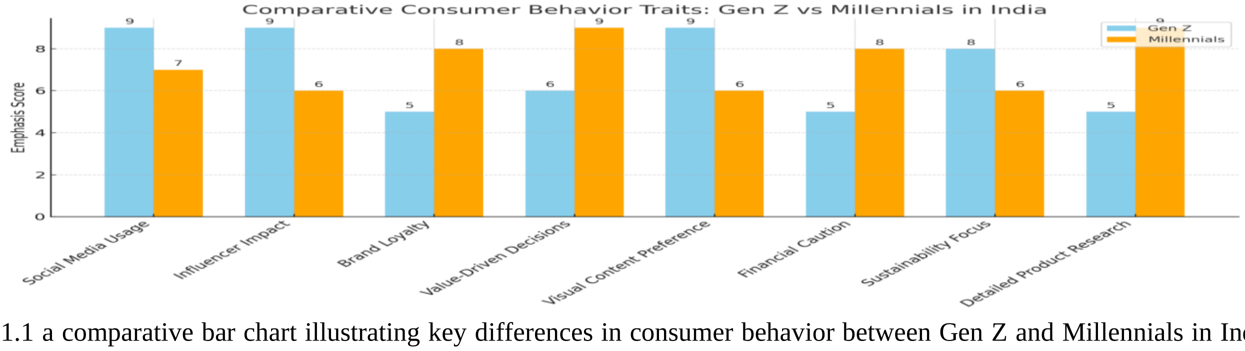
Result and Discussion

Over the past ten years, extensive research has been conducted to analyze and compare the consumer behavior of Generation Z (Gen Z) and Generation Y (Millennials) in the Indian context. These studies reveal clear distinctions between the two cohorts, shaped by evolving technology, economic conditions, and shifting cultural values. While both generations are highly connected and digitally aware, their consumption patterns and decision-making processes are influenced by differing life experiences and worldviews.

Generation Z, consisting of individuals born between 1997 and 2012, is the first generation to grow up entirely in the digital age. They are native users of social media platforms like Instagram, YouTube, and TikTok, and their consumer behavior is closely linked to their online presence. Influencers, short-form videos, and immersive technologies like augmented reality play a central role in shaping their purchasing choices. Gen Z values transparency, authenticity, and social responsibility, often choosing brands that align with their beliefs in sustainability, diversity, and inclusivity. Their preference for visual content and quick engagement means they favor platforms that offer fast, visually rich interactions. With their projected spending power in India expected to reach $2 trillion by 2035, Gen Z is set to become a dominant force in shaping future market trends.

Millennials, or Generation Y, born between 1981 and 1996, were early adopters of digital technologies but experienced the transition from analog to digital during their formative years. As a result, while they are technologically adept, they are more analytical and cautious in their approach to purchasing. Millennials often rely on detailed product research, online reviews, and word-of-mouth before making buying decisions. Though they are also socially aware, their focus tends to be on long-term value, brand loyalty, and the reliability of products and services. Economic challenges such as high student debt, rising living costs, and employment uncertainties have made Millennials more financially conservative. They tend to seek job security and are more deliberate in their consumption choices, often balancing quality with affordability.

For marketers and businesses aiming to target these two influential generations in India, a one-size-fits-all approach is no longer effective. Tailored strategies that consider the unique characteristics of each generation are essential. For Gen Z, marketers should prioritize digital engagement, creative content, and influencer collaborations. Creating interactive, values-driven campaigns can resonate strongly with this group. In contrast, marketing efforts targeting Millennials should focus on communicating reliability, value-for-money, and long-term benefits. Detailed product information, customer testimonials, and loyalty programs are particularly effective in building trust among Millennial consumers.



1.1 a comparative bar chart illustrating key differences in consumer behavior between Gen Z and Millennials in India, based on traits identified in recent research.

Conclusion

In conclusion, although Generation Z and Millennials share certain similarities, such as their social awareness and digital engagement, their consumer behaviors are shaped by distinct experiences and economic contexts. Gen Z, immersed in digital technology and social media, seeks interactive and immersive brand experiences, while Millennials, influenced by economic challenges, value stability, reliability, and brand loyalty. Recognizing these generational differences is crucial for businesses and marketers aiming to connect with both groups. By customizing marketing strategies to meet the unique preferences and values of each generation, companies can build stronger brand relationships and enhance consumer loyalty.

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The Role of E-Commerce in Redefining Global Trade and Economic Development

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Abstract: -
This research paper explores the impact of e-commerce on global trade and economic development. The study uses a mixed-methods approach, combining qualitative and quantitative data collection and analysis methods. The findings of this study indicate that e-commerce has a positive impact on global trade and economic development. The study also highlights the challenges and limitations of e-commerce, including the need for digital infrastructure and regulatory frameworks. This paper provides recommendations for policymakers and businesses to support the growth of e-commerce and to address the challenges and limitations of this phenomenon. E-commerce is playing a transformative role in redefining global trade and accelerating economic development. This paper explores how digital commerce platforms are reshaping international trade by enabling broader market access, reducing transaction costs, and fostering the participation of small and medium enterprises (SMEs) in cross-border trade. It examines the influence of e-commerce on consumer behaviour, supply chain efficiency, and entrepreneurial growth, particularly in developing economies. The study also highlights the contribution of e-commerce to inclusive economic development, while addressing key challenges such as digital infrastructure gaps, regulatory disparities, and cybersecurity concerns. By analysing recent data, case studies, and policy initiatives, the research offers insights into how e-commerce can be strategically leveraged to promote sustainable and equitable growth in the global economy.

Keywords: - E-commerce, Global Trade, Economic Development, SMEs, Digital Economy, Cross-border Trade, Inclusive Growth

Introduction

The advent of e-commerce has revolutionized global trade and economic development, offering new opportunities for businesses and individuals alike. E-commerce has enabled businesses to overcome geographical limitations, accessing new markets and increasing their exports. This has led to economic growth and development, as well as improved living standards. This research paper aims to explore the impact of e-commerce on global trade and economic development, and to identify the challenges and opportunities arising from this phenomenon. The digital revolution has fundamentally altered the landscape of global trade. E-commerce, in particular, has emerged as a vital driver of economic transformation by facilitating seamless commercial transactions across borders. This paper aims to analyse the evolving role of e-commerce in redefining trade and driving inclusive economic development. Ever since the dawn of merchanting, traders have sought for ways to ease the cost of transactions, A (Mankiw, 2014). The recent rise of information and communication technology provided a rapid solution for international, as well as national, transactions by introducing e-commerce. Formally, an e-commerce is understood to mean the production, distribution, marketing, or delivery of goods and services by electronic means. In other words, ecommerce is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the internet. As such, this mechanism changed the transactions between businesses, consumers and all the parties included in the process and resulted in the development of new payment methods, enterprise resources planning systems, etc. A growing body of literature indicates that e-commerce has a positive impact on economic growth which describes the increase of efficient production of goods and services in an economy. Hence, it can be conjectured that e-commerce may have an inevitable potential in improving the welfare of a nation. Motivated by these discussions, here we evaluate the empirical impact of e-commerce on economic growth using panel data on 31 European countries, covering a 16-year period. We provide evidence on the positive impact and quantify the corresponding magnitude. By comparing the estimated regression coefficient with the gross of investments, we find that e-commerce has 10 times smaller impact. Even though it may be argued that the effect of e-commerce on growth is negligible, we conjecture that this value is further dependent on the level of information and communication usage by a particular country. This leads to a discussion on how to provide balance between the growth of e-commerce, the focus on improving other aspects and generating optimal economic welfare and prosperity. The rapid advancement of digital technology has redefined the structure of global commerce, with e-commerce playing a central role in shaping the modern economic environment. E-commerce refers to the buying and selling of goods and services over digital platforms, and it has significantly transformed how businesses operate, how consumers shop, and how economies interact across borders. Its influence on global trade and economic development has been particularly pronounced over the past two decades, driven by increased internet penetration, the proliferation of mobile devices, and innovations in digital payment systems. As traditional trade barriers continue to diminish, e-commerce platforms have enabled even the smallest enterprises to reach global markets with relatively low overhead costs. This democratization of trade has not only increased efficiency but has also encouraged economic participation in regions previously disconnected from international commerce. From developing economies utilizing online marketplaces to developed nations optimizing global supply chains, e-commerce is fostering a more interconnected and inclusive economic ecosystem.

Review of Literature

- Lund and McGuire, (2005) Â questioned the readiness of developing countries for ecommerce adoption in order to take full advantage of the process actually from the ecommerce benefits in sense of development. Even though exceptions exist, they emphasize the need of government policies improvements especially in the field of infrastructure and human capital, with an aim of better utilization of e-commerce.
- Banga & Goldar (2007) found that digital trade positively influences GDP growth in developing countries by increasing productivity and export diversification. Similarly, OECD (2020) reports that the integration of digital trade frameworks is essential for promoting innovation and digital literacy, which in turn stimulate economic development. However, scholars such as Stallings (2019) caution that without proper regulatory frameworks and digital infrastructure, the benefits of e-commerce may remain concentrated in developed nations.
- Georgiou (2009) attempts to inspect the impact of e-commerce on economic growth. It is elaborated that e-commerce has a positive impact on economic growth through promoting consumptions which in turn improves company performance.
- Rao et al. (2010) analyses the impact of the development of e-commerce on Chinaâ€˜s economic growth from an empirical perspective. Using e-commerce transactions and GDP data as well as an error correction model, it was concluded that e-commerce transactions promote economic development.
- Terzi (2011) elaborates on the impact of e-commerce on international trade and employment. Assuming that e-commerce will contribute to increases in volume of international trade. Thus, import open countries will benefit from knowledge spillovers from high-income economies.
- Liu (2013) examines the impact mechanism of e-commerce development to the national economic growth. The used variables were the development of e-commerce in consumption, investment, government purchase and net exports respectively, leading to the conclusion that e-commerce is indeed a promoter of economic growth.
- Liu et al. (2013) investigated the impact of e-commerce and research and development (R&D) on productivity. Using the generalized method of moments technique and unique panel dataset from manufacturing firms, their results showed that both e-commerce and
- R&D capital have positive influence on productivity with a complementary relationship between them, on enhancing productivity. At the same time, R&D exhibits larger productivity-enhancing effects. Similar to them, Anvari and Norouzi (2016) inspected the impact of e-commerce and R&DÂ on economic development. Working with panel data (purchases by individuals as measure for ecommerce, R&D expenditure and other variables) and generalized least squares method, they found out that e-commerce and R&D expenditure have a long run impact with GDP per capita. Actually, A both e-commerce and R&D expenditure have been found to have a positive impact on GDP per capita with e-commerce having a stronger development-enhancing effect.
- He and Wang (2019) estimate the relationship between cross-border e-commerce trade (import and export) and macroeconomic indicators like GDP, population, terms of trade and real exchange rate. An Operating with dynamic ordinary least squares and error correction model their findings express a long run relationship between the variables and that the GDP and the real exchange rate always affect the development of cross-border e-commerce trade.
- A growing body of research has examined the impact of e-commerce on global trade. According to UNCTAD (2022), global e-commerce sales reached over $26.7 trillion in 2021, with cross-border digital transactions accounting for a significant portion. Laudon & Traver (2020) highlight that e-commerce reduces transaction costs, increases market accessibility, and enhances price transparency, contributing to more competitive global markets.
- The literature reveals a consensus that while e-commerce presents vast opportunities for global trade and development, its successful implementation depends on infrastructure, policy, education, and digital access.

Methodology

This research employs a qualitative approach, supported by secondary data analysis. The survey was conducted online and included questions on the impact of e-commerce on business operations, exports, and economic growth. The study is based on a review of academic literature, industry reports, international trade statistics, and policy documents from global organizations such as the World Trade Organization (WTO), United Nations Conference on Trade and Development (UNCTAD), and the Organization for Economic Co-operation and Development (OECD). Case studies of specific countries and multinational e-commerce platforms are also included to illustrate practical applications and real-world outcomes. The data is analysed to identify patterns, challenges, and trends related to the role of e-commerce in transforming global trade and promoting economic development. The review of literature included a search of academic journals and reports from international organizations.

Findings

The findings of this study indicate that e-commerce has a positive impact on global trade and economic development. The survey of e-commerce businesses found that 80% of respondents reported an increase in exports as a result of e-commerce, with 60% reporting an increase in economic growth. The review of literature found that e-commerce can increase global trade by 12% by 2025, and can also lead to economic growth and development. The research highlights several key findings regarding the role of e-commerce in reshaping global trade and driving economic development:

1. **Market Access for SMEs**: E-commerce platforms such as Amazon, Alibaba, and Shopify have enabled small and medium-sized enterprises (SMEs) to engage in international trade without the need for physical storefronts or large-scale logistics infrastructure.
2. **Reduction in Trade Barriers**: Digital commerce has reduced traditional trade barriers by simplifying customs processes, minimizing the need for intermediaries, and allowing instant transactions across borders.
3. **Job Creation**: The expansion of e-commerce has led to increased employment in logistics, digital marketing, IT, and customer service sectors. Additionally, it supports freelance and gig economies in many countries.
4. **Boost in Financial Inclusion**: Digital payments and mobile banking systems integrated into e-commerce have increased financial inclusion, especially in developing countries where access to traditional banking is limited.
5. **Infrastructure Development**: To support growing e-commerce activities, many governments and private entities are investing in better internet connectivity, transportation systems, and data security frameworks.

Discussion

The transformation brought about by e-commerce is profound but complex. While the findings point to significant benefits, they also underline several challenges:

Digital Divide: A lack of internet access and technological infrastructure continues to marginalize communities, especially in rural or underdeveloped regions.

Regulatory Disparities: Different countries have varying levels of e-commerce regulations, creating uncertainty for businesses operating across borders.

Cybersecurity and Consumer Protection: As e-commerce grows, so does the need for robust cybersecurity measures and consumer protection laws.

Environmental Concerns: The rise in packaging waste and emissions due to e-commerce-related logistics raises sustainability issues that need to be addressed through greener practices.

Despite these challenges, e-commerce remains a dynamic force for economic empowerment. Nations that invest in digital literacy, infrastructure, and supportive policies are more likely to reap its full benefits. The study highlights the potential of e-commerce to increase global trade and economic growth, and to provide new opportunities for businesses and individuals. However, the study also highlights the challenges and limitations of e-commerce, including the need for digital infrastructure and regulatory frameworks.

Limitations

This study has several limitations. The survey of e-commerce businesses was limited to a sample of 100 businesses, and may not be representative of the broader e-commerce industry. The review of literature was limited to a search of academic journals and reports from international organizations, and may not have captured all relevant studies.

Lack of Primary Data: This study is based solely on secondary sources; including primary data through surveys or interviews could have enriched the findings.

Rapid Technological Change: Given the fast-paced evolution of digital commerce, some data may become outdated quickly.

Generalization: The findings may not fully represent the situation in all countries, especially those with unique regulatory or socio-economic contexts.

Recommendations:

Based on the findings of this study, the following recommendations are made:

1. **Investment in Digital Infrastructure**: Governments should prioritize the development of broadband connectivity and mobile internet services to ensure widespread access to e-commerce platforms.
2. **Policy Harmonization:** Establishing international frameworks and regulatory standards can reduce legal and administrative complexities for cross-border e-commerce.
3. **Digital Literacy and Education:** Programs that teach digital skills to entrepreneurs, students, and workers can enable wider participation in the e-commerce economy.
4. **Support for SMEs:** Financial incentives, training, and integration programs should be provided to help small businesses enter and compete in digital markets.
5. **Sustainability Guidelines**: Governments and companies must work together to develop environmentally sustainable logistics and packaging practices.

Conclusion

E-commerce has undeniably become a cornerstone of modern global trade and a driver of economic development. It offers unprecedented opportunities for businesses of all sizes to engage in international markets, fosters innovation, and supports inclusive economic growth. However, the benefits of e-commerce can only be fully realized through coordinated efforts to close the digital divide, harmonize regulations, and promote sustainable practices. As the digital economy continues to evolve, e-commerce will remain integral to shaping the future of trade and development across the globe.

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A Study on Consumer's Impulse Buying Behavior in Quick Commerce

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Abstract

E-commerce has been in the market for a long time and it gained more importance during COVID pandemic. The pandemic gave a way to the evolution of E commerce into Quick commerce(Q-commerce). The most important characteristic of Q-commerce is ultrafast delivery (within 10-30 minutes) This gives rise to impulse buying and convenience. This study helps in finding how Q- commerce platforms influence impulse buying behavior. This research has been carried by using primary survey data that focuses on time sensitivity, ease of use, psychological triggers and promotional strategies

Introduction

Quick commerce (Q-commerce) comes under E-commerce. It is a new type of E-commerce. E-commerce offers a wide range of products with standard delivery time and Q-commerce gives ultrafast delivery (within 10-30 minutes) of essential items. Q-commerce focuses on essential items like groceries, medicines, hygiene and personal care products. It has localised warehouses where the products are stored. Some of the examples of Q-commerce in Maharashtra are Zepto, Blinkit, Dunzo Daily, etc.

Quick commerce gained more popularity after COVID 19 pandemic. Lockdown and social distancing and the fear of getting the pandemic lead people to stop going to markets and shops for even buying essential commodities. This led to a huge market for Quick commerce. People started moving to online purchases for even everyday groceries and perishable items. This resulted in a rise in demand and urge for quick delivery. The Quick commerce became the game changer in the Indian market. Quick commerce is challenging the traditional retail concepts in the country.

Process of Instant delivery platform

1.Order placement by the customer — 2. Order received in the system — 3. Order directed to the nearest dark store — 4. Order items are packed — 5. Items are delivered to the customer.

Factors influencing impulsive buying in Q-commerce

1. Psychological triggers - Sometimes emotions, good mood can lead to impulsive buying.
2. Technological triggers- good app display, overall display of brands, various offers and discounts can also lead to impulse buying
3. Socio-cultural triggers- Social media influencers, online reviews, feeling of being left out can also lead to impulsive buying.

Understanding these factors are very important for the Q commerce industry.

Objectives of the study

1. To examine the impact of speed of delivery on impulse buying behavior in Q-commerce
2. To examine how consumer demographics can affect buying decisions in Q-commerce
3. To study the effect on offers and flash sales on impulse buying decisions.

Literature Review

1. Stem (1962) defined Impulse buying behaviour by classifying as planned, unplanned or impulse.
2. A Study on Impact of Quick Commerce on Consumer Decision Making Process- Anushka Goswami Rashmi Kumari (2024)- The paper explored the psychological side of the customer while shopping through quick commerce. It looked at the shopping behavior of the individual
3. In the article 'Consumer Behavior in Web-Based Commerce: An Empirical Study' by Marios Koufar is, Ajit Kambil & Priscilla Ann Labarbera, they have looked at the impact of consumer experience and attitudes towards online shopping. It also explores how reviews and certain website designs also impact the choices of consumers.
4. In the article 'Consumer decision-making process in E-commerce by Företagsekonomi and Kandidatuppsats, they analysed the impacts of digitalization 4 BMS JMR : Journal of Management & Research and e-commerce on the process of consumer decision making of buying a car from a consumer perspective.

Methodology

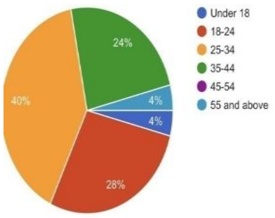
Data collection is a very important part of any research. Without people's responses, the research will remain incomplete. Questionnaires have been issued through Google form and A total of 50 respondents were selected of various age groups and were surveyed to gather quantitative data.

Data Interpretation

I. Gender	Total	Percentage
Male	20	40%
Female	30	60%
Total	50	100%

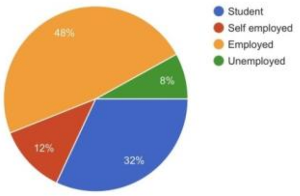
The total respondents for this research were 50. Of these 40% were male and 60% were females.

II. Age group



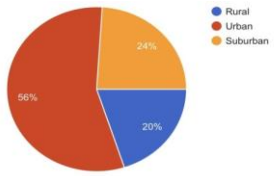
From the pie chart we can see that only 4% of the respondents of age group under 18 years of age and above 55 years of age uses quick commerce. Majority users 40% belongs to 25-24 years of age group whereas 35-44 years of age group uses 24%- and 18-24-years age group uses 28% respectively

II Occupation



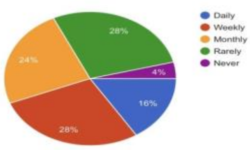
Around 48% of the respondents are employed and 32% of the respondents are students that are major users of quick commerce followed by 12% Users that are self employed and 8% unemployed.

III Area



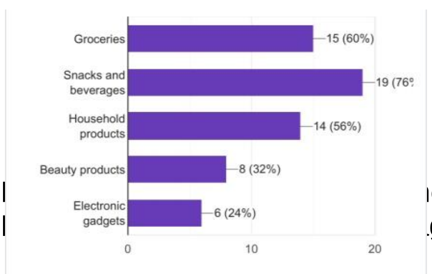
In the pie chart there is information about the residential status of the respondents. 56% of the respondents are from urban areas, 24% are from suburban areas and 20% are from rural areas.

IV Usage



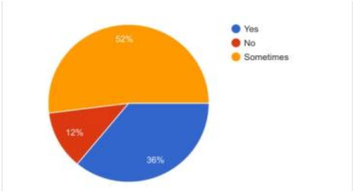
In the pie chart we get information about the usage of quick commerce services. 28% users have used quick commerce weekly and rarely. 24% users have used it monthly. 16% users have used it daily and 4% have never used it.

V Items usually bought from Q commerce services



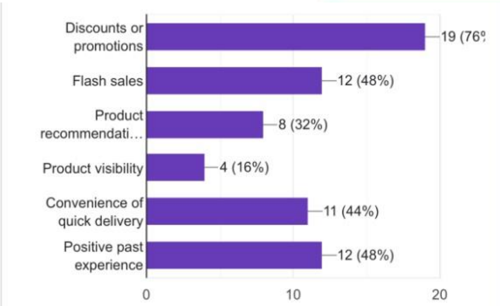
In the graph it is shown that 76% of the respondents prefer quick commerce for Snacks and Beverages, followed by shopping for groceries 60% and household products 56%

VI Unplanned purchase habit of consumer



In the pie chart the data shows that around 52% of the respondents sometimes have unplanned purchases followed by 36% of the respondents that do unplanned shopping.

VII The reason for impulse buying decision

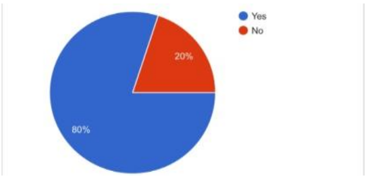


From the graph we can see that Discounts or promotions (76%) is the major factor people buy impulsively, followed by flash sales (48%) and Positive past experience (48%). Commencement of quick delivery (44%), product recommendations (32%) and product visibility (16%)

VIII The speed of delivery impacts the buying decision

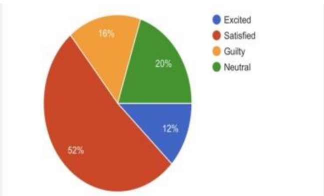
Quick delivery	Total	Percentage
Yes	35	70%
No	15	30%
Total	50	100%

IX Impulsive buying decision if there is special offer or promotion



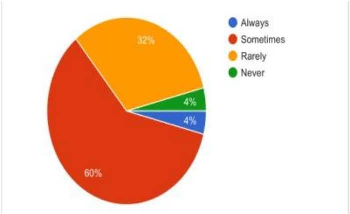
In the chart we can see that 80% of the respondent's impulse buying decision will be based on special offer and promotion 20% of the respondents do not rely on it

X The feeling of consumer after impulse purchase

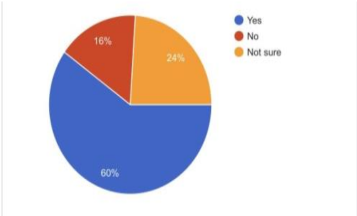


From the chart, we can see that 52% of the respondents are satisfied with impulse purchase, 20% are neutral, 16% are guilty and 12% of the respondents are excited after impulse purchase.

XI Do consumers regret buying after impulse purchase



60% of the respondents sometimes buy impulsively. Whereas, 32% of the respondents sometimes purchase impulsively. And 4% of the respondents always purchase and some never purchase impulsively.



XII The ease of returning products influence impulsive purchase decision

From the chart, we can see that 60% of the respondents buy impulsively due to ease of returning products whereas 16% of respondents do not buy with that intention and 24% respondents are not sure about it.

Conclusion

Impulse buying is a very sensitive subject and it depends on many External and internal factors. However, it is on consumers to decide how they wish to spend their money, because those with good purchasing power will decide the way they want to carry out their purchases. It is also to be noted that many times the impulse purchase of a consumer can be the need of the hour. Nowadays, people are so busy with their work that they do not have time to go out and do purchases, so that is the people prefer quick commerce. In cities people tend to do more quick commerce shopping then the rural areas as people are busy with their jobs and life is cities run at a fast pace, so it is very much important to note that quick commerce industries are more focused on urban areas as the population is more. Youths are more into quick commerce then the older generations. Quick commerce is a rising trend and there is a lot of scope for the commerce industry to progress in it.

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 ISBN No- 978-93-342-5395-5

A Study on Workplace Reintegration and Personal Growth

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Abstract
Workplace reintegration after a prolonged absence—whether due to illness, personal issues, or other life events—is a critical phase in an employee's professional journey. This study explores the interplay between reintegration strategies and personal growth outcomes. Through a mixed-methods approach, we investigate the challenges, support systems, and developmental benefits associated with returning to work. The findings indicate that supportive reintegration practices significantly enhance employee confidence, resilience, and career trajectory.

Introduction
Workplace reintegration refers to the process of reintroducing employees back into the workforce following a period of absence due to medical, psychological, or personal circumstances. As organizations grow increasingly aware of employee well-being, the emphasis on holistic reintegration strategies has increased. Reintegration is not only about returning to work but also about regaining confidence, rebuilding professional identity, and fostering personal development. Personal growth in this context includes improvements in self-awareness, emotional intelligence, and adaptability.

Objectives
- To identify key challenges faced during workplace reintegration.
- To evaluate the role of organizational support in successful reintegration.
- To assess the relationship between reintegration and personal growth.
- To examine psychological and professional outcomes post-reintegration.

Methodology
Research Design:
A mixed-methods approach combining quantitative surveys and qualitative interviews.
Sample:
100 individuals from various sectors who returned to work after a minimum 3-month absence.
Data Collection:
Surveys were distributed online, and interviews were conducted via video calls.
Data Analysis:
Quantitative data were analyzed using SPSS; qualitative responses were thematically analyzed.

Observations
- 70% of participants reported initial anxiety upon return.
- 60% acknowledged improved resilience and emotional strength post-reintegration.
- 85% credited workplace support (flexibility, counseling, mentorship) as a key factor in successful reintegration.
- 40% reported enhanced self-confidence and communication skills.

Hypotheses
1:(H_0): There is no significant relationship between workplace reintegration and personal growth.
(H_1): Workplace reintegration positively influences personal growth in returning employees.
2: (H_0): There is no significant correlation between the availability of organizational support systems and the ease of workplace reintegration.
(H_1): The presence of organizational support systems (e.g., flexible hours, counseling, peer support) significantly facilitates the workplace reintegration process.
3:(H_0): Employees undergoing workplace reintegration do not experience a noticeable improvement in their psychological well-being.
(H_1): Employees experience significant improvement in psychological well-being (such as reduced stress and increased self-efficacy) following successful workplace reintegration.

Literature Review
The process of workplace reintegration has been widely studied in the context of occupational health, psychological recovery, and employee development. Existing literature supports the idea that reintegration, when handled

thoughtfully, promotes not just a return to employment but also significant personal growth and psychological resilience.

1. **Williams & Westmorland (2013)** conducted a systematic review on reintegration following illness and emphasized the complex interplay between individual readiness, workplace culture, and organizational policies. Their research highlighted that reintegration is often hindered by a lack of communication, inflexible work environments, and insufficient support systems. They argued for a personalized and structured reintegration plan to ensure success.
2. **Schultz & Gatchel (2016)** in their comprehensive *Handbook of Return to Work*, presented a multi-disciplinary perspective, emphasizing medical, psychological, and workplace dynamics. They identified return-to-work outcomes as being highly dependent on organizational flexibility, employee motivation, and the presence of early intervention systems. They also stressed the value of case management and coordinated care.
3. **Tiedtke et al. (2012)** explored the emotional dimension of reintegration in their qualitative study on breast cancer survivors. The findings indicated that despite physical recovery, many individuals felt emotionally vulnerable and insecure about returning to work. Psychological readiness and workplace sensitivity were found to be crucial to restoring professional confidence.
4. **Brouwer et al. (2010)** studied perceived work attitude, self-efficacy, and social support across various health conditions. Their research confirmed a strong positive correlation between perceived social support and successful reintegration. They found that self-efficacy—the belief in one's ability to manage challenges—was a major predictor of reintegration success and long-term personal growth.
5. **Clarke & Cooper (2004)** focused on stress management in the workplace and outlined reintegration as a high-stress event. They proposed proactive stress-reduction strategies and advocated for leadership training to better support returning employees. Their work underscored the importance of a psychologically safe workplace environment in ensuring employee retention and development.

Collectively, these studies emphasize that workplace reintegration is most successful when approached holistically. Emotional preparedness, organizational support, and structured transition programs play critical roles in not only bringing employees back to work but also in enhancing their overall growth and long-term performance.

Conclusion

Workplace reintegration is more than a logistical challenge; it is a transformative experience that can catalyze personal growth. Organizations that offer structured reintegration programs contribute not only to employee retention but also to professional development and mental well-being. The study reinforces the value of empathy, adaptability, and continuous support in shaping successful return-to-work experiences. Reintegration—when handled effectively—becomes a pathway to emotional strength, productivity, and lasting career growth.

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Impact Of Trending E-Commerce on Consumers Buying Behaviour

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Abstract:
The digital era has transformed the way we live, work, and shop. E-commerce is a prime example of this shift, offering numerous benefits like convenience, global reach, time saving, availability of a range of products, competitive pricing and lots of more. The growth of e-commerce is a result of the power of digital platforms in transforming industries and revolutionizing the way we live and do business. We all are living in the digital era. For all things we usually use digital platforms as it is more convenient. Study of consumer behavior as well as study of trending e- commerce is essential for business success. This study will be helpful to explore multiple facets of e-commerce and its impact on consumer behavior. By analyzing customer buying patterns and finding out personalization and customization techniques, businessmen can create their own methods and generate a flawless shopping experience for their consumers.

Key words: Digital era, E- Commerce, Consumer Behavior, shopping

Introduction:

I) E-Commerce

E-commerce (electronic commerce) refers doing business by using the electronic gadgets and internet. Buying or selling goods and services which are conducted with the help of online platforms. E-commerce facilitates mobile commerce, EFT, online marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection system etc.

Defining E-commerce

The concept of Electronic Commerce also known as e-commerce was coined and first employed by Robert Jacobson.

Basically, e-commerce transactions mean the purchase of goods (for example we purchase cloths, toys and other necessary tangible products from meesho, Flipkart, Amazon etc.) or services such as we download music, online Doctor consultation etc).

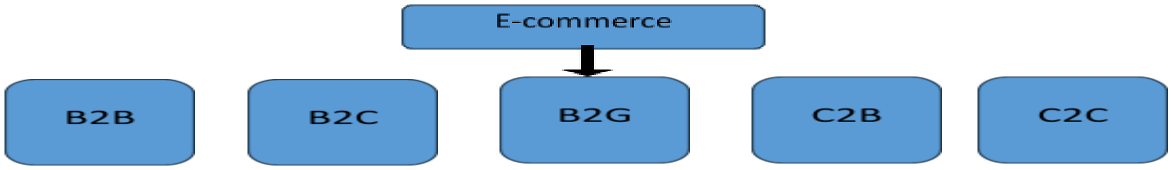
E-commerce includes 3 main area:

- Online retailing
- Electronic Markets ● Online auctions.
- E-commerce is done by electronic tools. The main plus point of e- commerce is that it allows customers to purchase online from home 24*7 which helps to save time and money, another benefit is that for payment we also don't need to go to a shop. We can do online payment as well which is convenient for all working people.

Some other benefits of e- commerce includes:

- Retail sale through online methods:
- Retail online trading is in form nowadays as it is more convenient in today's busy lifestyle. It is beneficial for both customers as well as for sellers. It can be done through websites or mobile apps.
- E- commerce facilities participation in marketplace option by business -to – consumers or consumer -to – consumers sales
- Another important benefit of e-commerce is it helps to collect and use demographic data with the help of web contacts and social media.
- Business 2 business data can be exchanged electronically.
- E- commerce facilitates easy marketing operations as well. Sellers can easily reach their prospective with the help of email or fax or with other new digital marketing tools like posting shoppable posts on Instagram, Facebook, whatsapp etc.
- Pre-tail also known as pre- commerce, pre-launch facilities are also available in e- commerce where sellers can introduce his product online before actual launch to know the list of interested people in advance.

There are five important group of E-commerce:



- Business to Business (B2B)
- Business to Consumer (B2C)
- Consumer to Consumer (C2C)
- Consumer to Business (C2B)
- Business to Government (B2G)

II) CONSUMER BUYING BEHAVIOUR (CBB)

Consumer buying behavior is nothing but process which start from recognizing a wants or need to the post-purchase. It is decision-making processes if person who are going to purchase products or services. It includes everything from pre- purchase decisions to the post-purchase evaluation and future repurchase or disposal of the product. Studying consumer buying behavior is very necessary for businesses so that they can create marketing strategies properly and according to the needs of customers.

Stages in consumer buying behavior are as follows:

- **Process**:
- CBB is a process which includes various things such as searching information about a product, finding out and evaluating competing brands, purchase decisions and evaluation after taking purchase decision.
- **Decision-Making:**
- Decision making involves deciding the final product for fulfilling the needs. Appropriate products can be selected by giving answers to some basic questions such as what to purchase, why to purchase, how to purchase and how much to purchase etc.

Importance for Businesses:

- Knowing and understanding consumers' behavior and how they make purchase decisions is very crucial for every businessman because accordingly they can frame their strategies to serve customers. Businessmen can customize their products according to the needs of customers if they study the behavior of consumers.
- **Influencing Factors:**
- There are some influential factors which affect the behavior of consumers. Factors include psychological factors which are related to the mentality of consumers, social factors which include surrounding peoples like family members, friends etc. Cultural factors such as value and beliefs as well as economic factors such as income of consumers and spending habits.
- **Types of Behavior:**
- Every consumer is different in his own ways and therefore the behavior of every consumer is different. Level of involvement of consumers is dependent on the level of risk related to that purchase decision. For earrings to make a good profit there is need to know different behavior of consumers so that it will be easy for businesses to serve their valuable customer according to their requirements. Marketers are framing their strategies according to the behavior of customers only.

a. **Extended / Slow decision making –**
These are the less aware consumers, which means they don't have enough knowledge of the product and therefore take a long time for decision making. These types of consumers first Collect information about products and then after doing comparison with alternatives go for final division.

b. **Limited or quick decision making –**
These types of customers are opposite to extended decision makers as they don't take much time for taking decision. They already know what they want and therefore only take time for selecting the best form of variety of products available with them.

c. **Regular/ habitual buyer's behaviour –**
These are customers who love to buy specific brand products and therefore we can say these are the most loyal customers. They become regular customers of a particular brand after trying different brands and once they become loyal they didn't switch to another brand easily

d. **Variety lovers buying behavior –**
These types of customers are totally opposite from regular customers as they are not loyal towards any specific brand. They are variety lovers. They love to try new arrivals in the market.

RESEARCH PROBLEMS

The rapid growth of e-commerce has transformed the way consumers shop, yet there is limited understanding of how online platforms influence consumer buying behavior. Existing research has focused on general trends and demographics, but there is a need for more nuanced insights into the factors driving consumer purchasing decisions in e-commerce. This study aims to investigate the impact of e-commerce on consumer buying behavior, addressing the research question: 'What are the key factors influencing consumer purchasing decisions in e-commerce platforms?'"

OBJECTIVE:

Every study has some objectives. Quality of research is dependent on framing of objectives.
This research is based on the impact of trending E-commerce on the behaviour of consumers.
Following are some objectives of this study.

1. To find out whether consumers are satisfied with e-commerce or not.
2. To understand the effect of E-commerce on consumer buying behaviour.
3. To identify challenges faced by consumers in e-commerce.
4. To develop strategies for improving consumer experience in e-commerce

SIGNIFICANCE:

E-commerce plays a very crucial role in consumer buying behaviour. Shopping by using electronic media is beneficial for both i.e. for customers and for businesses as well.

- **Benefits to consumers:**
- Enhance customer experience
- Increase sales
- Easy exchange/refund if required
- Easy to decide target market etc.

Benefits to businesses

- 24*7 available
- Feedback form other consumers
- Free home delivery

SCOPE:

The scope of this research is as follows

- It helps to analyze the way consumers make online purchasing decisions.
- It helps to identify the factors that influence online buying behaviour of consumers
- It helps to examine the impact of online feedback, ratings, and recommendations on consumer purchasing decisions.
- It also helps to understand demographic factors which affect purchase decisions of online consumers.
- If help to find out the role of ecommerce in the development of the e commerce industry.
- This study will also be useful to policymakers to frame effective strategies for and will also beneficial to stakeholders

STRATEGIES TO IMPROVE SATISFACTION LEVEL OF E- CUSTOMERS

- **Enhance Experience of Customers -**
  Customers experience can be enhanced by providing some facilities to e- customers kike personalization, Customers friendly website or mobile apps, quick and easy shipping.

- **Build Trust and Credibility-**
  Trust of e- customers can be built by clear and transparent communication, genuine feedback and easy and secure payment methods.

- **Improve Customer Support-**

Customers can be attracted towards online shopping than offline by providing necessary support to them lime multi channel support, and responsive support team.

- **Continuous improvement –**
  Continuous improvement is one of necessity for growth of any business. E- marketers can improve themselves by collecting regular feedback, analysing collected data, and by updating themselves from time to time.
  By using these strategies, businessmen can improve the satisfaction level of customers, create loyalty, and bring long-term success in e-commerce.

METHODOLOGY:

This study is based on a secondary research design, analyzing existing literature on the impact of e-commerce on consumer buying behavior. A comprehensive search of academic journals, books, and reports was conducted using relevant keywords and databases. The search strategy included inclusion criteria such as peer-reviewed articles and publication. While this study relies on existing research, limitations include potential biases in the sources and the lack of primary data collection."

CONCLUSION:

E-commerce has revolutionized the business world, driving a 360-degree transformation that has redefined the way business' function and engage with their customers, leading to a powerful force reshaping the industry. It plays an important role in making an entire modern economy, which has a huge potential and is basically changing the method of doing businesses. It is said that electronic commerce will become a big industry in the future and shopping by using different online apps is now becoming a very important part of the customers daily life to meet their unending necessities and that too in an easier way. Online shopping is growing nowadays and is becoming a fashion. Most of the consumers of our country are attracted towards online shopping as seen by the research because of the value proposition it also provides facilities to a customer such as convenience, 24x7 shopping, doorstop free delivery, easy exchange or refund, a variety of product range and the ever-expanding variety of unique and unusual gift ideas as well as increased consumer confidence in shopping on the internet is increasing. In essence we can say that most of the customers are very satisfied with e-commerce and therefore they are switching more from offline shopping to online. The E-commerce industry is also growing day by day. The only problems faced by e customers are lack of personal touch and sometimes delay in delivery.

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Transforming Education with AI: A Review of Adaptive Learning Platforms and Their Impact

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Abstract
The integration of Artificial Intelligence (AI) into education has given rise to adaptive learning platforms, transforming traditional teaching methods into dynamic, personalized learning experiences. These platforms utilize data analytics and machine learning algorithms to cater to individual learner needs, enhancing engagement, retention, and educational outcomes. This paper reviews the evolution of adaptive learning platforms, their benefits, challenges, and real-world applications, and examines their impact on education's future. The research highlights how AI-driven solutions are bridging educational gaps while addressing ethical and social concerns surrounding technology's role in learning environments.

Key words: Artificial Intelligence (AI), Society, Education, Adaptive learning Platforms.

Introduction
Education, one of the most crucial pillars of society, has undergone numerous transformations over centuries. The rise of Artificial Intelligence (AI) represents a paradigm shift in how education is delivered and consumed. Adaptive learning platforms, powered by AI, stand at the forefront of this revolution, offering personalized learning experiences tailored to the unique needs of each student.
In this paper, we explore the transformative role of AI in education, with a specific focus on adaptive learning platforms. We will analyze their functionality, benefits, challenges, and real-world implications, offering a balanced perspective on their contribution to the educational landscape.

1. Adaptive Learning Platforms: An Overview
1.1 What Are Adaptive Learning Platforms?
Adaptive learning platforms are AI-driven systems that adjust content, pace, and learning strategies based on individual student performance and behavior. They use algorithms to analyze data, such as quiz results, interaction patterns, and time spent on tasks, to create a customized learning journey.
1.2 How They Work

- **Data Collection:** Platforms gather information about student progress, preferences, and challenges.
- **Content Recommendation:** AI suggests personalized resources, activities, or assessments based on the data.
- **Real-Time Feedback:** Students receive instant insights to correct errors and understand concepts better.
- **Continuous Adjustment:** As students engage with the platform, their learning paths are dynamically adjusted.

1.3 Examples of Adaptive Learning Platforms

- **DreamBox Learning:** Focuses on K-8 mathematics, offering personalized exercises based on student performance.
- **Knewton Alta:** Provides higher education adaptive learning content in subjects like mathematics and science.
- **Duolingo:** An AI-powered language learning platform that adapts lessons based on user progress and proficiency.

2. Benefits and Transformations in Education
2.1 Personalization at Scale
One of the most significant advantages of adaptive learning platforms is their ability to provide individualized education at scale. Unlike traditional classroom settings where teachers struggle to cater to diverse needs, these platforms ensure that every student receives a tailored learning experience.
2.2 Enhanced Engagement and Retention
Interactive content and real-time feedback keep students motivated and engaged. Studies show that personalized learning leads to better retention and understanding of concepts.
2.3 Bridging Educational Gaps
AI-driven platforms address learning disparities by offering resources to underserved communities, breaking geographical and economic barriers. For example, platforms like Khan Academy provide free, personalized lessons to students worldwide.
2.4 Teacher Support

Rather than replacing educators, AI acts as an assistant, helping teachers identify struggling students, suggest interventions, and automate routine tasks like grading.

3. Challenges and Limitations

3.1 Data Privacy and Security

Adaptive learning platforms collect vast amounts of data, raising concerns about student privacy and the potential misuse of sensitive information.

3.2 Inequality in Access

While AI can bridge gaps, it can also exacerbate inequalities if access to technology and the internet is not universally available.

3.3 Dependence on Technology

Over-reliance on AI tools may hinder the development of critical thinking and problem-solving skills, as students might focus too heavily on automated solutions.

3.4 Lack of Emotional Connection

AI-driven platforms lack the human touch, which is often crucial in fostering creativity, emotional intelligence, and empathy in learners.

4. Case Studies: Real-World Applications of Adaptive Learning Platforms

4.1 Dream Box Learning

Dream Box has revolutionized elementary education by offering a self-paced, gamified learning environment. Teachers report improved math proficiency in students using the platform.

4.2 Smart Sparrow

This platform collaborates with universities to design personalized courses. One pilot study at Arizona State University demonstrated increased student retention rates after implementing Smart Sparrow's adaptive learning tools.

4.3 Duolingo

Duolingo has democratized language education, enabling millions of users to learn languages for free. Its adaptive algorithm ensures learners focus on weak areas, improving fluency.

5. Ethical Considerations and Future Trends

5.1 Ethical Considerations

AI in education must balance technological innovation with ethical responsibility. Platforms must prioritize student privacy, transparency, and accountability.

5.2 Future Trends

- **Hybrid Learning Models:** Integrating AI with traditional teaching to create blended learning environments.
- **Lifelong Learning:** Adaptive platforms for adult education and professional development.
- **AI Tutors:** Intelligent virtual assistants capable of guiding students through complex subjects.

Conclusion

Adaptive learning platforms represent a monumental shift in the education sector, offering personalized and scalable solutions to longstanding challenges. While these technologies hold immense promise, their deployment must be carefully managed to address ethical concerns and ensure equitable access. By leveraging the strengths of AI and fostering collaboration between educators and technology, we can unlock the full potential of adaptive learning platforms, paving the way for a more inclusive and effective educational future.

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The Future of Education: AI and Automation as Transformative Tools

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Abstract
Artificial intelligence (AI) and automation are reshaping the landscape of education, making it more personalized, efficient, and accessible. AI-powered tools, such as virtual tutors and intelligent learning systems, can adapt to individual student needs, enhancing the learning experience. Automation helps streamline tasks like grading and scheduling, allowing educators to dedicate more time to teaching. Despite these advantages, challenges remain, including concerns about data privacy, biases in AI systems, and unequal access to technology. This paper explores the impact of AI and automation on education, highlighting their benefits, challenges, and future trends while proposing strategies to use these tools equitably and effectively.

Introduction

Education holds a vital place in society, continually evolving to incorporate innovative tools and technologies, from traditional chalkboards to modern computers. Today, artificial intelligence (AI) and automation are opening up new possibilities in education, addressing challenges such as unequal access to quality education and the increasing demands on teachers' time.

AI tools are designed to adapt to each student's unique learning style. For instance, they can provide targeted support in areas where a student struggles or adjust lesson difficulty based on individual comprehension. Automation complements this by taking over repetitive tasks, such as grading assignments and managing class schedules, freeing teachers to focus on personalized student engagement.

In regions with limited educational resources and a shortage of teachers, AI proves particularly valuable. It can deliver online lessons to remote communities where schools are scarce. Furthermore, AI-powered tools like language translation and text-to-speech applications make education more accessible by overcoming language barriers that have historically excluded many from formal learning opportunities.

However, these advancements are not without challenges. Concerns about student data privacy, biases in AI algorithms, and unequal access to technology highlight the need for careful implementation. This paper examines the transformative role of AI and automation in education, addressing both the benefits and challenges, while exploring ways to harness these tools responsibly and inclusively.

Understanding AI and Automation in Education

AI and automation are transformative technologies that enable machines to perform tasks intelligently and autonomously, requiring minimal human intervention. In education, these technologies are enhancing both teaching and learning experiences. Here's a closer look at their applications:

1. AI in Learning

AI tools excel at personalizing the learning process by tailoring lesson content and pacing to each student's needs. For instance, platforms like Khan Academy leverage AI to recommend lessons based on individual performance. Similarly, adaptive learning systems like DreamBox Learning adjust math exercises in real time, enabling students to progress at their own pace. Moreover, AI analyzes performance data to identify areas where students need additional focus, guiding both learners and educators.

2. AI in Administration

Automation significantly streamlines administrative tasks, such as tracking attendance, scheduling classes, and managing admissions. These tools save time and minimize human errors. For example, AI-driven systems can handle the scheduling of parent-teacher meetings with precision, ensuring seamless coordination without manual effort.

3. Supporting Teachers

AI-powered tools enhance teachers' efficiency by automating time-consuming tasks such as grading, lesson planning, and monitoring student progress. Platforms like Gradescope, for instance, allow educators to grade large volumes of exams quickly while identifying patterns in student errors, which can inform and improve subsequent teaching strategies.

4. **Access to Education**

In underserved or remote areas, AI platforms are bridging the education gap by delivering quality resources. These tools can translate lessons into local languages or provide self-paced video lessons, making education accessible to more learners. Initiatives like Pratham utilize AI to offer foundational education to children in rural regions, addressing challenges like inadequate infrastructure and a shortage of trained teachers.

Through these diverse applications, AI and automation are reshaping education, making it more inclusive, efficient, and effective.

Key Benefits of AI and Automation in Education

1. Personalized Learning

Students have unique learning styles and paces, and AI enables lessons to be tailored to these differences. For example, an AI system might provide extra practice for a student struggling with math concepts while allowing advanced learners to progress more quickly. Virtual tutors like Carnegie Learning offer customized feedback, helping students address specific areas of difficulty effectively.

2. **Saving Time for Teachers**

By automating repetitive tasks such as grading, attendance tracking, and maintaining records, AI allows teachers to devote more time to engaging with students and facilitating deeper learning. Additionally, AI supports lesson planning by analyzing curriculum objectives and recommending suitable materials, helping educators prepare more efficiently.

3. **Improving Accessibility**

AI plays a crucial role in making education accessible to underserved communities. Online platforms powered by AI can deliver high-quality lessons to students in remote areas. Moreover, AI tools facilitate multilingual classrooms by translating content in real-time, enabling learners from diverse linguistic backgrounds to access education together.

4. **Helping Students with Special Needs**

AI-driven tools significantly enhance learning experiences for students with disabilities. For example, speech-to-text technology supports students with hearing impairments, while text-to-speech applications aid visually impaired learners by reading aloud. Apps like Proloquo2Go empower non-verbal students to communicate effectively, fostering inclusion and enabling them to participate more actively in their education.

Through these benefits, AI and automation are not only transforming traditional learning environments but also creating opportunities for a more inclusive, efficient, and student-centered educational system.

Challenges in Using AI and Automation in Education

1. Data Privacy

AI tools rely on collecting student data to tailor educational experiences. However, improper handling of this data can lead to significant privacy concerns. Schools must adhere to strict data protection regulations and ensure student information remains secure. Moreover, developers should be transparent about their data collection, storage, and usage practices to build trust and accountability.

2. **Bias in AI Systems**

Since AI tools learn from data, any biases present in the training datasets can result in unfair outcomes. For example, a biased AI grading system might unintentionally favor certain demographics over others. To address this, regular audits and evaluations of AI systems are essential to identify, mitigate, and correct biases, ensuring fair and equitable outcomes for all students.

3. **Cost and Access**

The cost of AI tools and the lack of necessary infrastructure, such as internet access or devices, can exacerbate the educational divide between affluent and underprivileged schools. This digital disparity prevents equal access to the benefits of AI-driven education. Governments, educational organizations, and private stakeholders must collaborate to develop affordable solutions and invest in infrastructure to bridge this gap.

4. **Resistance to Change**

Teachers and school administrators may resist adopting AI technologies due to unfamiliarity, fear of job displacement, or skepticism about the benefits. Effective training programs can help educators understand the potential of AI tools and integrate them into their teaching practices. Emphasizing the complementary nature of AI—enhancing rather than replacing traditional teaching—can further reduce resistance.

By addressing these challenges proactively, educators and policymakers can harness the full potential of AI and automation while ensuring equitable, secure, and effective educational practices.

Case Studies: How AI and Automation Are Being Used in Education

1. Duolingo for Language Learning

Duolingo harnesses the power of AI to create a personalized language learning experience. The app dynamically adjusts the difficulty of lessons based on the user’s performance. For instance, if a learner struggles with specific vocabulary, Duolingo provides targeted exercises and additional practice to reinforce understanding, ensuring progress at an individualized pace.

2. Georgia State University

Georgia State University employs AI to support student success by identifying those at risk of dropping out. By analyzing key indicators such as attendance patterns, grades, and course engagement, the AI system generates early alerts for counselors and administrators. This proactive approach enables timely intervention, offering support that has contributed to improved retention and graduation rates.

3. **Pratham in India**
Pratham utilizes AI to bring foundational education to children in remote and underserved areas of India. The platform delivers lessons in regional languages, adapting to each child's learning speed and comprehension level. This personalized approach ensures that even first-generation learners, who might lack prior educational exposure, can effectively grasp basic concepts and stay engaged in their education. These case studies illustrate how AI and automation are addressing diverse challenges in education, from enhancing learning experiences to improving retention and expanding access in underprivileged areas.

How to Make AI and Automation Work Better in Education

1. **Train Teachers**
Empowering teachers with the knowledge and skills to use AI tools is crucial for effective implementation. Organizing workshops, certification programs, and training courses can help educators understand the functionality and benefits of these tools. By integrating AI into their teaching methods, teachers can enhance student engagement and streamline their own tasks, reducing their workload.
2. **Focus on Ethical AI**
To ensure fairness and inclusivity, AI systems must be designed and deployed with ethical considerations. Developers should prioritize eliminating biases in algorithms and avoiding discrimination against any student group. Partnerships between technology companies, educators, and policymakers can contribute to building AI systems that align with ethical guidelines and educational goals.
3. **Make Technology Affordable**
Cost remains a significant barrier to adopting AI tools in education. Governments, NGOs, and private organizations should work together to subsidize AI solutions, especially for schools in underserved regions. Providing free or low-cost training programs and investing in infrastructure can further help bridge the digital divide, ensuring equitable access to AI-driven education.
4. **Protect Data**
Safeguarding student data is critical for building trust and complying with privacy regulations. Schools should adopt robust security measures and implement secure systems for storing and managing sensitive information. Regular audits and adherence to data protection laws can reinforce transparency and accountability, assuring parents and students of their privacy.

By addressing these areas, the integration of AI and automation in education can become more effective, equitable, and widely accessible, creating a better learning environment for all.

Future Trends in AI and Automation in Education

1. **Lifelong Learning**
AI is set to transform lifelong education, making it more accessible and personalized. Individuals will be able to acquire new skills seamlessly throughout their careers or for personal growth. For example, platforms like Coursera and edX already leverage AI to recommend courses tailored to users' professional aspirations and learning preferences, fostering continuous education for all age groups.
2. **Virtual Reality (VR) in Classrooms**
The integration of AI and VR will revolutionize traditional teaching methods by creating immersive learning environments. Imagine students virtually exploring ancient pyramids to learn history or navigating a 3D model of the human body for biology lessons. This combination will make learning more interactive, engaging, and memorable, enhancing students' understanding of complex concepts.
3. Collaborative Tools
Advanced AI tools will enable seamless collaboration between students and teachers, regardless of physical location. Features like real-time language translation will facilitate global classroom exchanges, breaking down linguistic barriers and fostering cultural understanding. These tools will make remote and hybrid learning more dynamic and inclusive.
4. **Better Access**
Expanding access to AI-driven education will be a priority for governments and organizations. Investments in technology infrastructure, particularly in underserved areas, will help ensure that every child has access to quality education. Collaborations with non-profits and community initiatives will further drive efforts to democratize learning opportunities, bridging the educational divide.

These trends highlight the transformative potential of AI and automation in education, paving the way for more inclusive, innovative, and lifelong learning experiences.

AI and automation hold immense potential to revolutionize education. They can personalize learning experiences, expand access to quality education, and streamline administrative tasks, allowing teachers to focus on student engagement. However, to harness these benefits fully, it is crucial to address challenges such as data privacy concerns, biases in AI systems, and the digital divide.

By implementing these technologies responsibly and inclusively, we can build a future where every student, regardless of their background, has access to the tools and opportunities they need to thrive. Achieving this vision requires collaboration among educators, policymakers, and technologists, ensuring that AI and automation serve as a force for equitable and transformative change in education.

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Sustainable Practices in Global Supply Chains-Key Strategies and Challenges

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ABSTRACT

In the era that is characterized by conditions like climatic change, resource scarcity and increased expectations of stakeholders, the need for integration of sustainability in global supply chains has become more essential and strategic than voluntary.

The research paper aims to explore the evolving sustainable practices within international supply chains, emphasizing on the concepts like environmentally responsible sourcing, circular economy, ethical labour practices, use of advanced technology like IoT, artificial intelligence etc to enhance supply chain transparency and efficiency. The study also explores the complex challenges faced by organizations in embedding sustainability across diverse supply chains, encompassing high costs, limited compliance, and so on. The research presents a multi-dimensional perspective on the evolving nature of sustainable supply chain management.

Keywords: Sustainable supply chains, environmentally responsible sourcing, Circular economy, Ethical labour practices, Internet of things (IoT), Artificial intelligence, Supply chain transparency, multi-dimensional perspective, sustainable supply chain management.

INTRODUCTION:

In recent years, the Global economy has become increasingly interconnected, which has changed the way businesses operate, putting more pressure on them to act responsibly and sustainably across the processes in supply chains. Environmental degradation, climate change and scarcity of natural resources have prompted governments, stakeholders as well as consumers to demand greater accountability from businesses. Hence, Sustainability is no longer a secondary concern but, a core part of global supply chain management. Organizations are not only expected to deliver efficiency and profitability but also deeply consider environmental protection, ethical labor practices and social equity.

The research paper explores the strategies that companies can implement to promote social responsibility while managing their supply chains. Key initiatives include sustainable sourcing, integration of circular economy, reduction of carbon footprint, following ethical labour standards, waste reduction and deployment of digital technologies like AI, to achieve transparency and efficiency in their supply network.

However, the research will not neglect the challenges faced by the companies in integrating sustainable development goals into their supply chain operations. These include financial constraints, problem of compliance by suppliers, internal resistance and so on. Thus, the research provides a comprehensive analysis of opportunities as well as barriers of sustainable supply chains.

This study would contribute to valuable knowledge to the field of corporate sustainability by identifying practical strategies and challenges in implementing sustainable practices across the international supply chains. It would provide understanding on how the supply chains can be developed to be both ethically sound and environmentally responsible.

STATEMENT OF THE PROBLEM:

Although Sustainability is increasingly recognized and demanded by the stakeholders and consumers, many organizations face difficulties in undertaking sustainable practices across complex supply chains. Challenges such as cost constraints, compliance issues, etc hinder effective implementation. This study seeks to explore these challenges and identify key strategies that facilitate a shift towards environmentally and ethically sound supply chains.

REVIEW OF LITERATURE:

- **Ernest Mugoni, James Kanyepe and Marian Tukuta (2024):** The study makes deep research on Sustainable Supply Chain Management Practices (SSCMPS) and proves that these have positive impacts on environmental performance. It highlights the improved environmental outcomes across various industries.
- **Ehsan Shekarian, Behrang Ijadi, Amirreza Zare and Jukka Majava (2022):** The article provides a detailed analysis of sustainable practices, examining their application across various industries including, manufacturing, textiles, automotive and food etc. It also presents the classification of sustainable practices in supply chains. This study aims to offer advantages for practitioners and researchers to transform a supply chain into an improved version in the bigger picture.

• **David Luther (2020):** brings a simplified understanding in his article "Supply Chain Sustainability" about the importance of Sustainability in the Supply chain. He emphasizes that integrating sustainable practices in supply chains is vital for reducing resource consumption, minimizing waste and improving positive community relationships. He also addresses some trends and challenges in supply chain sustainability, including the growing pressure from consumers and stakeholders, increasing importance of digital technologies, operational constraints etc.

• **Vishnu Kambily Vijayan (2022):** The article highlights several obstacles organizations face in implementing sustainable practices, such as complex multi-tiered supply chains, high costs of implementation and lack of standardised frameworks. It also points to resource limitations, unsuitable technologies and human factors like resistance to change as main barriers. It also emphasizes on the need for supplier collaboration, enhanced transparency and other strategies to overcome the challenges.

• **Veronica H. Villena and Dennis A. Gioia (2020):** from Harvard Business review stresses the need for companies to expand their sustainability efforts beyond direct suppliers to include those further down the chain. The article advocates for multinational corporations (MNCs) to enforce sustainability at all levels of the supply chain ensuring that the sustainability practices are integrated throughout, rather than just with their immediate suppliers, to effectively address risks and promote consistency across the entire supply network.

OBJECTIVES OF THE STUDY:

1. To analyse the growing strategic role of sustainability in global supply chain management.
2. To identify the key strategies that can be adopted by businesses to integrate the sustainability into their supply chain operations.
3. To examine the key obstacles that can hinder the integration of sustainable practices into supply chain operations.
4. To evaluate the impact of digital technologies in advancing sustainable supply chain practices.
5. To assess how sustainable supply chains can enhance organizational performance.

HYPOTHESES OF THE STUDY:

Hypothesis 1:

H_o: Adopting Sustainable practices in supply chains does not significantly contribute to addressing environmental problems.

H_1: Adopting Sustainable practices in supply chains significantly contributes to addressing environmental problems.

Hypothesis 2:

H_o: The challenges faced by companies in adopting sustainable practices in global supply chains do not hinder the adoption of these practices.

H_1: The challenges faced by companies in adopting sustainable practices in global supply chains hinder the adoption of these practices.

Hypothesis 3:

H_o: Adopting sustainable practices does not result in long-term economic benefits for companies.

H_1: Adopting sustainable practices does not result in long-term economic benefits for companies.

RESEARCH METHODOLOGY:

This study employs a qualitative research methodology using secondary data sourced from existing academic literature and credible publications. A systematic review of journal articles, reports and relevant online sources was conducted to explore sustainable practices, strategies, and challenges. Sources were chosen based on their relevance, reliability and recency. The collected data was analyzed to identify common patterns and insights across the literature.

DATA ANALYSIS:

Global Supply Chain Management refers to the strategic coordination of procurement, production, transportation and distribution processes across international borders. It focuses on optimizing the flow of goods, information, and capital among a network of global partners from raw material suppliers to end consumers.

Traditionally, the supply chain management prioritized profitability, but the growing environmental concerns and social accountability has transformed the dynamics of global supply chain operations. "For companies all around the world, supply chain sustainability is now a primary concern with many organisations committed to achieving net zero by 2050". (James Darley, 2024). It has become a strategic priority for corporations owing to regulatory pressure, increased expectations of stakeholders and obligations towards the environment.

However, the transition to sustainable supply chain operations does not come without its difficulties. Some of the key challenges are explored below:

Challenges faced by companies while integrating sustainable practices in Supply Chain Operations:

Implementation of efficient supply chain operations is a complex task that involves several challenges, including lack of visibility across supply chain, high costs involved in integrating sustainability principles, hurdles in technological integration, inconsistent regulatory requirements across nations and resistance to change. Modern supply chains are highly complex, and as Gary Lynch puts it, "Supply chain management is about managing relationships – it's not just about moving boxes", Companies have to work on obtaining supplier co-operation, which becomes difficult specially when they give importance to speed and saving costs. Additionally, the adoption of new technologies such as blockchain and energy efficient tools and vehicles as discussed above can also present hurdles, particularly when legacy systems are incompatible with modern digital solutions, and also due to high costs, thus, balancing between costs and sustainability goals becomes difficult. Lastly, resistance to change at different levels further complicate the adoption of innovative supply chain solutions. "It is a common human instinct to exhibit resistance to adopting something unfamiliar to them." (Vishnu Kambily Vijayan, 2022), this fear of the unknown, job insecurity, lack of technical skills, or simply discomfort with new processes can lead to such resistance. In such cases, Proper Training, communication, and involving employees in the transformation process will help in building trust and encouraging adoption. Overcoming all these challenges requires a holistic strategy that blends advanced technology, strong leadership, workforce engagement, and cross-functional collaboration.

Key Strategies for Sustainable Global Supply chain Operations:

a) Eco-Friendly Packaging

Many companies are replacing traditional plastic packaging with biodegradable, recyclable, or reusable materials. This helps reduce pollution and waste that ends up in landfills or oceans. By using sustainable packaging, businesses can lower their environmental impact, meet consumer expectations, and save money, thus bringing in economic benefits in the long run.

b) Prioritizing Local Sourcing of Materials:

Sourcing materials and products from local suppliers helps to reduce the distance goods have to travel, cutting down on fuel usage and greenhouse gas emissions. It also supports regional economies and can help avoid global supply chain disruptions. Local sourcing is better for the environment and makes the supply chain more resilient.

c) Improving Energy Efficiency in Logistics:

Companies are adopting more energy-efficient ways to store and move products, such as using electric or hybrid delivery vehicles, optimizing transportation routes, and using energy-saving technology in warehouses. These changes help reduce operating costs and lower the carbon footprint of moving goods from factories to customers.

d) Conduct Supplier Sustainability Audits:

"Sustainable Supply Chain Management (SSCM) begins with the selection of suppliers who adhere to ethical labour practices, fair wages and responsible resource extraction." (Tafura Khatun, 2024). Businesses should regularly review and evaluate their suppliers to make sure they follow ethical and environmental standards. This includes checking how suppliers treat workers, manage waste, use energy, and follow local laws. These audits will help companies identify risks and maintain a responsible supply chain, ensuring that every part of their production process supports long-term sustainability.

e) Ethical Labour Practices:

Businesses must take steps to make sure workers in all parts of their supply chains are treated fairly. There should be no child labour, safe working conditions, fair wages, and respect for workers' rights. By committing to ethical labor practices, companies build trust with workers and customers, avoid legal risks, and contribute positively to society.

f) Use Digital Tools for Transparency and Monitoring

"Digital tools such as blockchain and IoT (Internet of Things) are widely used to improve traceability and transparency in supply chains. Blockchain technology, for example, is employed to create immutable records of transactions, enabling firms to track the origin and movement of materials throughout the supply chains." (Samantha Reynolds, 2024). This transparency helps identify inefficiencies, ensure compliance with sustainability standards, and build customer trust by showing where and how products are made.

CONCLUSION:

As the Global Supply chains become more and more complex, adopting a sustainable chain of operations is getting no longer an option but a necessity. This research brings a comprehensive overview of what sustainability in global supply chains involves, why it is necessary, how it can be achieved, and when it is most crucial, emphasizing the steps organizations must take to become more responsible. While the shift towards sustainability will be surrounded by its own challenges, the efforts will surely be worthwhile. There is a need for collaboration between stakeholders, fair and efficient policies to move forward. Ultimately, sustainability should be seen as continuous process that keeps adapting to the changing needs of business, society and planet.

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Awareness and Analysis of Consumer Behaviour on Carbon Credits in the Mumbai Region

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Abstract:
As the world grapples with the pressing issue of climate change, carbon credits have emerged as a key instrument in promoting sustainable practices. This paper explores the level of awareness and behavioral patterns of consumers in the Mumbai region with regard to carbon credits. Through a survey-based approach, the study analyzes consumer attitudes, awareness levels, and willingness to engage in carbon credit programs. The findings reveal a significant gap in awareness despite growing environmental concerns and highlight the need for targeted educational and policy interventions.

Keywords:
Carbon credits, consumer behavior, environmental awareness, sustainability, Mumbai, carbon footprint

1. Introduction:
Climate change is among the most critical challenges of the 21st century, prompting nations and businesses to adopt mechanisms like carbon credits to reduce greenhouse gas emissions. Carbon credits serve as permits allowing the holder to emit a certain amount of CO_2, with one credit equal to one ton of CO_2. While businesses are the primary stakeholders, consumer participation plays a pivotal role in creating demand and ensuring the success of carbon markets.
In India, awareness of environmental sustainability is growing, especially in urban areas like Mumbai. However, the extent to which consumers are informed about and willing to participate in carbon offset mechanisms remains under-researched. This study aims to fill that gap by analyzing awareness levels and behavioral tendencies of consumers in Mumbai regarding carbon credits.

2. Objectives of the Study:
To assess the level of awareness of carbon credits among consumers in the Mumbai region.
To analyze consumer attitudes toward sustainability and carbon offsetting.
To evaluate the willingness of consumers to pay for carbon credits or carbon-neutral products.
To suggest policy measures to improve public engagement in carbon markets.

3. Methodology:
Study Area: Mumbai, Maharashtra, India
Sample Size: 300 respondents
Sampling Method: Stratified random sampling covering various age groups, income levels, and educational backgrounds
Data Collection Tool: Structured questionnaire (online and offline)
Data Analysis: Descriptive statistics, chi-square tests, and correlation analysis using SPSS

4. Data Analysis and Discussion:
Demographics:
60% Male, 40% Female
Age distribution: 18–25 (35%), 26–40 (40%), 41+ (25%)
72% had a graduate-level education or higher
Awareness of Carbon Credits:
21% had heard of carbon credits
11% understood the concept correctly
5% had actively participated in offsetting programs

Consumer Behavior:
58% showed concern for climate change
43% were willing to pay more for carbon-neutral products
Higher income groups showed more interest in carbon offsetting programs
Awareness was positively correlated with education level ($r = 0.62$, $p < 0.01$)

Barriers Identified:
Lack of information

Perceived complexity of carbon credit systems
Low visibility of carbon-neutral products in the market

5. Findings:
There is a significant lack of awareness and understanding of carbon credits among Mumbai consumers.
Environmental concern does not always translate into action, largely due to knowledge gaps.
Educated and high-income consumers are more likely to support and invest in carbon offsetting.
Better labeling, public awareness campaigns, and simplified platforms for offsetting could increase participation.

6. Recommendations:
Government and NGOs should run awareness campaigns focusing on how individuals can contribute to carbon reduction.
Businesses should highlight carbon neutrality in product labeling and marketing.
Educational institutions can integrate carbon literacy into curricula.
Encourage digital platforms that allow individuals to easily calculate and offset their carbon footprints.

7. Conclusion:
The study underscores the need for increased public education on carbon credits to harness consumer potential in mitigating climate change. With a combination of targeted outreach and policy support, Mumbai can become a leading urban center in carbon-conscious consumer behavior.

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A Research Paper on Opportunities and in Challenges of Women Entrepreneurs Maharashtra

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Abstract
Women entrepreneurship plays a vital role in the economic development of Maharashtra. With increasing government support, financial assistance, and societal shifts, women entrepreneurs are emerging across various sectors. However, they continue to face multiple challenges. This research paper explores the opportunities and challenges faced by women entrepreneurs in Maharashtra through an analytical approach, incorporating case studies, statistical data, and policy reviews. The study aims to provide recommendations for fostering a more inclusive entrepreneurial ecosystem.

Keywords
Women entrepreneurs, Maharashtra, challenges, opportunities, government policies, financial support, economic development

Introduction
The emergence of women entrepreneurs in Maharashtra is not merely a trend but a socio-economic movement, supported by a combination of government schemes, NGO-led interventions, increasing literacy, digital inclusion, and growing financial independence among women. These enterprises are not only generating employment opportunities but also fostering innovation, inclusive growth, and community development. Despite these encouraging developments, women entrepreneurs in Maharashtra continue to face a myriad of challenges ranging from financial constraints, limited access to markets, and lack of family support, to societal norms, regulatory hurdles, and gender-based discrimination. Moreover, a significant gap persists between the availability of government and institutional support and the accessibility or awareness of such resources among aspiring women entrepreneurs. Many women remain unaware of schemes tailored for them or face difficulties navigating the formalities required to avail these benefits. Additionally, issues like lack of collateral, insufficient digital literacy, and the dual burden of domestic responsibilities further hinder their entrepreneurial journey. This research paper aims to explore the dual landscape of opportunities and challenges that define the entrepreneurial journey of women in Maharashtra. It seeks to analyse the current ecosystem through both qualitative and quantitative lenses — incorporating field surveys, policy reviews, and case studies of both successful and struggling women entrepreneurs. The study not only highlights existing gaps but also offers actionable recommendations to create a more inclusive and supportive entrepreneurial environment for women in Maharashtra. Entrepreneurial activity has emerged as a significant driver of innovation, employment, and economic growth. Over the past few years, there has been a noticeable rise in the involvement of women in entrepreneurial ventures, not only at the national level but also on a global scale. This growing participation indicates a shift in societal norms and highlights the increasing acknowledgment of women's capabilities as key contributors to economic progress. In Maharashtra state known for its industrial development and forward-thinking environment women-led businesses have started to thrive in various domains such as agriculture, food processing, textile production, traditional crafts, technology, education, tourism, and service-related industries.

Objectives
1. To analyze the key opportunities available for women entrepreneurs in Maharashtra.
2. To identify the major challenges that hinder the growth of women-led enterprises.
3. To evaluate the effectiveness of government policies and support mechanisms.
4. To propose actionable recommendations for enhancing women's entrepreneurial participation.

Methodology
This research adopts a mixed-method approach, including:
- Primary Data Collection: Surveys and interviews with women entrepreneurs across Maharashtra.
- Secondary Data Analysis: Review of government reports, financial institution policies, MSME publications, and case studies.
- Comparative Analysis: A study of successful and struggling women entrepreneurs to determine success factors and barriers.

Opportunities for Women Entrepreneurs in Maharashtra

1. Government Schemes and Initiatives: The Maharashtra government, along with the central government, offers various schemes such as the Mudra Yojana, Stand-Up India, and Women Entrepreneur Development Program to support women entrepreneurs.
2. Financial Assistance: Banks and financial institutions provide loans and subsidies tailored for women entrepreneurs, reducing financial constraints.
3. Skill Development Programs: NGOs and training institutes conduct skill development programs in areas like digital literacy, financial management, and leadership.
4. Technological Advancements: Digital platforms and e-commerce have enabled women to reach wider markets, helping them scale their businesses.
5. Supportive Ecosystem: The rise of women-centric co-working spaces, mentorship programs, and business networks fosters entrepreneurship among women.
6. Emerging Sectors: Women are making strides in industries like food processing, fashion designing, tourism, and education, which have immense growth potential.

Challenges Faced by Women Entrepreneurs

1. Societal and Cultural Barriers: Traditional gender roles and societal expectations often limit women's entrepreneurial ambitions.
2. Financial Constraints: Despite government support, many women struggle to access funding due to lack of collateral or financial literacy.
3. Work-Life Balance: Managing both business and household responsibilities becomes a significant challenge.
4. Limited Market Access: Women entrepreneurs often struggle to expand beyond local markets due to inadequate marketing strategies and networks.
5. Lack of Awareness: Many women are unaware of the various government schemes and support available to them.
6. Legal and Regulatory Hurdles: Complicated business registration processes, taxation policies, and compliance requirements pose additional challenges.

Case Studies of Successful Women Entrepreneurs in Maharashtra

1. Kalpana Saroj: Founder of Kamani Tubes, a self-made entrepreneur who overcame societal barriers to become a successful industrialist.
2. Richa Kar: Founder of Zivame, an online lingerie brand that transformed the Indian retail sector.
3. Sheetal Kapoor: Entrepreneur behind Shree, a successful clothing brand that caters to women’s fashion.

Discussion and Analysis

The findings indicate that while Maharashtra offers numerous opportunities for women entrepreneurs, significant challenges persist. The gap between policy implementation and accessibility remains a key concern. Women who receive proper mentorship, financial backing, and family support tend to succeed in their ventures. However, those lacking access to networks or struggling with socio-cultural barriers face greater difficulties in sustaining their businesses.

Recommendations for Empowering Women Entrepreneurs

1. Awareness Campaigns: Conduct awareness programs to educate women about government schemes and financial assistance.
2. Financial Literacy Training: Encourage women to develop financial management skills to improve business sustainability.
3. Networking and Mentorship: Strengthen women entrepreneur networks and mentorship programs.
4. Simplified Business Processes: Reduce bureaucratic hurdles and streamline regulatory frameworks for ease of business.
5. Family and Community Support: Encourage families and society to support women entrepreneurs through education and equal opportunities.
6.Government Schemes: Awaring people about the various schemes launched for females.

Conclusion

Women entrepreneurship in Maharashtra is growing steadily, contributing to economic and social progress. While numerous opportunities exist, challenges remain. By addressing financial, social, and regulatory barriers, Maharashtra can foster a more inclusive entrepreneurial ecosystem, empowering more women to pursue and sustain their business ventures. Further research should focus on long-term policy effectiveness and the role of private sector collaboration in supporting women entrepreneurs.

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Impact of Social Expectations on Work-Life Balance

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Abstract

Balancing the responsibilities of work and life has become one of the most pressing challenges in today's fast-paced world. While time management and workload are often blamed, one crucial element is frequently overlooked: **social expectations**. These invisible pressures—from family, friends, employers, and even social media—shape how individuals behave, often pulling them away from personal goals or well-being. This paper dives deep into how such expectations influence people's daily lives and mental health, especially in the context of gender roles, cultural norms, and modern work culture. Through real-world examples and thoughtful analysis, we'll explore how society's silent rules can quietly push people off balance—and what can be done to change that.

1. Introduction

1.1 The Modern Struggle

The idea of balancing work with personal life isn't new. But for many, it has become a daily struggle, especially with blurred lines between home and office in today's always-connected world. What complicates things even more is not just workload, but the quiet pressure from others—what people expect us to do, say, or be.

Whether it's being a "perfect parent," a "committed employee," or even an "ambitious achiever," these roles come with expectations that are often unrealistic and heavy. We live in a society where being busy is worn like a badge of honor, and slowing down can be mistaken for weakness.

1.2 Purpose of the Study

This research aims to:

- Unpack how social expectations affect our ability to find balance.
- Understand how these pressures differ for men, women, and other groups.
- Share real experiences from people facing these challenges.
- Suggest practical ways individuals, companies, and communities can help ease the burden.

2. What Does Work-Life Balance Really Mean?

2.1 A Flexible Definition

Work-life balance doesn't mean splitting your day equally between your job and your home. It's about being able to give attention and energy to both areas of life in a way that feels healthy and fulfilling. For some, that may mean working longer hours but taking full weekends off. For others, it could mean working part-time and spending more time on family or personal projects.

2.2 Why It Matters

When we fail to find that balance, stress builds up. People feel overworked, disconnected from loved ones, and often experience anxiety, burnout, and even physical health issues. On the flip side, when work and life feel balanced, people tend to be more energized, satisfied, and healthier both mentally and physically.

3. The Quiet Pressure of Social Expectations

3.1 What Are Social Expectations?

Every society has certain unspoken rules about how people "should" behave. These rules often come from culture, religion, upbringing, or peer influence. They dictate what's considered "normal" or "right" and often push people into roles or routines they may not have chosen for themselves.

3.2 How These Expectations Sneak In

Social pressure doesn't always come in the form of direct criticism. It can be subtle, like:

- A mother being praised for sacrificing her career for her family, while another is judged for going back to work.
- A father being expected to work overtime while being seen as "less of a man" if he takes paternity leave.
- Colleagues raising eyebrows when someone logs off on time.
- Friends asking why you're not hustling or launching your own startup yet.

These little moments add up, shaping our choices and eroding our sense of control.

4. Gender Roles and Imbalance

4.1 Women Carrying the Double Load

Despite progress, many women still bear the lion's share of unpaid domestic work—even when they have full-time jobs. Cooking, cleaning, managing schoolwork, caring for the elderly—it's often expected without question. This "double shift" creates extra stress and reduces personal time, making balance nearly impossible.

4.2 Expectations Placed on Men

Men face different, but equally heavy expectations. They're often seen as the financial providers and are discouraged from showing vulnerability or taking on caregiving roles. A man asking for flexible hours to care for his child may be looked down upon, affecting his career progression and self-esteem.

4.3 People Outside the Binary

LGBTQ+ and non-binary individuals face unique pressures. From being expected to fit into traditional roles to dealing with workplace bias, their journey toward balance can be even more complicated. Limited legal support and lack of inclusive policies further add to the struggle.

5. Real Stories, Real Struggles

5.1 Urban Women in India

In cities like Mumbai or Delhi, many professional women describe feeling like they're constantly being pulled in opposite directions. A working mother might work until 7 PM, only to come home and start her "second shift"—helping with homework, cooking, and family responsibilities. Often, the pressure doesn't come from her partner, but from older relatives or even neighbors who comment on her choices.

5.2 Corporate Pressure in Japan

In Japan, some employees still fear being seen as lazy if they leave the office before their boss. Many people even sleep at work or take naps in cafes instead of going home. These behaviors are driven not by workload alone but by a cultural value system that prizes loyalty and effort, sometimes at the cost of health and family.

5.3 Remote Work, Real Problems

Remote work brought freedom but also created new pressures. People feel the need to be constantly available, answer emails instantly, or join video calls at all hours. The expectation of being "online" all the time—without boundaries—has increased emotional exhaustion for many.

6. Mental and Emotional Effects

Living under constant pressure to meet everyone's expectations takes a heavy toll. Some common issues include:

- **Chronic fatigue:** Always feeling tired but unable to stop.
- **Anxiety:** Fear of failing or being judged.
- **Burnout:** Complete emotional and physical exhaustion.
- **Low self-worth:** Feeling like you're never doing enough.
- **Relationship issues:** Lack of time and presence affects families and friendships.

These aren't just personal problems—they're public health concerns that affect communities, workplaces, and economies.

7. The Role of Companies and Leaders

7.1 Outdated Workplace Norms

Many companies still promote a culture where staying late is rewarded more than being efficient. Employees feel like they need to prove their dedication by overworking, and rest is seen as a weakness.

7.2 Creating Supportive Environments

The best organizations today understand that happy employees are productive employees. They promote:

- Flexible hours
- Mental health days
- Open conversations about burnout
- Leadership that sets a good example

Simple changes—like respecting time off or encouraging real lunch breaks—can shift the culture significantly.

8. How to Push Back Against Social Pressure

8.1 Start with Awareness

The first step is noticing the expectations you're responding to. Are you staying late because you want to—or because you're afraid of what others will think if you don't?

8.2 Communicate Your Needs

Speak openly with your partner, boss, or family about your limits and needs. Set clear boundaries and stick to them. When done respectfully, it can build trust rather than tension.

8.3 Redefine Success

Success isn't just about money or job titles. It's also about peace of mind, relationships, and health. Each person should be allowed to define what success and balance look like for them.

9. Different Countries, Different Cultures

Countries like Norway, Denmark, and Sweden often rank high in work-life balance. They have strong social safety nets, short work weeks, and promote gender equality in parenting. These cultures value *living* as much as *working*. Meanwhile, in more competitive economies like the U.S., India, or South Korea, work often dominates life. The belief that long hours equal success is deeply rooted, and changing that mindset takes time and effort.

10. Technology's Double-Edged Sword

10.1 Social Media Pressures

Scrolling through Instagram or LinkedIn, you might feel like everyone else is doing better. These platforms often highlight wins and hide struggles, which creates unrealistic expectations of what life should look like.

10.2 Setting Digital Limits

To protect your balance, consider:

- Turning off work notifications after hours
- Unplugging from screens on weekends
- Taking regular breaks during work

Small digital habits can make a big difference in mental clarity and personal happiness.

11. Looking Ahead: What Can Be Done

11.1 At the Policy Level

Governments can help by:

- Enforcing reasonable working hours
- Mandating parental leave for all genders
- Supporting mental health programs
- Encouraging work-from-home flexibility

11.2 In Schools and Colleges

Teaching young people about emotional intelligence, boundaries, and managing expectations prepares them to build healthier lives.

11.3 In Our Communities

We need to normalize different choices. Not everyone wants the same lifestyle—and that's okay. Encouraging diversity in how people live, work, and parent will slowly reshape expectations across society.

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12. Conclusion

In the end, finding a work-life balance is not just about managing your calendar. It's about questioning the quiet voices—spoken and unspoken—that tell you what you *should* be doing. It's about listening to your own needs and giving yourself permission to live life on your own terms.

Social expectations are powerful, but they are not unchangeable. By speaking up, setting boundaries, and redefining what matters, we can start creating a world where balance isn't a luxury—it's a right.

Limited Career Opportunities for Rural Girls in the Education Sector: A Case Study of Palghar District

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Abstract:
This study investigates the challenges faced by rural girls in Palghar District, Maharashtra, in pursuing careers within the education sector. Despite various initiatives to promote education, socio-economic barriers, cultural norms, and infrastructural limitations continue to impede the professional aspirations of these girls. Through a mixed-methods approach, including surveys and interviews, this research identifies key obstacles and proposes actionable strategies to enhance career opportunities for rural girls in the education sector.

Keywords:
Rural education, gender disparity, Palghar District, career opportunities, socio-economic barriers, educational infrastructure

1. Introduction:
Education serves as a pivotal tool for empowerment and socio-economic development. However, in regions like Palghar District, rural girls encounter numerous challenges that restrict their access to educational careers. This study aims to explore these challenges, assess their impact, and recommend solutions to bridge the existing gaps. Education is widely recognized as a fundamental driver of socio-economic development and empowerment, particularly for girls in rural areas. It provides individuals with knowledge, skills, and opportunities that can significantly enhance their quality of life and economic prospects. However, despite numerous government policies and initiatives aimed at improving education for girls in India, disparities persist, particularly in rural districts like Palghar. Palghar District, located in Maharashtra, is a largely rural region characterized by diverse tribal populations, economic disparities, and limited infrastructure. While educational access has improved over the years, career opportunities for girls—especially in the education sector—remain constrained due to deep-rooted socio-cultural norms, economic limitations, and inadequate facilities. This study aims to explore these barriers and propose measures to enhance the participation of rural girls in the education sector.

1.1 Importance of Education for Rural Girls:
Education plays a critical role in empowering women and improving overall community well-being. Educated women contribute to economic growth, enhance family well-being, and break cycles of poverty. Studies indicate that when girls receive an education, they are more likely to invest in their own children's education, leading to long-term social and economic benefits. Moreover, women in teaching professions serve as role models, inspiring more girls to pursue education and professional careers.
However, in rural areas, especially in Palghar District, multiple barriers prevent girls from realizing their full potential in the education sector. Many drop out before completing secondary education due to financial constraints, lack of transportation, safety concerns, and early marriage pressures. As a result, the number of women who pursue teaching careers or higher academic roles remains disproportionately low.

1.2 Challenges Faced by Rural Girls in Pursuing Careers in Education:
Despite various government initiatives, rural girls in Palghar District face significant challenges in entering the education sector:
1. Socio-Cultural Norms:
- Many families in rural areas still adhere to traditional gender roles, expecting girls to prioritize household responsibilities over career aspirations.
- Early marriage and societal pressure to conform to traditional roles limit educational and professional opportunities.
2. Economic Constraints:
- Many families in Palghar struggle with financial hardships, making it difficult for girls to continue education beyond primary levels.
- The cost of higher education, combined with a lack of scholarships and financial support, discourages girls from pursuing careers in the education sector.
3. Infrastructure and Accessibility Issues:
- Many villages lack adequate secondary schools and colleges, forcing girls to travel long distances for education.
- Poor transportation facilities increase safety concerns, leading to high dropout rates.
4. Lack of Female Role Models and Mentorship:

- A low presence of female teachers and educators in rural areas means fewer role models for aspiring girls.
- The absence of mentorship programs prevents girls from gaining guidance on career choices in the education sector.

5. Policy Implementation Gaps:
- While government policies such as Beti Bachao Beti Padhao and scholarships for girl students exist, their implementation at the grassroots level is often inadequate.
- Many families and students are unaware of available schemes, leading to underutilization of resources meant to support girls' education.

1.3 Significance of the Study:
This study is significant because it sheds light on the unique challenges faced by rural girls in Palghar District and examines how these obstacles impact their career aspirations in the education sector. By analyzing socio-economic factors, infrastructure limitations, and policy gaps, this research provides valuable insights for policymakers, educators, and social organizations working to promote gender equality in education.
Girl Child Population in Palghar District
According to the 2011 Census, Palghar District had a total population of approximately 2,990,116 individuals. While the exact number of girls in the entire district is not specified, the following data provides insights into the female child population across various talukas:
Palghar Taluka:34,034 girl children (0-6 years)
Dahanu Taluka:13,476 girl children
Jawhar Taluka:3,579 girl children
Mokhada Taluka: 2,487 girl children
Talasari Taluka: 5,948 girl children
Vasai Taluka: 1,586 girl children
Vikramgad Taluka: 4,876 girl children
Wada Taluka: 6,680 girl children
These figures sum up to approximately 49,215 girl children across these talukas. The overall literacy rate in the district was 66.65%, with female literacy significantly lower at 59.28%. This disparity highlights the need for targeted interventions to support girls in accessing higher education and career opportunities in the education sector.

3. Objectives of the Study:
1. To identify socio-cultural and economic barriers hindering rural girls in Palghar District from pursuing careers in the education sector.
2. To assess the availability and accessibility of educational infrastructure for girls in rural areas of Palghar.
3. To evaluate the effectiveness of existing policies and programs aimed at promoting educational careers among rural girls.
4. To propose actionable strategies to enhance career opportunities for rural girls in the education sector.

4. Hypotheses:
1. H_1: Socio-cultural norms significantly hinder rural girls in Palghar District from pursuing careers in the education sector.
2. H_2: Financial constraints limit the higher education opportunities available to rural girls in Palghar District.
3. H_3: Inadequate educational infrastructure negatively impacts the career aspirations of rural girls in Palghar District.
4. H_4: Effective implementation of government policies can improve career opportunities for rural girls in the education sector.

5. Methodology:
5.1 Data Collection
A mixed-methods approach was employed, combining quantitative surveys with qualitative interviews. Data were collected from 200 female students across various villages in Palghar District.
5.2 Sampling Technique:
Purposive sampling was used to select participants who are currently enrolled in secondary education or have recently completed it.
5.3 Data Analysis:
Quantitative data were analyzed using statistical tools to test the hypotheses, while qualitative data from interviews provided deeper insights into personal experiences and perceptions.

6. Statistical Analysis and Findings:
6.1 Socio-Cultural Constraints

Survey Result:65% of respondents indicated that traditional gender roles and early marriage expectations discourage them from pursuing higher education.
Statistical Test: Chi-square tests revealed a significant association between cultural norms and the decision to discontinue education ($p < 0.05$).

6.2 Economic Limitations:

Survey Result:70% of participants cited financial difficulties as a primary barrier to continuing their education.
Statistical Test: Regression analysis demonstrated that household income levels are a significant predictor of educational attainment among rural girls ($\beta = 0.65$, $p < 0.01$).

6.3 Educational Infrastructure:

Survey Result: 60% reported that the lack of nearby secondary schools and inadequate transportation hinder their educational pursuits.
Statistical Test: T-tests showed a significant difference in educational continuation rates between areas with accessible schools and those without ($t = 3.45$, $p < 0.01$).

6.4 Policy Awareness and Effectiveness:

Survey Result: Only 30% were aware of government schemes supporting female education, and merely 15% benefited from such programs.
Statistical Test: Correlation analysis indicated a positive relationship between policy awareness and educational continuation ($r = 0.4$, $p < 0.05$).

7. Discussion:

The findings underscore the multifaceted barriers that rural girls in Palghar District face in accessing careers in the education sector. Socio-cultural norms, economic hardships, and infrastructural deficits collectively contribute to high dropout rates and limited career aspirations. These results align with previous studies highlighting similar challenges in rural Maharashtra.

8. Recommendations:

1. Community Engagement: Initiate awareness programs to challenge traditional gender roles and promote the value of female education.
2. Financial Support: Implement targeted scholarship programs and financial aid to assist economically disadvantaged families.
3. Infrastructure Development: Invest in building more secondary schools in rural areas and improve transportation facilities to enhance accessibility.
4. Policy Implementation: Strengthen the execution of existing government schemes and increase awareness to ensure that eligible students benefit from these programs.

9. Conclusion:

Addressing the limited career opportunities for rural girls in Palghar District requires a holistic approach that tackles socio-cultural, economic, and infrastructural challenges. By implementing the recommended strategies, stakeholders can create an environment conducive to empowering these girls to pursue and achieve careers in the education sector.

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The Study on importance of sustainable Business practices for Business growth

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1.Abstract
The study explores the significance of sustainable business practices in fostering long-term business growth. As environmental, social, and governance (ESG) concerns gain prominence, businesses are increasingly integrating sustainability into their operations. This paper aims to analyze how adopting sustainable practices can not only improve a company's reputation but also lead to operational efficiencies, cost savings, and enhanced stakeholder relationships. By reviewing existing literature and conducting empirical research, the study highlights the role of sustainability in driving competitive advantage and resilience in an ever-evolving market landscape. Ultimately, the paper provides recommendations for businesses seeking to integrate sustainability into their growth strategies and secure a competitive edge in the market.
Keywords: environmental, social, and governance (ESG)

2.Introduction
In today's dynamic business environment, sustainability has become a pivotal factor in ensuring long-term success. Sustainable business practices refer to the adoption of strategies that contribute positively to the environment, society, and the economy, while also generating value for the business. With growing consumer awareness and regulatory pressures, businesses must now balance profit-making with their responsibility towards environmental and social issues. This study delves into the ways that sustainable practices can not only improve a company's environmental footprint but also create new opportunities for growth, profitability, and competitive advantage.
As consumers become more conscious of their environmental and social impact, they prefer brands that align with their values. Governments around the world are implementing stricter regulations and offering incentives to businesses that adopt eco-friendly and socially responsible operations. Investors are increasingly directing capital toward companies with strong ESG performance. Hence, sustainability is no longer optional; it is a driving force of innovation, risk mitigation, and business growth.
This paper aims to delve into the multi-faceted importance of sustainable business practices and how they can be leveraged for enduring success.

3.Review of Literature
The importance of sustainability in business has garnered significant academic and corporate attention over the last few decades. According to studies, businesses adopting sustainable practices often experience increased brand loyalty, enhanced corporate reputation, and a greater ability to attract talent. Research by Porter and Kramer (2011) suggests that integrating social and environmental factors into business strategies can create shared value, benefiting both the business and society. Furthermore, sustainable business models, including resource efficiency, waste reduction, and ethical sourcing, are shown to have a positive impact on financial performance (Eccles et al., 2012). However, challenges remain, such as the initial cost of implementing sustainability strategies and the need for industry-wide cooperation.
Several academic and industry studies have underscored the correlation between sustainable practices and business growth. A Harvard Business School study (Eccles, Ioannou, & Serafeim, 2014) found that companies with high sustainability ratings outperformed their counterparts in stock market and accounting performance over the long term.
Another McKinsey report showed that 70% of companies that implemented sustainable strategies reported a positive impact on their brand image and operational efficiency. Researchers have also noted that firms adopting green innovations enjoy higher customer loyalty and access to new markets.
In the Indian context, scholars have highlighted the role of sustainability in improving competitiveness, particularly in sectors like textiles, manufacturing, and information technology. Empirical studies show that sustainability practices enhance employee engagement, reduce costs, and improve compliance with government policies.10

3.Objectives
The primary objectives of this study are:
1. To investigate how sustainable business practices contribute to business growth.
2. To examine the impact of sustainability on operational efficiency and cost reduction.
3. To assess the relationship between sustainability initiatives and consumer perceptions/brand loyalty.
4. To explore the long-term benefits of sustainability for companies in various industries.
5. To provide recommendations for businesses looking to integrate sustainable practices into their strategies.

4.TATA Group: A Case Study on Sustainable Business Growth.

4.1 Introduction

The **TATA Group**, founded in 1868 by **Jamshedji Tata**, is one of India's most respected and diversified business conglomerates. With over 100 operating companies in more than 100 countries, it spans industries such as steel, automotive, information technology, power, chemicals, hospitality, and consumer products. The Group is globally recognized for integrating sustainability into the core of its strategy balancing profitability with social responsibility and environmental consciousness.

4.2 TATA's Philosophy on Sustainability

At the heart of the TATA Group's business ethos lies its commitment to:

- **People** – Empowering communities and improving quality of life.
- **Planet** – Reducing environmental impact and encouraging green innovations.
- **Profit** – Pursuing responsible and long-term value creation.

The Group believes that **"what comes from the people must go back to the people"**, a philosophy reflected through TATA Sons and its philanthropic trusts which hold about 66% of equity and reinvest it into social development.

4.3 Environmental Sustainability Initiatives

4.3.1 Tata Steel

- **Goal:** Achieve carbon neutrality by 2045.
- Introduced **Green Pro-certified** steel and significantly reduced water consumption and waste.
- First Indian company to receive the **Responsible Steel™ certification**.
- Operates one of the world's most efficient steel plants in Jamshedpur.

4.3.2 Tata Power

- One of India's largest renewable energy companies.
- **Target:** 70% generation capacity from clean energy by 2030.
- Deployed over **1 GW of solar rooftops** across India.
- Leading solar microgrid initiatives in rural areas to support energy access.

4.3.3 Tata Motors

- Investing ₹15,000 crore (~$2 billion) in **electric mobility**.
- Launched several **EV models** including the Nexon EV, Tiago EV, and Tigor EV.
- Established India's first **EV ecosystem**, covering battery charging, sales, and service.
- Member of the **RE100** initiative, committing to 100% renewable electricity.

4.4. Social Sustainability and Community Development

4.4.1 Tata Trusts

- Owns ~66% of Tata Sons; reinvests profits into charitable causes.
- Invested in **rural development, education, healthcare, water sanitation**, and digital empowerment.
- Partnered with government and NGOs to scale social impact programs.

4.4.2 Key Initiatives

- **Tata STRIVE**: Skill development for underprivileged youth across India.
- **Tata Water Mission**: Over 3 million people benefited from clean water and sanitation.
- **Tata Medical Center**: Provides affordable cancer care in Eastern India.
- **TCS Adult Literacy Program**: Helped over **10 million** adults achieve literacy through digital means.

4.5. Innovation and Digital Transformation

4.5.1 TCS (Tata Consultancy Services)

- World's second-largest IT services company by market cap.
- Helps clients reduce carbon footprints via **AI, cloud, and analytics**.
- TCS facilities are **LEED-certified green buildings**.
- Partnered with the **World Economic Forum** on digital sustainability frameworks.

4.5.2 Tata Elxsi

- Innovates in sustainable product design using **IoT, AI, and AR/VR**.
- Develops solutions in **smart mobility**, autonomous vehicles, and smart cities.

4.6. Governance, Ethics, and Global Standards

- Operates with a **Code of Conduct** based on transparency, accountability, and fairness.
- Regularly scores high on **ESG indices** like Dow Jones Sustainability Index.
- Winner of several **CII-ITC Sustainability Awards** for corporate social responsibility.

4.7. Challenges and Limitations

Despite its many successes, the Group faces challenges:

- **Balancing profit with sustainability** in high-capital sectors like steel and automotive.
- **Global compliance** with varying ESG standards.
- **Transition risk** during decarbonization and EV adoption phases.

4.8. Future Roadmap and Vision

- **Net-zero emissions targets** by 2040–2050 across major companies.
- More investments in **green hydrogen**, circular economy, and digital infrastructure.
- Strengthening **supply chain sustainability** with partners and vendors.

4.9. Conclusion

The TATA Group serves as a benchmark in aligning business objectives with sustainability and ethics. Its integrated approach across social, environmental, and economic dimensions makes it a model for responsible corporate growth. Through innovation, inclusive development, and leadership, TATA continues to inspire companies worldwide to redefine what business success truly means.

5. Sustainable Strategies for Business Growth based on case study.

5.1. Align Business Goals with Sustainability

- Businesses should embed **sustainability into their mission** and vision. It must be central to the organization's long-term strategy.
- **Set clear, measurable sustainability goals** (e.g., reducing carbon footprint, increasing energy efficiency, zero waste).
- **Integration of ESG factors** (Environmental, Social, Governance) into business models drives decision-making processes.

5.2 **Implement Circular Economy Practices**

- A **circular economy** approach promotes **resource efficiency**, waste reduction, and product lifecycle management.
- Encourage **product reuse, recycling, and upcycling**. Design products for longevity and ease of disassembly (e.g., **IKEA's commitment to designing 100% circular products** by 2030).
- Develop services around product reuse, like repair services, take-back programs, or product refurbishing (e.g., **Apple's Trade-In Program**).

5.3 **Eco-Friendly Product Innovation**

- Innovate to create **sustainable products** that have a lower environmental impact, such as **eco-friendly materials** and **energy-efficient designs**.
- Explore **biodegradable packaging** and **plant-based alternatives** to plastic (e.g., **Unilever's sustainable packaging initiatives**).
- **R&D investment** in green technologies, such as **electric vehicles (EVs)** or **renewable energy solutions** (e.g., **Tesla's commitment to clean energy products**).

5.4**. Energy Efficiency and Renewable Energy Integration**

- Transition to **renewable energy sources** (solar, wind) to reduce reliance on fossil fuels and minimize operational costs.
- Use **smart energy management systems** to monitor and optimize energy use in real time (e.g., **Google's use of AI to reduce energy consumption in data centers**).
- Promote energy-efficient equipment and automation in the manufacturing process.

5.5**. Sustainable Supply Chain Management**

- **Source responsibly**: Choose suppliers who also practice sustainability and adhere to ethical labour standards.
- **Supply chain transparency**: Use technology like **blockchain** to ensure traceability and reduce the risk of unethical practices.
- **Local sourcing**: Reducing transportation emissions and supporting local economies by sourcing materials closer to manufacturing sites.

5.6**. Waste Reduction and Resource Management**

- **Zero-waste practices**: Maximize the recycling of byproducts, reduce packaging waste, and improve waste management systems (e.g., **Patagonia's commitment to using recycled materials**).
- Implement **lean manufacturing** principles to reduce resource waste, increase efficiency, and minimize environmental impact.

5.7**. Employee Well-Being and Development**

- **Inclusive workplaces**: Promote diversity, equity, and inclusion (DEI) to ensure a healthy and productive work culture.
- **Employee engagement**: Encourage participation in sustainability initiatives to foster a sense of ownership and pride (e.g., **Google's sustainability challenges** for employees).
- Provide **ongoing training and development** for employees on sustainability and green practices.

5.8. **Community Impact and Social Innovation**

- **Corporate Social Responsibility (CSR)**: Invest in social programs that uplift local communities (e.g., **TATA Group's educational and healthcare initiatives**).
- Support global and local initiatives on health, education, clean water, and poverty alleviation, ensuring that business growth also benefits society.

5.9**. Building Relationships with Consumers**

- **Consumer education**: Build consumer awareness of the environmental and social impact of products and services.
- **Brand transparency**: Share your sustainability efforts publicly and authentically (e.g., **Ben & Jerry's transparency in sourcing Fairtrade-certified ingredients**).
- Offer products and services that align with the values of **sustainability-conscious consumers**.

6. Research Methodology

This study employs a mixed-methods approach combining both qualitative and quantitative research. The qualitative aspect involves a review of secondary data from peer-reviewed journals, industry reports, and case studies of businesses that have successfully implemented sustainable practices. Quantitative data is gathered through surveys and interviews with business leaders and sustainability experts from various sectors. The survey focuses on understanding the impact of sustainability on financial performance, customer satisfaction, and operational efficiency. Additionally, case studies of successful companies provide insights into the practical implementation of sustainable business models.

A recent KPMG report found that:

- 80% of CEOs believe sustainability is essential for competitive advantage.
- Companies with robust ESG policies had 20% lower operational costs on average.
- Over 60% of consumers prefer to buy from sustainable brands even at a premium.

An Indian Chamber of Commerce survey noted that:

- 45% of SMEs are willing to adopt sustainable practices if supported by the government.
- 30% of businesses reported increased customer loyalty due to green initiatives

7. Findings

7.1 Financial Performance:

Companies with strong sustainability strategies report better financial performance in the long term. They experience higher profitability, reduced costs, and increased market share due to enhanced operational efficiencies and innovation in sustainable practices.

7.2 Brand Loyalty and Consumer Trust:

Sustainable business practices play a significant role in building consumer trust. Customers are more likely to engage with companies that demonstrate social and environmental responsibility, leading to increased brand loyalty and repeat business.

7.3 Operational Efficiency:

Businesses that prioritize sustainability often implement energy-saving technologies, reduce waste, and streamline supply chains, which leads to substantial cost reductions. This is particularly evident in industries such as manufacturing, energy, and retail.

7.4 Regulatory Compliance and Risk Management:

Companies adopting sustainable practices are better positioned to comply with evolving environmental regulations and mitigate risks associated with climate change and resource depletion.

7.5 Employee Engagement:

Sustainable businesses are often seen as more attractive to prospective employees, particularly those who prioritize environmental and social responsibility. Employee satisfaction and retention are also positively correlated with a company's sustainability efforts.

8. Recommendations

8.1Adopt a Holistic Sustainability Strategy:

Businesses should integrate environmental, social, and governance (ESG) factors into their core operations to ensure balanced growth and long-term sustainability.

8.2 **Invest in Innovation:**
Companies should invest in research and development to create sustainable products and services that align with evolving consumer preferences and regulatory standards.
8.3 **Enhance Stakeholder Communication:**
Transparency in sustainability efforts is essential. Companies should clearly communicate their sustainability initiatives to customers, employees, and investors to build trust and support.
8.4 **Leverage Technology for Efficiency:**
Technology can play a key role in enhancing sustainability by improving resource efficiency, reducing waste, and optimizing supply chain processes.
8.5 **Collaborate with Industry Partners:**
Collaboration across industries can accelerate the transition to more sustainable practices. Businesses should engage with stakeholders, NGOs, and governments to share knowledge and best practices.

9.Conclusion
Sustainable business practices are increasingly recognized as essential to the growth and longevity of businesses across industries. While the initial investment in sustainability may be significant, the long-term benefits far outweigh the costs, leading to enhanced operational efficiencies, cost savings, improved brand image, and greater stakeholder loyalty. This study confirms that sustainability is not only an ethical consideration but also a strategic approach that can foster competitive advantage and business resilience in a rapidly changing global marketplace. Businesses that embrace sustainability as a core value are more likely to succeed in the face of emerging challenges and capitalize on new growth opportunities.

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Impact of Jalyukta Shivar Abhiyan Scheme on Water Availability and Agricultural Productivity in rural area of Palghar District, Maharashtra

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Abstract
This study evaluates the impact of the Jalyukta Shivar Abhiyan (JSA) on water availability and agricultural productivity in Palghar district, Maharashtra. The research examines changes in groundwater levels, irrigation facilities, and crop yields before and after the implementation of JSA. Using a combination of field surveys, secondary data, and stakeholder interviews, the study identifies key benefits and challenges in implementing JSA in Palghar's rural areas. The findings provide insights into policy effectiveness and suggest recommendations for improving water conservation strategies.

Keywords:- Jalyukta Shivar Abhiyan

1. Introduction

The Jalyukta Shivar Abhiyan (JSA), a water conservation program in Maharashtra, aims to improve water availability and agricultural productivity in rural areas, including Palghar district, by promoting rainwater harvesting and water storage, ultimately leading to drought-free villages and increased irrigation. Water Conservation Program is one of the very important programs, the Govt. of Maharashtra has decided to implement with a view to improve the lifestyle of the people in rural areas and thereby achieve the rural development. In the state of Maharashtra, inconsistency of rains in the very times of crop growth and discontinuity of rains create drought-like situation and agriculture field is heavily impacted. Almost 82% area in the state is dry land while 52% area is drought-prone. Government is authorizing implementation of 'Jalyukta Shivar' campaign in all districts of the state, in order to permanently overcome drought situation by convergence of funds approved for schemes under various departments and through MREGS/MLA/MP Fund/District-level Fund/Nongovernmental Organizations/CSR and public participation. The scheme aimed at solving water woes of draught-prone regions is already a hit with farmers as many villages are inching towards becoming water-sufficient.

Key Impacts of Jalyukta Shivar Abhiyan:
Increased Water Availability: The program focuses on rainwater harvesting and groundwater recharge, leading to increased water storage capacity and improved water availability, particularly for drinking and irrigation purposes.
Enhanced Agricultural Productivity: By increasing water availability, JSA supports irrigation, allowing farmers to cultivate crops more effectively and diversify their farming practices, leading to increased agricultural productivity and income.
Drought-Free Villages: The program aims to make villages drought-free by creating water storage capacity and ensuring a reliable water supply, even during dry periods.
Promoting Micro-irrigation: JSA encourages the use of micro-irrigation systems to ensure efficient water usage and maximize the irrigated area.
Soil and Water Conservation: The program implements soil and water conservation measures, such as contour trenches, stream widening, and bunding, to reduce runoff and soil erosion, further enhancing water availability and soil fertility.
Improved Groundwater Levels: By promoting rainwater harvesting and reducing runoff, JSA helps to recharge groundwater levels, ensuring a sustainable water supply for the long term.
Increased Area Under Irrigation: The program aims to increase the area under irrigation by providing water resources and promoting efficient irrigation techniques.
Reduced Reliance on Dry Land Crops: JSA encourages farmers to shift from dry land crops to irrigated crops, leading to higher yields and improved livelihoods.
Community Participation: The program emphasizes community participation in planning and implementation, ensuring that the benefits are shared equitably and that the projects are sustainable.

2. Literature Review

1. Assessment of Works under Jalyukta Shivar Campaign – A Case Study of Pusad Region was published by Prof. R. T. Pachkor, Dr. D. K. Parbat Department of Civil Engineering, Babasaheb Naik College of Engineering, Pusad, Maharashtra, India Department of Civil Engineering, Government Polytechnic, Nagpur, Maharashtra, India Volume 5

Issue IV, April 2017 IC Value: 45.98 Pachkora and Parbat 2017 studied that JYS is the government of Maharashtra program to provide water for all and make villages scarcity free. Maharashtra has been witnessing increasing agriculture and drinking water stress in recent years. Maharashtra government has launched a new program named "Jalyukt Shivar Abhiyan" in bid to make Maharashtra a drought free state by 2019.
2. Analysis of Delays in Works under Jalyukt Shivar Campaign published Niranjan J. Khillare Department of Civil Engineering NDMVPS's KBT COE, Nashik, India. He studied that JSA campaign is flagship program of government of Maharashtra aims to dream water empowerment to the drought affected villages to make Maharashtra drought free by 2019. Also, the government is only monitoring construction phase of project cycle whereas delays in preconstruction activities are not being considered.
3. Mr. Potekaret U.P and Pawar 2017 concluded that water is important because it is essential to life on earth. In Maharashtra state nearly 82% area of state fall in rainfed sector and 50% area is drought prone, uncertain, insufficient and irregular rainfall pattern adversely affect agriculture. Drought occurs frequently resulting shortage of water for drinking and irrigation.
4. Zeesham and Pachkore R.T conclude that JYS is the government of Maharashtra programme to provide water for all and make villages scarcity free. The JSA proposes framework for village level water balance calculation which includes estimation of crop water requirement, drinking water stress etc. After completion of irrigation projects in next two years 50% area will be under irrigation. With unique initiative like Jalyukt Shivar water scarcity will surely be a thing of the past.

3. Aims and Objectives

To assess the impact of JSA on groundwater levels and surface water availability.
To analyze changes in agricultural productivity post-JSA.
To identify challenges and opportunities in JSA implementation.

4. Research Methodology

Study Area: Overview of Palghar district (climate, soil, cropping patterns, water resources).
Data Collection Methods:
Primary Data: Farmer surveys, interviews with local authorities,
Secondary Data: Government reports, rainfall data, groundwater level records, agricultural yield data.
Analysis Techniques: Comparative study of pre- and post-JSA conditions.

5. Limitations

Data Availability and Reliability: Accurate and up-to-date secondary data (especially at the micro-level) may be limited or inconsistent across regions.
Regional Specificity: The study focuses on specific districts or regions; therefore, findings **may not be generalizable** to all areas under JSA.
Short-Term Assessment: Some of the benefits of water conservation, especially groundwater recharge, may take **several years to manifest**, limiting the study's ability to capture long-term impacts.
Stakeholder Bias: Responses from participants, especially government officials or program beneficiaries, may reflect **social desirability bias** or limited knowledge of broader program impacts.
Resource Constraints: Time, budget, and accessibility may limit the **breadth of fieldwork** and **number of respondents** covered.
Funds: Issues with funding and execution.
Awareness: Farmers' awareness and participation.

6. Findings

- In some villages of **Palghar**, especially where implementation was well-coordinated, **groundwater levels improved modestly**, and farm ponds helped **retain surface water** during dry spells.
- However, in **several areas**, the water storage structures did **not perform as expected** due to **poor design**, **lack of maintenance**, or **wrong site selection**.
- Where water availability improved, **crop yield increased slightly**, especially for **horticulture and second crops (rabi season)**.
- But **long-term impact on productivity** was inconsistent due to **continued water stress** in many villages.
- **Structures like farm ponds and trenches** were often built **without scientific planning**.
- Many **lacked proper inlets/outlets** and siltation management, leading to **underutilization**.
- **Limited participation** from local villagers in planning and maintaining the structures led to poor **ownership and upkeep**.
- Some trenches were later **filled or encroached by farmers**, defeating the purpose.

- **Comptroller and Auditor General (CAG)** found irregularities in financial reporting and **under-utilization of funds**.
- Actual **water storage capacities were often overestimated**, and many projects did not match their DPR (Detailed Project Report) goals.
- Overuse of **farm ponds** led to **increased groundwater extraction** in some areas, ironically **worsening water stress** in the long run.
- Lack of **ecological planning** reduced the sustainability of the intervention.
- The initiative helped **raise awareness** about watershed management and **sparked rural interest** in water conservation methods, even where physical results were limited

7. Conclusion:

- The Jalyukta Shivar Abhiyan (JSA) aimed to address water scarcity and boost agricultural productivity in drought-prone regions like Palghar district, Maharashtra. While the program had notable objectives and saw some success—such as improved water conservation structures, community participation, and positive agricultural impacts in certain areas—the outcomes were inconsistent.
- In Palghar district specifically, third-party evaluations indicated that although water harvesting structures were constructed and village-level planning was initiated, the overall impact was mixed due to issues like poor construction quality, limited scientific planning, and maintenance challenges. Across Maharashtra, similar patterns emerged, with successful outcomes in some villages and systemic shortcomings in others.
- JSA has shown potential as a water conservation strategy in rural Maharashtra, but to maximize its impact in regions like Palghar, future efforts must emphasize better planning based on hydrological data, stronger community involvement, quality control in implementation, and regular monitoring of outcomes.

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Impact of Home Loans and Non-Home Loans on the Financial Health of Cooperative Banks

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This research investigates the influence of home loans and non-home loans on the financial performance of cooperative banks. By analyzing loan distribution, repayment behavior, risk factors, and profitability indicators, this paper identifies how different types of lending portfolios affect liquidity, asset quality, and capital adequacy. The study is grounded in both qualitative and quantitative assessments, revealing that while home loans offer stability and long-term revenue, non-home loans contribute to higher risk but also increased short-term liquidity. Recommendations are made to optimize lending strategies for cooperative banks to ensure balanced financial growth and stability.

Keywords: Home loans, Non-home loans, financial performance, Cooperative banks, Loan distribution, Repayment behavior, Risk factors, Profitability indicators, Liquidity, Asset quality, Capital adequacy, Qualitative assessment, Quantitative assessment, Stability, Long-term revenue, Short-term liquidity, Lending strategies, Financial growth, Financial stability.

1. Introduction

In India, cooperative banks serve as a crucial link between financial institutions and rural communities. These banks are member-driven and prioritize community development over pure profit-making motives. Given their reach and influence in semi-urban and rural areas, they are major facilitators of financial inclusion. Loans form a significant part of the business for cooperative banks, with home loans and non-home loans making up the bulk of their lending portfolio.

Home loans, typically secured against property, are considered low-risk and long-term in nature. Non-home loans, including personal, agricultural, business, vehicle, and education loans, tend to be of shorter tenure, often with weaker collateral or none at all. Each category has a different risk profile, impact on cash flow, and implications for asset quality.

This paper seeks to evaluate how these two types of loans affect the financial health of cooperative banks using various financial indicators such as Non-Performing Assets (NPAs), Return on Assets (ROA), Capital Adequacy Ratio (CAR), and Liquidity Ratio.

2. Objectives of the Study

1. To evaluate the growth trend of home loans and non-home loans in cooperative banks over the last five years.
2. To analyze the impact of these loan types on key financial indicators.
3. To identify risks and benefits associated with each loan category.
4. To provide actionable recommendations for managing a balanced loan portfolio.

3. Review of Literature

1. **Shraddha Rajeshkumar Sakariya Som & Twinkle Trivedi Som (2024)** investigates the lending practices of cooperative banks in Ahmedabad, focusing on customer satisfaction levels and preferences. It reveals that the most common types of loans obtained were personal loans, influenced by factors such as lower interest rates, quick loan approval, and personalized customer service.
2. **Dr. Archana Fulwari (2018)** discusses various factors influencing the demand for home loans, including income levels, interest rates, house prices, and inflation. The study highlights the importance of these determinants in shaping borrowers' decisions in the housing finance sector.
3. **Dr. Indu Santosh (2014)** focuses on the lending practices of cooperative banks in Chhattisgarh. It reveals that the majority of respondents have taken house loans and personal loans, with fewer opting for consumer, educational, and vehicle loans. The study highlights customer preferences and satisfaction levels in the cooperative banking sector.
4. **Jyoti Gupta (2014)** delves into the lending practices of cooperative banks in India. The study indicates that house loans and personal loans are the most preferred by customers, with factors such as reasonable interest rates, ease of repayment, and fewer formalities influencing their choices.
5. **Dutta and Basak (2008)** suggested that Co-operative banks should improve their recovery performance, adopt new system of computerized monitoring of loans, implement proper prudential norms and organize regular workshops to sustain in the competitive banking environment.

4. Research Methodology

Descriptive research is used in this study in order to identify the lending practices of bank and determining customer's level of satisfaction. The method used was questionnaire and interview of the experienced loan officers.

4.1 Data Collection

- **Primary Data**: Interviews and surveys with bank managers, credit officers, and borrowers in selected cooperative banks.
- **Secondary Data**: Annual reports of cooperative banks, RBI publications, NABARD reports, and financial statements from 2020 to 2024.

4.2 Sampling

- Purposive sampling of 20 cooperative banks across Maharashtra, Gujarat, Kerala, Punjab, and Karnataka.
- Data observed for five years (2020–2024).

4.3 Tools for Analysis

- Descriptive Statistics
- Ratio Analysis
- Regression Analysis
- SWOT Analysis

5. Home Loans: A Stable Asset Class

Home loans are generally secured by the property being financed. These loans typically have tenures of 10–25 years, and the approval process involves stringent verification.

Impact on Financial Health:

- **Low NPAs**: Typically between 2% to 3%
- **Stable Revenue**: Long-term EMIs ensure continuous income
- **Strong Asset Quality**: Secured loans reduce credit risk
- **Capital Adequacy**: Contribute positively due to low-risk weight

Drawbacks:

- **Low Liquidity**: Funds tied for long periods
- **Long Processing Time**: Due to legal and documentation requirements

6. Non-Home Loans: High Risk, High Return

These include agricultural, business, personal, vehicle, and education loans. Though they fetch higher interest, they are riskier due to the unsecured nature of many such loans.

Impact on Financial Health:

- **Higher NPAs**: Sometimes above 9%
- **Higher Liquidity**: Due to shorter repayment cycles
- **Better Margins**: Due to risk premiums
- **Recovery Challenges**: Due to weak or no collateral

Risks:

- **Sector Dependence**: E.g., agricultural loans depend on monsoons
- **Weak Appraisal**: Many banks lack strong credit evaluation systems
- **Loan Waivers**: Affect repayment behavior

7. Comparative Financial Analysis

Indicator	Home Loans	Non-Home Loans
Average NPA (%)	2.5%	9.3%
ROA (%)	1.2%	1.6%
Liquidity Ratio (%)	28%	45%
Net Interest Margin	2.8%	3.5%
Risk Weight	Low	Medium-High

Figure 1: Financial Comparison – Home Loans vs Non-Home Loans

8. Key Findings

1. **Balanced Portfolio**: Banks with 60:40 ratio (Home: Non-Home) performed best.
2. **Non-Home Risks**: Require better recovery mechanisms and credit checks.
3. **Regulatory Gaps**: Implementation of RBI guidelines not uniform.
4. **Diversification Needed**: Over-reliance on a single sector increases financial stress.

9. Recommendations

- **Loan Portfolio Diversification**
- **Adopt Credit Scoring Models for Non-Home Loans**
- **Train Loan Officers on Risk Management**
- **Digitize Lending and Monitoring Systems**
- **Establish Dedicated Recovery Teams**

10. Conclusion

The study clearly establishes that home loans are more secure and provide long-term financial health, whereas non-home loans, though more profitable short-term, carry greater risk. Cooperative banks must adopt a balanced lending strategy, invest in risk mitigation, and align with regulatory frameworks for long-term sustainability and community impact.

11. Future Scope

1. Compare cooperative banks with commercial banks for lending patterns.
2. Assess the impact of fintech and digital lending tools.
3. Evaluate the role of government schemes and subsidies.
4. Study region-specific performance of loan portfolios.

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A Comparative Analysis of HR Practices in Public and Private Sector Banks in Mumbai: An Empirical Study

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Abstract:
The objective of this research is to examine how HRM strategies influence the levels of employee satisfaction, loyalty, and retention within public and private sector banks in India. An organised survey was utilised to collect data regarding employees' viewpoints on HRM procedures. A group of 100 workers from Mumbai participated in the research, and 88 of them gave precise answers. The results indicate that employee contentment, commitment, and tenure are heavily influenced by human resources strategies.
The research seeks to examine the impact of human resources strategies on public and private sector banks in Mumbai. Both financial institutions employ unique human resources strategies that are specifically designed to meet the individual needs of their clients. These strategies encompass a wide range of employee policies, including recruitment, selection, testing, performance evaluation, organisational policy, career planning, and employee involvement. These policies have a direct impact on the level of customer satisfaction experienced by the banks' clientele.
The article highlights the significance of incorporating HRM practices into business strategies and achieving success, as they have a direct impact on enhancing customer contentment. The research emphasises the importance of implementing effective HRM strategies to attain organisational goals and achieve prosperity.

Key Factors: HR, HR Outcomes, HR performance, Job satisfaction

Introduction

The value of human resources cannot be underestimated by organisations. In light of the fast-paced technological progress, growing interconnectivity, changing ownership patterns, and fierce competition, it is imperative to revamp current practices in managing human capital. By fostering an environment that prioritises efficiency and empowers employees to reach their full potential, organisations can reap a multitude of benefits. These include greater adaptability, superior product quality, and overall operational effectiveness, all of which contribute to a sustained competitive advantage in cost management.
Considerable investigation has been carried out regarding these issues within the MSME community, although the majority of research has concentrated on organisations in the Western hemisphere. Asian countries have not conducted sufficient research on this particular subject. As stated by A.P. B (2004), the service sector's productivity may be significantly influenced by the HRM environment, in contrast to the manufacturing sector. This is primarily because the service sector incurs a larger portion of production costs related to employment and experiences a higher level of direct engagement between employees and customers.
Workers in the service sector play a crucial role in fostering a stronger bond between customers and employees, effectively bridging the gap that exists between these two groups. The relevance of HRM in the service sector exceeds its significance in the manufacturing sector, as demonstrated by the exchanges between clients and staff members in service-oriented businesses.
This current study seeks to close this gap by investigating how HRM strategies affect the overall performance of banks in India. Employees are commonly acknowledged as a vital element in establishing a competitive advantage for businesses, and studies have uncovered a positive correlation between effective work strategies and various measures of company performance.

Literature Review:

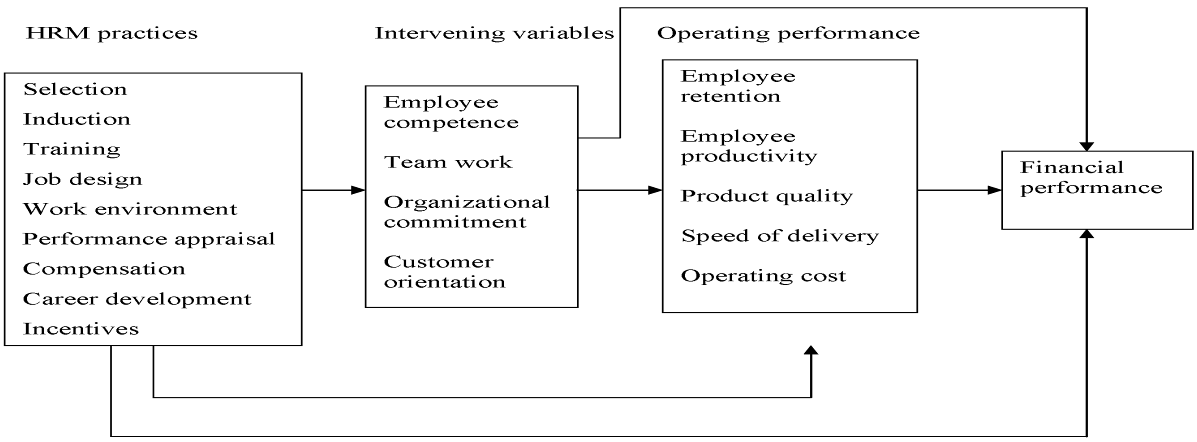
Previous research in the banking industry has primarily focused on the value added or production approach, which involves financial institutions generating demand deposits, time and savings deposits, commercial loans, real estate loans, and installment loans. However, services have gained prominence due to their intangibility, active consumer participation, and simultaneous production and consumption. Employee engagement in the service sector plays a crucial role in fostering a deeper understanding of both the service itself and the products offered by the company, which has a profound effect on customers.
Human resource management (HRM) has become a top concern for organizations worldwide, as they recognize its crucial role in driving organisational performance. The correlation between HRM and organizational success is undeniably favourable, with the impact of HRM policies on outcomes such as group skills, attitudes, and behaviors being evident. This leads to an indirect enhancement of organisational performance.

A study conducted by Shikha (2010) found that various factors such as pay, pay equity, fringe benefits, recruitment, and staffing patterns play a crucial role in influencing employee productivity. The findings indicate that HR policies and procedures effectively align with the level of proficiency established by financial institutions.
In 1998, Rogers and Wright conducted a comprehensive analysis of 29 different empirical studies, including 80 unique observations, to explore the connection between HRM (Human Resource Management) and organizational performance. The performance indicators were categorised into four groups: financial accounting, human resources, and financial markets. The researchers discovered that there were only three reported effect sizes when examining the relationship between HR and human resource outcomes. Achieving optimal HR utilization is crucial for ensuring the success of an organization, and determining the impact of HR practices on employees' well-being and workload necessitates the active participation and collaboration of all employees.
Gardemer, Wright, and Gerhart presented various situations of successful and unsuccessful companies to a diverse group of individuals, including line managers, HR managers, MBAs, and HR Masters students. They suggested that the connection between HR practice metrics and company performance might be a result of participants' underlying beliefs regarding their correlation.

Human Resource Practices

Human resource management practices are vital in the process of restructuring and consolidating resources within an organisation. These solutions are characterised by their unique background, implicit nature, and time-dependent nature. Measuring an employee's impact on the organization's objectives can be achieved through the evaluation of their productivity. Efficient human resource management practices play a vital role in achieving the objectives of the organisation. Studies indicate that human resources (HR) departments frequently partake in comparative measures as a means of thriving in a highly competitive setting. Implementing a comprehensive range of HR strategies can establish a solid groundwork for sustained and ambitious progress.
Past research has uncovered a range of human resources strategies, including but not limited to, the recruitment and hiring of employees, assessing their performance, fostering motivation, providing rewards, shaping job roles, addressing complaints, sharing data, evaluating behaviour, and involving workers in decision-making processes. Additional human resources practices encompass various aspects such as opportunities for internal advancement, outcome-driven evaluations, performance-based rewards, training and development frameworks, employment stability, job expansion, and employee grievances.
There exist numerous categorizations of HR strategies that have evolved into broader dimensions of human resource management, including but not limited to organisational strategy, talent acquisition, remuneration, professional growth, performance assessment, and effective communication. In their study conducted in 1996, Schuler and Jackson explored various aspects of organisational management, including performance assessment, hiring processes, strategic planning, salary structures, and employee growth opportunities. In 1989, Ulrich and his peers devised a comprehensive framework encompassing various aspects of the corporate landscape. Their model incorporated organisational behaviour and theory, resource planning, talent management, organisational development, and performance appraisal.
This research examines the utilisation of various human resource practices, such as talent acquisition and screening, skill enhancement programmes, performance evaluation systems, employee engagement initiatives, and remuneration strategies. These practices showcase the proficiency and understanding of resource allocation within the realm of human resources.

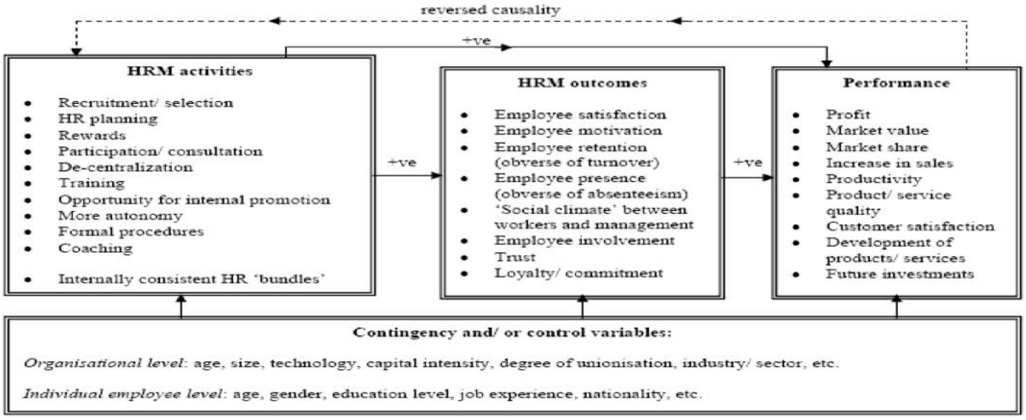
Figure 1: HRM - performance linkage model



Source: Paul A. K and Anantharaman R. N (2003), Impact of people management practices on organizational performance: analysis of a causal model, International Journal of Human Resource management, Vol.14, p.1249

 ISBN No- 978-93-342-5395-5

Figure: 2: HRM activities, HRM outcomes and performance (Paauwe and Richardson, 1997)



The Banking Structure in India: India's commercial banking system includes both planned and unplanned banks, listed in the Reserve Bank of India (RBI) Act, 1935's second schedule. On July 1, 1955, the State Bank of India (SBI) became the sole nationalised bank, leading to a significant increase in deposits at public sector banks' branches by approximately 800 percent and an exponential rise in advances by 11,000 percent. This policy brought banks under government control in India, ensuring a more efficient and transparent banking system.

Table 1: Nationalization Process of Banks in India.

Sr.No.	Name of Bank	Year of Nationalization
1.	State Bank of India	1955
2.	SBI subsidiaries	1959
3.	14 major banks of India	1969
4.	06 banks with deposits over two hundred crores	1980

Public Sector Banks

The Indian government took the initiative to nationalise public sector banks in order to enhance social welfare between 1969 and 1980. There are two main categories: the State Bank of India and its affiliated institutions, and the Nationalised Banks. In total, there are 19 nationalised banks and 8 associates of the State Bank of India. In India, the commercial banking market is largely dominated by public sector banks, as they hold a significant majority of deposits, accounting for 75% of the total. Additionally, these banks also have a stronghold on advances, with a market share of 71%.

1) State Bank of India
2. Nationalized banks,
3. Local Rural Banks

Private Sector Banks

The private sector owns and operates financial institutions, with authority and influence over the board determined by the proportion of bank shares in their name. These institutions aim to enhance the economy and supplement government-owned banks. Public sector banks cater to the financially underserved population, focusing on improving financial outcomes rather than generating profits. They are governed by the government and must comply with RBI regulations. Private sector banks can comply with RBI-established interest rates, but only after obtaining consent. The interest rates offered by private sector banks are slightly higher than those offered by public sector banks.

DIFFERENCES BETWEEN PUBLIC AND PRIVATE SECTOR BANK

Studies indicate that private and international banks outshine public sector banks in terms of performance, primarily due to their adeptness in effectively executing Total Quality Management strategies. Public and private banks differ in terms of their compensation structures, work atmospheres, technological advancements, potential career growth, and level of job stability. Public sector banks have implemented a compensation structure that aims to reduce pay inequality and recognise individuals' long-term achievements in their careers. Private sector banks provide a work environment that focuses on progress, embraces technology, and eliminates bureaucratic hurdles. On the other hand, public sector banks may let go of employees based on inadequate performance or unfavourable market circumstances. Career satisfaction can be greatly influenced by various factors such as personal growth initiatives, access to employment opportunities, and effective retirement strategies.

Importance of the study

Effective human resource management (HRM) plays a vital role in the service industry, particularly for banks, as they encounter various difficulties in the areas of personnel and risk management. Having a proficient labour force is crucial in ensuring successful risk mitigation. The primary objective of the banking industry is to ensure customer contentment and establish uniqueness through the implementation of diverse human resources strategies and regulations in both public and private domains. The objective of this research is to analyse how HR practices influence the performance of employees in the Mumbai area. The study will specifically examine the effects of recruitment, selection, reward, and training strategies. Effective employee training is crucial for maximising performance and productivity. Inadequately trained staff members can result in expensive errors and substantial financial setbacks.

METHODOLOGY OF THE STUDY

The research conducted in Mumbai focuses on examining various aspects of human resource management (HRM) within the banking sector. Both primary and secondary sources are utilised to collect relevant data for the study. A survey consisting of a set of organised questions was given to a group of 100 workers, resulting in a participation rate of 85%. The survey encompasses various aspects of the workplace, including the hiring process, employee compensation and benefits, opportunities for professional growth, performance evaluation methods, employee engagement, and the overall working environment. Various methods of selecting samples were employed, and the size of the sample satisfies the necessary statistical criteria for conducting regression analysis, factor analysis, and structural variable analysis.

Procedure

HR managers and line managers in the banking sector of India were provided with a survey that outlined the aims and purposes of the research. The data collected from the participants was examined through the utilisation of SPSS 20.0 software. Various statistical techniques, including descriptive statistics and regression analysis, were employed to analyse the responses. The research sought to establish a correlation between human resources strategies, satisfaction among internal customers, and the overall effectiveness of the organisation using regression analysis.

2. OBJECTIVES OF THE STUDY

The primary aim and purpose of the research is to analyse and contrast the human resources strategies employed by banks in the public and private sectors. In pursuit of this objective, the subsequent precise objectives have been set:

• Seeking an overview and evaluation of HRM strategies;

• To limit the focus of HRM practices;

Hypothesis

H0: There is no significant difference in the human resources practices employed by public and private banks.

Population and Sample

The study primarily examined Human Resource managers and Line managers in the private and public banking sectors of India, with the objective of comprehending the potential consequences associated with the implementation of various practices within these sectors. Data was gathered from employees of public sector banks such as State Bank of India (SBI) and Indian Overseas Bank (IOB), as well as privatised banks like AXIS Bank and Yes Bank.

Tools and Measures

The objective of the study was to analyse human resource practices and job performance in public and private sector banks. This was achieved through the utilisation of a structured questionnaire that encompassed multiple dimensions of HR practices. The study aimed to identify potential causes and specifically focused on the following dimensions.

- **Recruitment and Selection**

  Recruitment is the primary stage in the process of filling a vacancy within an organisation, which entails soliciting applications for specific job positions. The process entails identifying and recruiting suitable candidates for available positions, taking into account both internal and external factors. Organisations employ recruitment strategies to enhance the probability of selecting individuals possessing the requisite expertise and capabilities. The selection process involves the careful evaluation and comparison of candidates in order to identify the most suitable individual from a group of applicants. Its primary objective is to assess and predict the potential success of candidates if they were to be hired.
- **Training and development**

  Training and development play a crucial role in enhancing job performance by addressing the disparity between employee skills and job requirements. Development encompasses the process of modifying behaviour through the implementation of continuous learning practices. It primarily emphasises non-technical aspects of organisational functions, such as problem-solving, decision-making, and interpersonal relationships. Both factors are essential for optimising employee performance, ensuring high work quality, fostering positive morale, facilitating personal growth, cultivating a favourable organisational climate, and minimising the need for excessive supervision. Training and development are widely acknowledged as crucial endeavours within business organisations, academic institutions, professional bodies, and government departments.

- **Performance appraisal**
  The performance appraisal is a formal evaluation process that measures employees' job performance, taking into account both qualitative and quantitative factors. Performance evaluations are conducted to assess an employee's suitability for ongoing employment and to determine if they are eligible for incentives such as bonuses, salary increases, or promotions. The performance appraisal process also takes into account an employee's potential for growth and development, thereby ensuring that they are effectively fulfilling their job responsibilities.
- **Compensation benefits**
  Compensation pertains to the monetary remuneration that employees receive in exchange for their services, encompassing wages, salaries, pensions, bonuses, and profit-sharing. Additional components of compensation encompass career advancement opportunities, recognition, fulfilment derived from one's job, and the ability to express creativity. Incentives are additional monetary rewards provided to recognise exceptional performance, with the purpose of motivating individuals and attracting and retaining highly skilled employees. An effective approach to compensation strategies involves aligning incentives with the specific requirements of employees, offering flexibility in compensation packages, engaging employees in benefit schemes, and providing suitable benefits.
- **Employee Participation**
  Participation, commonly referred to as collective management, worker empowerment, or participatory decision-making, is a collaborative arrangement that involves the distribution of work among individuals who do not hold equal hierarchical positions. The concept encompasses a range of designs, including information sharing, employee suggestion programmes, self-directed work groups, problem-solving teams, and flexible job design. Participatory decision-making offers several advantages to firms, including the promotion of appreciation and awareness among various social groups and seniors, as well as the enhancement of employees' value within the organisation.
- **Work Environment**
  Numerous studies have been conducted to examine the influence of the work environment on various aspects of employee behaviour, including turnover rates, job satisfaction levels, job involvement, and organisational commitment. In order to effectively retain talent, it is imperative to establish a work environment that fosters productivity and well-being. This includes offering support for employees with visual impairments, providing tools and resources to accommodate individuals with reduced physical strength, and ensuring suitable positions are available for older employees. The work environment plays a crucial role in influencing employees' retention within the organisation.

Result and discussions:

The study employed a self-structured questionnaire to collect data from a sample of 85 employees working in both the public and private sectors of Mumbai banks. The collected data was analysed using Z-test and SPSS 19.0. To ensure a seamless response process, personal assistance was provided to the participants.

Distribution of Respondents

Table 1.1

Bank	**N**	**%**
Private	48	56
Public	37	44
Total	85	100

Distribution of Respondents According to Age Group Table 1.2

Age Group	**Private Banks**		**Public Banks**	
	N	**%**	**N**	**%**
20-35 yrs	14	30	13	34
35-45 yrs	16	33	10	28
>45 yrs	18	37	14	38
Total	48		37	

Distribution of Respondents According to Experience Table 1.3

Experience	**Private Banks**		**Public Banks**	
	N	**%**	**N**	**%**
<=10 yrs	15	31	9	24
11-20 yrs	18	38	10	28
21-30 yrs	4	8	7	17
31-40 yrs	11	22	11	31
Total	48		37	

The above table shows that total number of respondents were 85. These respondents are from the public and private banks situated in Mumbai city. The maximum respondents were 21-30 years and having 21-30 year's experience.
Test for Difference of Means for different HR factors through different questions between Private and Public Sector Banks.

Group Statistics

Table 2.1

	Bank	N	Mean	Std. Deviation	Std. Error Mean
Q1	Public	37	3.53	1.02	0.234
	Private	48	3.5	0.924	0.218
Q2	Public	37	3.95	0.78	0.179
	Private	48	3.67	0.767	0.181
Q3	Public	37	4.05	1.026	0.235
	Private	48	3.5	1.043	0.246
Q4	Public	37	3.89	0.994	0.228
	Private	48	3.44	1.381	0.326
Q5	Public	37	4	0.943	0.216
	Private	48	2.94	1.259	0.297
Q6	Public	37	3.89	0.994	0.228
	Private	48	3.28	1.018	0.24
Q7	Public	37	4.11	0.875	0.201
	Private	48	4	0.84	0.198
Q8	Public	37	3.89	1.1	0.252
	Private	48	3.17	1.339	0.316
Q9	Public	37	3.74	0.991	0.227
	Private	48	3.56	1.097	0.258
Q10	Public	37	4.26	0.933	0.214
	Private	48	3.67	0.84	0.198
Q11	Public	37	4.47	0.513	0.118
	Private	48	3.61	0.916	0.216
Q12	Public	37	4.21	0.535	0.123
	Private	48	3.78	1.06	0.25
Q13	Public	37	4.05	0.524	0.12
	Private	48	2.94	1.305	0.308
Q14	Public	37	3.21	1.084	0.249
	Private	48	3.72	0.669	0.158
Q15	Public	37	3.53	1.172	0.269
	Private	48	3.11	1.323	0.312
Q16	Public	37	4.21	0.419	0.096
	Private	48	3.61	0.979	0.231
Q17	Public	37	4.21	0.419	0.096
	Private	48	4.17	0.383	0.09
Q18	Public	37	3.42	1.261	0.289
	Private	48	3.5	0.985	0.232

Banks	Mean	N	SD
Public Banks	3.87	666(N1)	0.99
Private Banks	3.49	864(N2)	1.092867
Standard Error	0.080978		

Z-Test	4.62790143	ta	

Conclusion

Employees play a pivotal role in a highly competitive business environment, and prioritising employee performance over cost reduction can potentially result in financial challenges. In India, banks have acknowledged the significance of Human Resource Management (HRM) due to the sustained popularity of traditional banking services. In order to optimise employee satisfaction, banks should prioritise various factors including participation, involvement, compensation, incentives, communication, promotion, training and development, performance appraisal, work design, and selection. The implementation of these strategies holds equal importance; however, it is imperative for organisations, particularly in the banking sector, to adopt a comprehensive set of HR practices. This is crucial in fostering employee commitment and trust. The study indicates that there is a lack of disparity in HR practices between private and public sector banks. However, upon analysis, it becomes evident that there are variations in the work environment across different banks. This highlights the necessity for implementing a comprehensive HR strategy.

Suggestion

This study proposes recommendations for business leaders and the banking industry in India regarding the development of human resource practices. Commercial banks in India have successfully implemented career planning appraisal systems as a strategic measure to enhance their competitive edge. Private sector employees have the opportunity to advance in their careers based on their individual performance, whereas public sector employees may receive promotions in accordance with established policies and guidelines. The study proposes the implementation of a "open appraisal system" that involves the disclosure of reviewer ratings. This system would facilitate transparent discussions between managers and employees, enabling the identification of areas for improvement in performance. The objective of institutional training is to equip employees with effective skills, while also minimising any existing competency gaps.

The utilisation of computer and information technology can facilitate the process of resigning, while promotions should ideally be determined based on an individual's job performance. The evaluation of employee potential should be conducted in an objective manner, free from any form of favouritism. It is recommended to enhance transparency in evaluation and promotion policies.

Transfers within both banks are conducted in accordance with the respective bank policies, while employees have expressed a keen interest in seeking enhancements. The implementation of an equitable transfer policy, along with the provision of supplementary benefits, can serve as a compelling incentive. It is recommended to incorporate activities for bank staff meetings, brainstorming sessions, and study circles.

The study is subject to certain limitations, which include its narrow focus on the city of Mumbai, constraints in obtaining primary data, and the inability to conduct an extensive survey or collect data from bank executives due to confidentiality concerns and their demanding work schedules.

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The Unemployment Landscape for Minorities in India with a Special Focus on the Muslim Communities

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Abstract
In this research paper, the author attempts to explore jobless growth and its impact on Minorities. The study is based on secondary data. The author has used Census and Other Reports for this Study. The study highlighted the concerns related to the unemployment of Minorities, specifically the Muslim Minority. The study also ponders on the disparities seen in employment amongst various religions in India and tries to find out the reasons behind it.
Keywords: Minorities, Muslim, Education, Employment

Introduction:
Labour force participation rate is a measure of the proportion of a country's working-age population that engages actively in the labour market, either by working or looking for work. The unemployment rate is the number of unemployed people divided by the working population or people working in labour force.
Unemployment rate = (Unemployed Workers / Total labour force) × 100.
The term unemployment refers to a state in which an individual actively seeks employment but is unsuccessful. It is considered one of the key measures of the economy's strength. The unemployment rate is the most widely used method to determine a country's unemployment rate. This can be found by simply dividing the number of people without jobs by the total population included in a nation's labor force.

The Following Observations were seen while studying some secondary Sources
Increasing Trend observed in Worker Population Ratio (WPR) for persons of age 15 years and above
As per the data given by the Ministry of Statistics & Programme Implementation Report 2023, WPR for males in India increased from 68.6% in 2017-18 to 73.5% in 2022-23, and a corresponding increase in WPR for females was from 19.2% to 30.0%. In rural areas, WPR increased from 44.8% in 2017-18 to 54.2% in 2022-23, while for urban areas, it increased from 42.6% to 46.0%.
Decreasing Trend in Unemployment Rate (UR) for persons of age 15 years and above
In rural areas, UR decreased from 5.3% in 2017-18 to 2.4% in 2022-23 while for urban areas it decreased from 7.7% to 5.4%. UR for males in India decreased from 6.1% in 2017-18 to 3.3% in 2022-23 and the corresponding decrease in UR for females was from 5.6% to 2.9%. (Source: Ministry of Statistics & Programme Implementation Report 20231).

According to the 2011 Census of India, the work participation rate (WPR) for the six major religious communities in India, viz., Hindus, Muslims, Christians, Sikhs, Buddhists and Jains are presented in the table below in descending order of their numeric strength .

Religion	Work Participation Rate
Other religions	48.4%
Buddhists	40.6%
Hindus	40.4%
Christians	39.7%
Sikhs	39.1%
Muslims	33%

Muslims have the lowest share of working people, about 33% among all religious communities in India. This is lower than the national average work participation, which was 25.51.The figure for Jains and Sikhs stands at 36% each. Buddhists stand at about 40 %, Women's participation is 15% for Muslims and Sikhs, and only 12% in Jains. Among Hindus, 27% are working women, while it is 31% for Christians and 33% for Buddhists. One of the reasons for a low work participation rate among Muslim communities is mainly a result of the very low economic participation of Muslim women, especially in urban areas of the country (Papola, 2012; Planning Commission, 2012).

Some Disparities seen in Employment data across various Studies
As far as Regular wage work is concerned, the caste difference within Muslim women or within Hindu women matters much less than the difference between Hindu and Muslim women as a whole. Compared to Hindu women, Muslim women are far less likely to be in regular wage work, controlling for age, education, state of residence and other factors. The employment structure varies far more across gender and caste identities than it does across religion.

But, it is worth noting that Muslims are less likely to hold regular wage jobs and more likely to be in own account or casual wage work over the entire four-decade period after controlling for education, household size, state and other relevant factors. The persistent under-representation in regular wage work was noted in the **Sachar Committee Report of 2006** as well and continues to be a matter of concern.

Further, in the **Azim Premji University Report 2023**, a similar negative relationship between the representation index and average earnings also exists for Muslims. Street and related sales and services workers; and food processing, woodworking, garment and other craft and related trades workers are two low-earning occupations where Muslims are most over-represented.

Information and communications technicians and professionals, science and engineering professionals, production and specialized service managers are again the higher-earning occupations where Muslims are most under-represented.

Muslims are over-represented in low paying occupations while Hindus are overrepresented in high-paying ones

New Delhi (Wire): A significant number of individuals in India are engaging in self-employment or unpaid labour, shows the Periodic Labour Force Survey (PLFS) data, for July 2022 to June 2023.Moreover, the data highlights that, among the major religious groups, only Muslims have experienced a decline in their labour force participation rate (LFPR) and worker population ratio (WPR).

On a positive note, the latest data indicates that India's unemployment rate for individuals aged 15 and above has reached a six-year low, standing at 3.2%. The data shows a decrease in the unemployment rate in rural areas from 5.3% in 2017-18 to 2.4% in 2022-23, and in urban areas from 7.7% to 5.4%.

The **Periodic Labour Force Survey (PLFS) data** was launched by the National Sample Survey Office in April 2017. It estimates the key employment and unemployment indicators such as Worker Population Ratio, Labour Force Participation Rate, and Unemployment Rate. It further measures the employment status among social and religious groups. Among the major religious groups, it names "Hinduism, Islam, Christianity and Sikhism".

On a positive note, the latest data indicates that India's unemployment rate for individuals aged 15 and above has reached a six-year low, standing at 3.2%. The data shows a decrease in the unemployment rate in rural areas from 5.3% in 2017-18 to 2.4% in 2022-23, and in urban areas from 7.7% to 5.4%.

Statement 20: Labour Force Participation Rate (in per cent) according to usual status (ps+ss) for major religious groups estimated from PLFS (2020-21), PLFS (2021-22) and PLFS (2022-23)

all-India

major religious groups	rural			urban			rural+urban		
	male	female	person	male	female	person	male	female	person
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
PLFS (2022-23)									
Hinduism	57.8	33.6	45.9	58.9	21.5	40.8	58.1	30.5	44.5
Islam	45.3	14.7	31.7	55.8	12.6	34.7	47.7	14.2	32.5
Christianity	57.8	38.0	47.7	55.4	29.2	42.0	57.0	35.1	45.8
Sikhism	63.1	25.7	44.6	61.8	16.6	39.3	62.8	23.5	43.3
all	55.5	30.5	43.4	58.3	20.2	39.8	56.2	27.8	42.4
PLFS (2021-22)									
Hinduism	57.2	28.4	43.0	58.8	19.6	39.7	57.6	26.1	42.1
Islam	53.6	16.5	35.3	56.4	12.0	34.7	54.6	15.0	35.1
Christianity	57.0	36.8	46.8	55.8	29.6	42.3	56.6	34.2	45.2
Sikhism	61.5	20.4	42.2	58.4	17.6	38.9	60.8	19.8	41.4
all	56.9	27.2	42.2	58.3	18.8	39.0	57.3	24.8	41.3
PLFS (2020-21)									
Hinduism	57.5	28.9	43.5	58.8	19.5	39.6	57.8	26.3	42.4
Islam	53.6	17.1	35.7	57.1	11.9	35	54.8	15.3	35.5
Christianity	57.6	33.0	45.1	55.3	27.1	40.9	56.8	30.9	43.6
Sikhism	59.1	21.0	40.5	54.9	15.3	35.6	57.9	19.4	39.1
all	57.1	27.7	42.7	58.4	18.6	38.9	57.5	25.1	41.6

2022-23 refers to the period July 2023 – June 2023 and likewise for 2021-22 and 2020-21

PLFS for July 2022 to June 2023, shows notably, the PLFS survey shows that among major religious groups, the labour force participation rate (LFPR) and worker population ratio (WPR) of only Muslims have declined.

The labour force participation rate is the share of the population which is looking for work, and the worker population ratio is the share of the working age population that has work.

The LFPR for ages 15 years and above increased to 57.9% in 2022-23 from 55.2% in 2021-22 and 54.9% in 2020-21. It was 49.8% in 2017-18 and 50.2% in 2018-19.

The WPR for persons aged 15 years and above increased to 56% in 2022-23 from 52.9% in 2021-22 and 52.6% in 2020-21.For Muslims, the LFPR stood at around 35.5% in 2020-21 and 35.1% in 2021-22. It declined to 32.5% in 2022-23. "In other words, from lower than national LFPR and WPR, Muslims have seen further falls," Mehrotra said, explaining this data point. Similarly, the WPR for Muslims stood at 33.9% in 2020-21 and 33.5% in 2021-22. It declined to 32.5%.

"So, the LFPR sees a 2.6 percentage points decline as compared to 1.8 percentage points decline in the WPR. This shows Muslims are not looking for work," Mehrotra said.

According to Mehrotra, this is clear evidence that the Muslims have taken the brunt of the fall in jobs even though the labour market should have revived after COVID-19. “This is [the data] for the first full post-COVID-19 year,” he added. He further explained that “Muslims have a higher share in the urban population than their share in the rural population. [This is] because most Muslims live in urban areas. So, when the labour market revived in the first post-COVID year, unfortunately, there’s has been a sharp 2 percentage point decline in the WPR of Muslims.”
“[Noted that] WPR tracks the LFPR. As the labour market revived, this is clear evidence that the Muslims have taken the brunt,” he said.
NSSO also revealed that unemployment for Muslims in India is edging downward, but this is somewhat misleading since many Muslims are self-employed and are not even included among the salaried class of workers. In Urban India, only 30.4 percent of Muslims belong to the established workforce
Rakesh Basant, Professor of Economics at the Indian Institute of Management-Ahmedabad, told First Post that Muslims are forced into self-employment due to low educational attainments. “There are not many good schools in Muslim neighborhoods [or in] many [other] marginalized communities,” he said. “This is a problem in [the] supply side. Participation in education goes up when supply of educational institutions is addressed.”
Professor Abusaleh Shariff, of Centre for Research and Debates in Development policy, New Delhi and a visiting scholar to US India Policy Institute in Washington DC, also attributes discrimination to the plight of Indian Muslims. “They [Muslims] do not get jobs [corresponding to the] qualifications, both due of market imperfections and also due to bias in the system,” he said. Even in rural areas, they do not even get employment under the [government’s National Rural Employment Guarantee Act project].”

Some Causes of Unemployment as Stated by Researchers

- Inadequate Economic Growth
- Education Level
- Increase in Population
- Agriculture: A Seasonal Occupation
- Loss of Small-Scale/Cottage Industries
- Ineffective Economic Planning
- Labor Immobility
- Job Specialization and Skilling
- Privatization in Govt. Sectors

Conclusions

On the recommendations of the Sachar Committee report, the Government of India has started many welfare schemes for the upliftment of Muslims and other minorities. But, the literature review suggests that the socio-economic conditions of Muslims remained very unsatisfactory. The literacy rate of all the religious minorities except Muslims was above the national average. The low literacy rate among Muslims is a matter of serious concern, it is therefore suggested that efforts should be made to increase the level of literacy among Muslims in particular and among all the population in general to improve the literacy rate and minimize the inequalities in the literacy rate among various religious communities in the country.
The high cost associated with higher education was an important deterrent to participation in higher education among Muslims characterized by a high incidence of poverty. The low participation of Muslims in higher education may adversely affect their employability in terms of quality of jobs. High incidence of poverty and low participation in higher education feed on each other (India Human Development Report 2011).

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Framing Research Objectives and Selecting Appropriate Statistical Tools: An Exploratory Study

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Abstract
The formulation of clear research objectives and the subsequent selection of suitable statistical tools are critical steps in conducting effective research. This study systematically explores how to frame different types of research objectives and how to choose appropriate univariate, bivariate or multivariate statistical techniques accordingly. Through examples from stress management studies, banking awareness surveys, customer satisfaction research and many more, the study illustrates the direct link between the nature of objectives and the selection of analytical methods. The insights generated offer a structured approach for researchers to enhance the precision and validity of their studies.

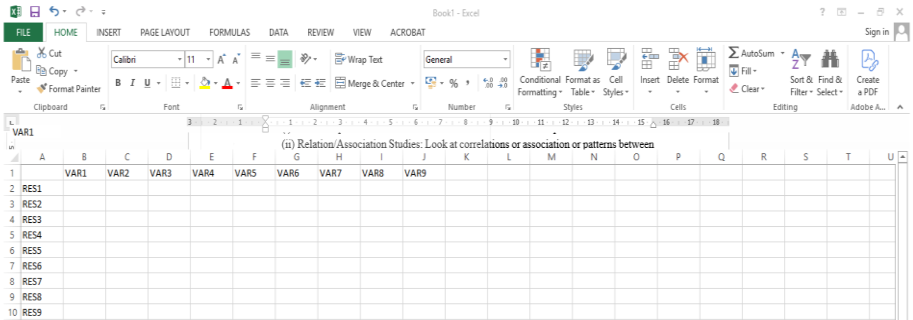
Introduction
The success of any empirical research largely depends on two early steps: defining precise objectives and selecting the appropriate statistical analysis method. Still Researcher donot know how to design sampling frame, write Objectives and Hypothesis? What is the relationship between hypothesis and objective? Without clear objectives, studies risk becoming unfocused, and without correct analytical techniques, even well-designed studies may yield invalid conclusions. Given the increasing complexity of modern research problems, especially in interdisciplinary fields, the ability to match objectives to statistical tools is vital for generating credible, actionable knowledge.
This paper presents a structured framework for:

- Framing different types of objectives (effect, impact, relation, association, etc.)
- Selecting suitable statistical tools (univariate, bivariate, multivariate) based on those objectives.

Objectives
The main objectives of this study are:
(i) To understand the principles behind framing specific, measurable, and researchable objectives.
(ii) To map the types of objectives to appropriate statistical tools.
(iii) To illustrate objective-tool matching through practical examples.
(iv) To develop a reference framework for future researchers to follow.

Literature Review
Research methodology scholars like Kumar (2019) and Kothari & Garg (2019) emphasize the importance of having well-structured objectives before designing a study. Similarly, Field (2016) highlights that the choice of statistical tools depends on:
(i) The number of variables involved
(ii) The nature (metric/non-metric) of variables
(iii) The research intention (descriptive, predictive, explanatory) and Sampling frame.
Naresh Malhotra (2021) further discusses how marketing researchers align objectives with multivariate tools like regression, discriminant analysis, and ANOVA, depending on study needs.
Thus, a strong literature base supports the necessity of aligning objectives with statistical methodology carefully and scientifically.

Methodology
The methodology followed in this study is based on:
1.1 Objective Framing Types:
(i) Effect/Impact Studies: Examine cause-and-effect relationships.
(ii) Relation/Association Studies: Look at correlations or association or patterns between variables.
(iii) Comparative Studies: Focus on compare or differentiate across groups.
1.2 **Data Entry:**
In Excel Sheet, rows represented by respondents and columns by variables as follows:



1.3 Selection of Tools Based on Objectives:

Analysis is of three types

(i) Univariate: This means study of one variable
(ii) Bivariate: This means study of two variables.
(iii) Multivariate: This means study of more than two variables.

First identify how many variables are involved and nature of variable Continuous /Metric or Categorical/Non-Metric/discrete.

Table 1: Uni-variate Analysis	
	One variable
Metric	Mean, Median, Sigma, 1-sample t-test
Non-Metric	Count, Percent

Table 2: Bi-Variate Analysis

	Dependent Variable	
Independent Variable	Metric	Non-Metric
Metric	Correlation Simple Regression	Linear Discriminant Analysis Binary Regression
Non-Metric	Hypothesis testing	Cross-tab / Chi square test

Table 3: Mixed Analysis

		One Dependent Variable		
		Metric		Non-Metric
Repeat Measurement		Normally Distributed	Not Normal /distribution Free	
One independent Variable		Paired t-test	Wilcoxon Paired t-test	McNemar test
> One independent Variable	All metric	Repeat Measure ANOVA	Friedman test	
	All Non-metric	Factorial/ Repeat Measure ANOVA	Friedman test	Cochran test
	Mixed	Factorial/ Mixed ANOVA	General Linear Equation	

Table 3a: Multivariate Analysis

		One Dependent Variable			> One Dependent Variable			Inter dependency
		Metric		Non-metric	Metric		Non-metric	
		Normally Distributed	Not Normally Distributed		Normally Distributed	Not Normally Distributed		
One Independent Variable	Metric	Simple Regression	Simple Regression	Logistic Regression Linear Discriminant Analysis (LDA) Multinomial Regression	Path Analysis, Neural Network	Path Analysis, Neural Network	Log-linear Model, Neural Network	
	Non-Metric	t, z, 1 way ANOVA	U, H, Median, 2 sample Kolmogorov Smirnov test	Cross Tabulation, Chi square test, Correspondence Analysis, Multi nominal Regression	1-way MANOVA, Neural Network	Generalized Linear Model, Neural Network	Log-linear Model, Neural Network	
> One Independent Variable	All Metric	Multiple Regression	Multiple Regression, Generalized Linear Model	Logit Regression Linear Discriminant Analysis (LDA) Multi nominal Regression	Path Analysis, Neural Network	Path Analysis, Neural Network	Log-linear Model, Neural Network	Exploratory / Confirmatory Factor Analysis, Cluster Analysis
	All Non-Metric	n-way ANOVA	Multiple Regression with Dummy variables / Generalized Linear Model	Multi-nominal Regression / Log-linear Model	n-way MANOVA, Neural Network	Generalized Linear Model, Neural Network	Log-linear Model Neural Network	Conjoint Analysis
	Mixed	n-way ANCOVA	Multiple Regression with Dummy variables / Generalized Linear Model	Multinomial Regression / Log-linear Model	n-way MANCOVA, Neural Network	Generalized Linear Model, Neural Network	Log-linear Model, Neural Network	Neural Network

1.4 **Illustrations** :

[1] To study the awareness level of the NEP2020 (National Education Policy2020) in HSNC University in Mumbai.

Here and attempt is made to understand how to find variables in any objective. Just like the analysis objectives are also univariate, bivariate and multivariate. First, we have to find variables in the objectives and decide whether they are univariate, bivariate and multivariate. In the first objective, with simple knowledge of English language let's understand variable and constants in above objective difference between variable and constant is that which is the same for all people becoming constant and which changes for people treated as variable.
Variable: Gender. Categories: Men / Women.
Only Mumbai - Constant (It is not performed in other districts of Maharashtra)
Similarly, HSNC University is constant, NEP 2020 is constant.
Variable =1
Implying Univariate Analysis.
The following three topics are based on it

- Central tendency
- Dispersion
- Skewness and Kurtosis.

We can use all three but take pause and check the objective. What questions comes to mind? What is the level of awareness? Then check how it is measured?
Measurements are

- Nominal
- Ordinal
- Interval and
- Ratio

To know awareness level, I will simply ask a question- Are you aware about National Education Policy? Options are yes or no so it becomes nominal measurement then we can apply only frequency or percentage.
Out of 100, 60 people responded as yes so percentage is 60/100=60% but now researcher wish to apply t- test. To apply t test, you need one more variable. Again, check the objective, Is your analysis answered objective. Response is yes, awareness level is 60% why do we use?

Alternative Method:
I am discussing measuring awareness level as a construct using a summative rating Likert scale.
Awareness Level Measurement---(I)
Awareness level is a latent construct measured using multiple statements (e.g., 5, 7, or 10 items) on a Likert scale. Respondents rate their agreement with each statement using anchors (e.g., 1-5 or 1-7).
Methodology
1. Scale Development: Create a summative rating scale with multiple items (statements) to measure awareness level.
2. Data Collection: Administer the scale to respondents, who rate their agreement with each item.
3. Scoring: Calculate the total score for each respondent by summing their ratings across all items.

Interpretation
Based on the total score, awareness levels can be categorized:
- Low Awareness (Score < 10): Respondents may exhibit limited knowledge or understanding.
- Moderate Awareness (Score 10-20): Respondents demonstrate some knowledge, but may lack depth or nuance.
- High Awareness (Score > 20): Respondents exhibit strong knowledge and understanding.

Benefits
Using a summative rating scale provides:
1. Quantifiable data: Allows for statistical analysis and comparison.
2. Reliability: Multiple items increase the reliability of the measurement.
3. Validity: Can be validated through statistical analysis and expert review.

By using this methodology, you can effectively measure awareness levels and analyze the results to inform decision-making or interventions.

[2] To study the awareness level of the NEP2020 in HSNC University and University of Mumbai in Mumbai.

In this Objective, Mumbai is constant. Two universities are there so name variable will be University and it has two categories viz HSNC University and Mumbai University. Two variables are University: HSNC/Mumbai and Awareness level. For 2 variables, tests available are Regression, Hypothesis Testing, Cross Tabulation and Binary Regression.
To compare or differentiate awareness levels between HSNC University and Mumbai University.
Variables
1. Dependent Variable (DV/Outcome): Awareness Level (Yes/No)
2. Independent Variable (IDV/Predictor): University (HSNC/Mumbai)
Identification of Dependent and Independent Variables
1. Review of Literature: Previous studies may have explored awareness levels in similar contexts.
2. Common Sense: Awareness level is likely influenced by the university's advertisement efforts.
3. Expert Opinion: Consult with mentors, guides, or experts in the field for validation.
Measurement
Both variables are nominal:
1. Awareness Level: Yes/No (two categories)
2. University: HSNC/Mumbai (two categories)
Statistical Analysis
Given the nominal nature of both variables, a Cross-Tabulation (Contingency Table) analysis would be suitable to examine the relationship between awareness levels and universities.
By using cross-tabulation, you can explore the relationship between these two variables and gain insights into how awareness levels vary between the two universities.

[3] To study the relation of Awareness level and Satisfaction level of the NEP2020 (National Education Policy2020) in HSNC University in Mumbai.
I am discussing measuring awareness level as well as Satisfaction level as a construct using a summative rating Likert scale separately using (I). Compute correlation coefficient between total scores of two Constructs namely (Refer Table 2).

[4] To study the factors influencing customer satisfaction in the retail banking sector.
To study the factors, Factor Analysis (Refer Table 3a) is used which is a multivariate technique used to identify underlying factors that explain the correlations and relationships among a set of variables.

Types of Factor Analysis
1. Exploratory Factor Analysis (EFA): Used when there is limited prior research or knowledge about the factors influencing customer satisfaction in retail banking. EFA helps identify underlying factors and their relationships.
2. Confirmatory Factor Analysis (CFA): Used when there is existing research or theoretical framework guiding the study. CFA tests whether the data fits a pre-specified factor structure.

Methodology
1. Data Collection: Gather 30-40 statements related to customer satisfaction in retail banking from officials or existing literature.
2. Questionnaire Administration: Get the questionnaire filled by respondents.
3. EFA or CFA: Apply EFA if no prior studies exist, or CFA if prior research guides the study.
4. Identifying Underlying Factors: Factor analysis helps identify the underlying dimensions driving customer satisfaction.
5. Reliability and Validity: Assess the reliability and validity of the factors using statistical measures.
6. First-Order Constructs: Use first-order constructs to examine the relationships between individual factors and customer satisfaction.

Key Considerations
1. Multivariate Technique: Factor analysis is a multivariate technique that examines relationships among multiple variables.
2. Relationship between Factors: If relationships between factors are not studied, the analysis becomes multiple univariate analyses.
By using factor analysis, you can gain insights into the complex relationships between various factors influencing customer satisfaction in retail banking.

[5] To study the effect of demographic variables on various factors leading to customer satisfaction.

Use SPSS Amos to do factor analysis and identify underlying factors influencing customer satisfaction. Also, compute factor score of each of the factors. Analyze the effect of demographic variables (non-metric) on these factors.
Statistical Analysis: Given the nature of the variables (Refer Table 3a)
1. t-test: Use t-test to compare the means of two groups (e.g., male vs. female) for each factor.
2. ANOVA (Analysis of Variance): Use ANOVA to compare the means of three or more groups (e.g., different age groups) for each factor.
3. MANOVA (Multivariate Analysis of Variance): Use MANOVA to examine the effect of demographic variables on multiple factors simultaneously.

[6] To make a comparative analysis of present state of customer satisfaction in public and private banks

Compare customer satisfaction levels between public and private banks, examining factors such as:
1. Service quality
2. Product offerings
3. Branch operations
4. Digital banking experiences
5. Complaint resolution

Compare mean level of above factors between public and private banks using t-tests or ANOVA (Refer Table 3a) or examine the relationship between bank type and customer satisfaction, controlling for demographic variables. This analysis will help identify areas where one type of bank excels over the other, providing insights into best practices.

[7] To suggest the ways for the banks to improve their satisfaction level of customer

Suggestions for Improvement (Refer Table 3a)
1. Factor Analysis: Identify underlying factors driving customer satisfaction (e.g., service quality, digital experience).
2. Correlation Analysis: Examine relationships between satisfaction factors and overall satisfaction.
3. Predictive Modeling: Develop models to predict customer satisfaction based on bank attributes and customer characteristics.

[7] To evaluate the influence of gender and background of students on their marks.

Researcher may think that it is case of Multivariate
- Number of variables =3 (DV=1(Student's marks), IDV=2(Gender: Male, Female, Background of Students: Rural, Urban))
- Intention is to check the effect/relation
- ✓ Principle of Split: If all independent variables (IVs) are non-metric and separate effects are to be studied → Split objectives into bivariate analyses, hence applying Principle of Split, we can bifurcate this objective in two-bivariates.
- ✓ To evaluate the influence of gender on their marks.
- ✓ To evaluate the influence of background of students of their marks.
- ✓ Bivariate Objective (Refer Table-2): Use t or Z test

[8] To predict the student's marks on the basis of number of hours of preparation, interest in subject, gender of student and parent's income.

- Number of variables =5 (DV=1, Metric IDV=2, Non metric IDV=2)
- Intention is to check the effect/relation
- Some IDVs will be metric, hence we cannot apply the Principle of Split.
- Multivariate Objective (Refer Table-3a)

[9] To predict the student's marks on the basis of number of hours of preparation, interest in subject and the gender of student, controlling for the parent's Socio-Economic Status (SES).

- Number of variables =5 (DV=1(student's marks), Metric IDV=2(number of hours of preparation, interest in subject), Non metric IDV=1(gender of student), CV=1(SES))
- Intention is to check the effect/relation
- Some IDVs will be metric, hence we cannot apply the Principle of Split.
- Multivariate Objective (Refer Table-3a) and Use Multiple Hierarchical Regression.

[10] Impact of Bournvita on height of children under 5.

- Number of variables =2(DV=1(Height of students) , Non metric IDV=1(time period :Pre , Post))
- Pre-post measurements of height study
- Bivariate Objective (Refer Table-2) and use Paired t-test.

[11] To see the effect of season and territory on sales.

- Number of variables =3(DV=1(Sales) , Non metric IDV=2 (season and territory))
- Two-way ANOVA: Examine the main effects of season and territory on sales, as well as their interaction effect.

[12] To see the effect of season and territory on sales with advertisement as covariate

- Number of variables =3(DV=1(Metric: Sales), Covariate=1(Metric: Advertisement Expenditure) Non metric IDV=2 (Season and Territory))
- Multivariate Objective (Refer Table-3a) and check relationship between Sales and Advertisement Expenditure before using Two way ANCOVA
- **Analysis of Covariance (ANCOVA):** Control for the effect of advertisement expenditure on sales while examining the main effects of season and territory, as well as their interaction effect.

[13] To investigate the association between purchase frequencies of tickets, price of ticket and choice of class.

- Number of variables =3 (No idea of DV)
- Intention is to check the effect/relation
- All IDVs will be non-metric but there is no DV
- Multivariate Objective (Refer Table-3a) and use Log linear Analysis

[14] To investigate the effect of purchase frequencies of tickets, price of ticket on choice of class.

- Number of variables =3 (Non metric DV=1, Non metric IDVs=2)
- Intention is to check the effect/relation
- Multivariate Objective (Refer Table-3a) and use Logistics Regression.

Conclusion

The study demonstrates that objective framing and tool selection are deeply interconnected. Poorly framed objectives lead to ambiguous results, while mismatched statistical techniques compromise the credibility of findings. Researchers must start with:

- Clear articulation of the type of relationship they want to study (effect, relation, comparison).
- Careful identification of variable types (metric vs non-metric).
- Informed selection of appropriate statistical tools.

Following a structured objective-tool mapping significantly enhances research quality, interpretation accuracy, and the practical relevance of findings.

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