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– राठोड अंकिता एकनाथ, प्रा. डॉ. सौ. सनानसे कांचन

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Industrial Clusters and Global Competitiveness in an Emerging Economy : Evidence from Maharashtra, India

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Abstract

Industrial clusters are widely recognized as engines of productivity, innovation, and export competitiveness, yet evidence from emerging economies remains fragmented and often descriptive. This paper advances the literature by examining how state-led infrastructure, institutional coordination, and local capabilities jointly shape cluster-based global competitiveness in Maharashtra, India's most industrialized state. Using a comparative multi-cluster case study design and secondary data on exports, industrial output, logistics connectivity, and institutional support, the paper analyses four representative clusters: Pune's automotive cluster, the Marathwada Auto Cluster in Aurangabad, the Nashik agro-processing and wine cluster, and the JNPT–Navi Mumbai port-led logistics and manufacturing cluster. The findings show that clusters embedded in strong institutional ecosystems and global logistics networks demonstrate superior integration into global value chains, while peripheral clusters rely more heavily on targeted public intervention to overcome scale and capability constraints. The study contributes to cluster and regional development theory by demonstrating how state-mediated agglomeration can substitute for institutional voids in emerging economies. Policy implications are drawn for sustainable and inclusive industrial competitiveness.

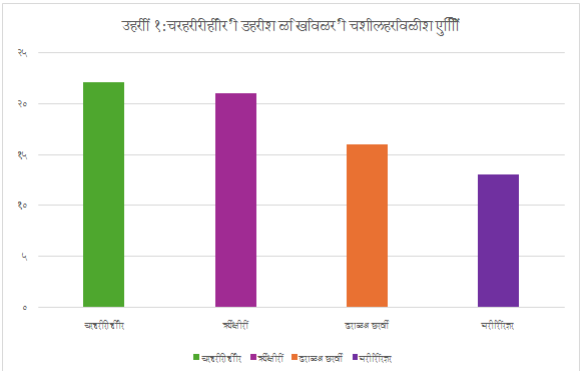
Keywords : Industrial clusters, global competitiveness, emerging economies, Maharashtra, institutions, global value chains

1. Introduction

The resurgence of interest in industrial clusters reflects their central role in enhancing productivity, innovation, and international competitiveness (Porter, 1998; Delgado, Porter, & Stern, 2014). While extensive empirical evidence from advanced economies highlights the benefits of agglomeration, less is known about how clusters operate in emerging economies characterized by institutional voids, infrastructure deficits, and uneven regional development. In such contexts, the state often plays a decisive role in shaping cluster trajectories.

India offers a particularly relevant setting for examining these dynamics. As the country pursues manufacturing-led growth and export diversification, cluster-based industrial policy has emerged as a key strategic instrument. Maharashtra, contributing a disproportionately large share of India's manufacturing output and exports, provides a natural laboratory to study how local strengths are translated into global competitiveness through clustering.

Figure 1. Maharashtra's dominance in India's merchandise exports highlights the state's strong cluster-based manufacturing and logistics ecosystem.



Source : Government of India, Export Import Data Bank; Ministry of Commerce (2022–23)

Despite a growing body of work on Indian industrial clusters, existing studies remain largely descriptive or sector-specific, offering limited theoretical generalization. This paper addresses this gap by asking: How do state-led institutions, infrastructure, and local capabilities interact to shape the global competitiveness of industrial clusters in

an emerging economy? By adopting a comparative, theory-informed approach, the study seeks to contribute to both cluster theory and the literature on regional development in emerging economies.

2. Theoretical Framework and Literature Review

2.1 Cluster Theory and Competitiveness : The concept of industrial clusters originates in Marshall's (1920) analysis of industrial districts, emphasizing labour pooling, specialized suppliers, and knowledge spillovers. Porter (1998) later formalized clusters as drivers of competitive advantage through productivity enhancement and innovation. Recent empirical work demonstrates that clusters foster firm entry, growth, and resilience, particularly when embedded in dense institutional ecosystems (Delgado et al., 2014).

2.2 Clusters in Emerging Economies : In emerging economies, cluster dynamics differ markedly from those in advanced regions. Weak institutions, skill shortages, and infrastructure gaps often constrain private coordination, increasing reliance on public intervention (Rodríguez-Pose & Wilkie, 2019). Studies on Asian and Latin American clusters suggest that state-provided infrastructure and collective facilities can partially compensate for these deficits, enabling SME upgrading and export participation (UNIDO, 2015).

2.3 Global Value Chains and Institutional Mediation : Global value chain (GVC) theory highlights how firms integrate into international production networks through governance structures shaped by lead firms and institutions (Gereffi, Humphrey, & Sturgeon, 2005). For clusters in emerging economies, proximity to ports, logistics infrastructure, and compliance-support institutions is critical for upgrading and sustained competitiveness.

2.4 Research Gap : While the literature acknowledges the importance of institutions and infrastructure, there is limited comparative evidence on how state-mediated cluster development operates across different sectors and regions within the same emerging economy. This study addresses this gap by comparing multiple clusters within Maharashtra under a unified analytical framework.

3. Methodology

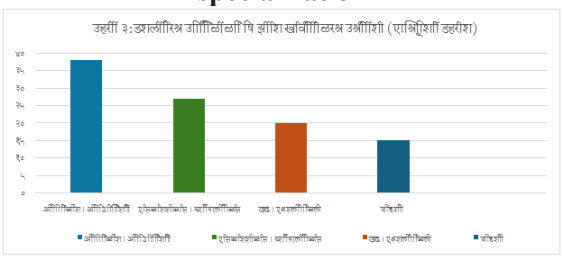
The study adopts a comparative qualitative case study design supported by secondary quantitative indicators. Four clusters were selected based on sectoral diversity, export orientation, and regional variation. Data sources include state economic surveys, industrial development agency reports, port statistics, and cluster-level documentation.

Competitiveness is assessed using indicators such as export orientation, firm density, institutional support intensity, and logistics connectivity. Cross-case comparison enables identification of common mechanisms and context-specific variations.

4. Cluster Case Studies

4.1 Pune Automotive Cluster : The Pune–Pimpri Chinchwad automotive cluster represents a mature, globally integrated agglomeration hosting multinational OEMs and dense supplier networks. Strong institutional thickness engineering institutes, R&D centers, and specialized cluster organizations facilitates innovation and supplier upgrading. Integration into global automotive value chains has enabled local firms to meet international quality and delivery standards.

Figure 3. Sectoral concentration in the Pune cluster reflects strong agglomeration economies and supplier specialization



Sources: MIDC; Auto Cluster Development and Research Institute (Pune); Economic Survey of Maharashtra

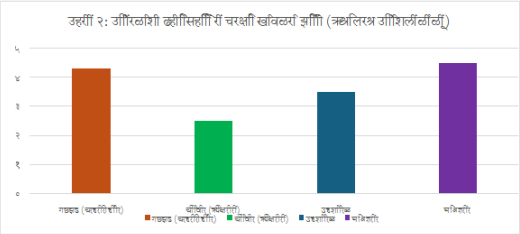
4.2 Marathwada Auto Cluster, Aurangabad : In contrast, the Marathwada Auto Cluster illustrates a policy-driven attempt to catalyse industrial development in a peripheral region. State-supported common facilities and infrastructure upgrades have reduced entry barriers for SMEs, enabling limited but growing integration into automotive supply chains. The case highlights the substitutive role of public institutions in early-stage cluster formation.

4.3 Nashik Agro-processing and Wine Cluster : Nashik's agro-processing cluster leverages natural endowments and institutional branding mechanisms such as Geographical Indications. While global integration remains selective, institutional support for quality certification and export promotion has enhanced value addition and market access.

4.4 JNPT–Navi Mumbai Port-led Cluster : The port-led cluster around JNPT demonstrates the critical role of logistics and connectivity in global competitiveness. Proximity to India's

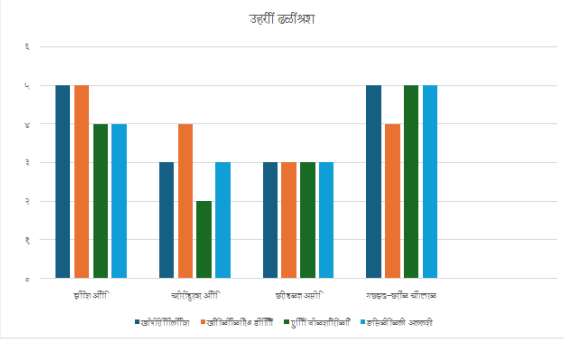
largest container port significantly lowers transaction costs and facilitates participation in GVCs across manufacturing sectors. Following chart 2 displays the JNPT's container throughput underscores Maharashtra's strategic role in India's global value chain integration

Figure 2. JNPT's container throughput underscores Maharashtra's strategic role in India's global value chain integration



Sources : Jawaharlal Nehru Port Authority Annual Report (2022–23); Ministry of Ports, Shipping and Waterways

Figure 4. Comparative competitiveness of major industrial clusters in Maharashtra.



Sources : compilation based on MIDC, JNPT, DEAP, and industry reports

5. Comparative Analysis and Discussion

Cross-case comparison reveals three key mechanisms. First, institutional thickness amplifies agglomeration benefits by facilitating coordination and learning. Second, logistics connectivity emerges as a decisive factor for GVC integration. Third, state intervention plays a differentiated role: catalytic in peripheral clusters and enabling in mature ones. These findings extend cluster theory by illustrating how state-mediated agglomeration can offset institutional weaknesses in emerging economies.

6. Policy Implications

The analysis suggests that cluster policy in emerging economies should move beyond generic incentives toward differentiated strategies tailored to cluster maturity. Investments in logistics, skill formation, and institutional coordination are critical for sustaining competitiveness, while environmental sustainability must be integrated to ensure long-term resilience.

7. Conclusion

This paper demonstrates that industrial clusters in Maharashtra derive global competitiveness not merely from geographic concentration but from the interaction of infrastructure, institutions, and global connectivity. By providing comparative evidence from an emerging economy, the study contributes to cluster theory and offers actionable insights for industrial policy. Future research could extend the analysis through firm-level data and cross-country comparison.

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A Study on Consumer Awareness and Understanding of Solar Products

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Abstract

The importance of solar energy as a clean and renewable resource has grown with the shift to sustainable energy. This study looks at consumer knowledge and comprehension of solar products as well as the variables affecting their uptake. A structured questionnaire was used to gather primary data from 84 respondents, and descriptive statistics were used for analysis. The results suggest that although consumers are somewhat to highly aware of solar products, there is still little actual uptake. The most popular devices are solar lights and water heaters, but significant obstacles include high starting costs, perceived lack of necessity, and a lack of useful information. The primary sources of awareness are the internet and social media.A sizable percentage of respondents said that they would be willing to accept solar products in the future, despite the low adoption rates. The study comes to the conclusion that in order to encourage broader use of solar energy, effective communication, financial incentives, and institutional activities are necessary in addition to awareness.

Keywords : Consumer Awareness; Solar Energy; Renewable Energy; Solar Products; Adoption Behaviour; Sustainable Development

1.1 Introduction

Renewable energy sources are now at the forefront of sustainable development initiatives due to the growing worldwide demand for energy and the pressing need to address climate change. Due to its abundance and declining cost of technology, solar energy has become a prominent choice among them. However, customer awareness and comprehension play a major role in the effective uptake of solar technologies. The purpose of this study is to find important aspects that affect customers' perceptions and decisions about solar energy solutions, as well as to examine consumers' knowledge and comprehension of solar products. By examining these aspects, the study aims to educate manufacturers, marketers, and legislators about the crucial issues that need to be addressed in order to improve consumer involvement with solar technologies.

1.2 Review of Literature

The literature on consumer awareness and understanding of solar products is extensive, yet gaps persist that warrant further investigation. Several studies have examined the factors influencing consumer adoption of solar energy. For instance, Wüstenhagen et al. (2007) identified economic, social, and technological factors that shape consumer decisions regarding renewable energy. Their research suggests that while price and financial incentives are significant, social norms and personal values also play crucial roles.

In another study, Tushar et al. (2019) highlighted the importance of consumer education in enhancing the adoption of solar technologies. They found that consumers with a higher level of understanding of solar products were more likely to invest in them. However, their research focused primarily on urban populations, leaving a gap in understanding consumer behavior in rural areas where solar products are increasingly being promoted.

Furthermore, a meta-analysis by Kwan et al. (2020) emphasized the role of marketing and communication strategies in shaping consumer perceptions of solar energy. Their findings indicate that effective communication can significantly improve consumer awareness and understanding, yet there is limited empirical research on the specific messaging that resonates with different consumer segments.

Despite these insights, there remains a lack of comprehensive studies that systematically assess consumer awareness and understanding across diverse demographic groups and geographic locations. This study

seeks to fill this gap by examining the factors influencing consumer perceptions of solar products in both urban and rural settings.

1.3 Rationale and Gap Analysis

This study is justified by the pressing need to switch to renewable energy sources, especially solar energy, in order to achieve energy sustainability and slow down climate change. Significant gaps in consumer awareness and comprehension of solar products are revealed by the literature now under publication. The majority of research has limited the generalizability of its conclusions by concentrating on certain demographic groups or geographical areas. Additionally, there is a dearth of scientific data regarding the efficacy of different tactics in raising consumer awareness, despite the recognition of the significance of education and communication strategies.

By performing a thorough review of consumer knowledge and comprehension of solar products across a variety of demographic groups and geographic locations, this study seeks to close these gaps. The study will give stakeholders involved in the promotion and adoption of solar technologies important insights by identifying important elements impacting consumer attitudes.

1.4 Objectives of the Study

1. To assess the level of consumer awareness and understanding of solar products among different demographic groups.
2. To identify the key factors influencing consumer perceptions and decisions regarding solar energy solutions.
3. To evaluate the effectiveness of various communication strategies in enhancing consumer awareness and understanding of solar products.

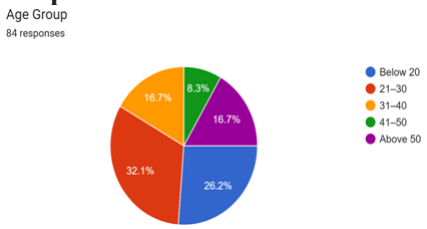
1.5 Hypotheses of the Study

1. **H1 :** There is a significant difference in consumer awareness and understanding of solar products between urban and rural populations.
2. **H2 :** Higher levels of education correlate positively with consumer awareness and understanding of solar products.
3. **H3 :** Effective communication strategies significantly enhance consumer awareness and understanding of solar products.

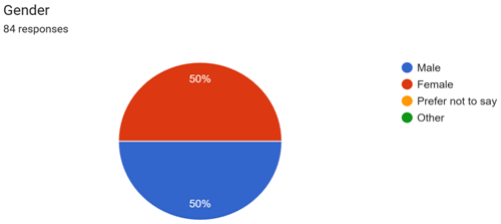
1.6 Research Methodology

- **Sample size :** The researcher in the study will use a sample size of 84 consumers.
- **Sampling method :** As the population is infinite, the researcher adopts a non-probability sampling technique.Purposive methods of sampling will be opted for in the present study.
- **Data collection :** The current paper is based on the study of primary data collected by using a structuredQuestionnaires. Closed-ended questions were included in the questionnaire.

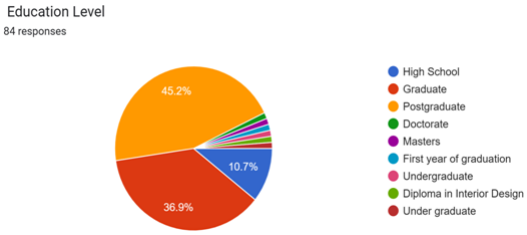
1.7 Interpretation of data



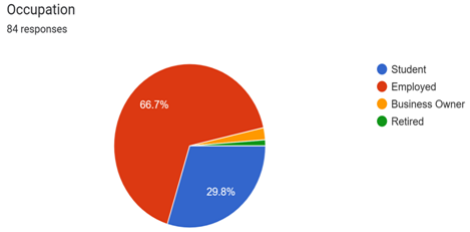
The age-wise distribution shows that the largest proportion of respondents belongs to the 21–30 years age group (32.1%), followed by Below 20 years (26.2%). Respondents aged 31–40 years account for 16.7%, while above 50 years constitute 16.7%. The smallest share is from the 41–50 years age group (8.3%).



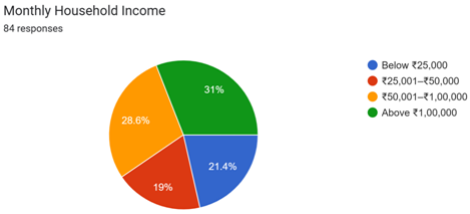
The gender distribution is perfectly balanced, with 50% male and 50% female respondents.



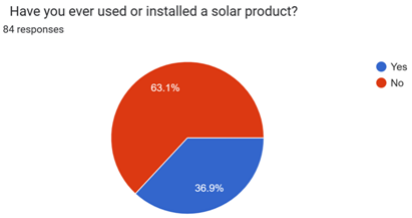
A majority of respondents are Postgraduates (45.2%), followed by Graduates (36.9%). Respondents with High School education constitute 10.7%, while a small percentage belongs to other categories such as Doctorate, Master's, Undergraduate, and Diploma holders.



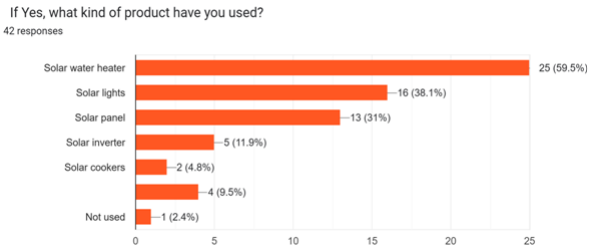
Most respondents are employed (66.7%), followed by Students (29.8%). A very small proportion consists of Business Owners and Retired individuals.



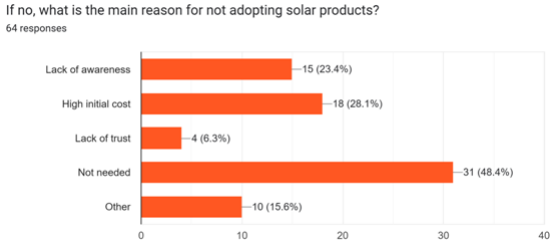
The income distribution reveals that 31% of respondents earn above ?1,00,000 per month, followed by ?50,001–?1,00,000 (28.6%). Respondents earning below ?25,000 constitute 21.4%, while ?25,001–?50,000 account for 19%.



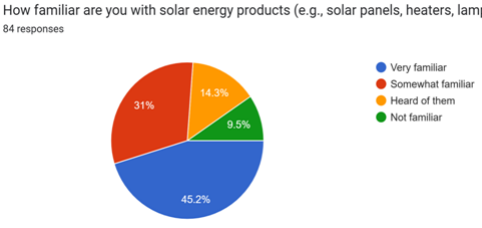
Only 36.9% of respondents have used or installed a solar product, while a majority, 63.1% have not adopted any solar product.



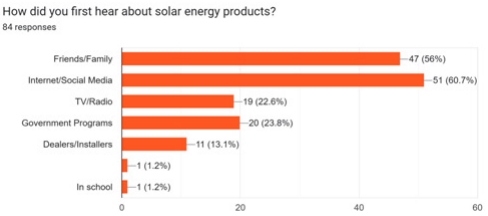
Among the 42 respondents who have used solar products, the most commonly used product is Solar Water Heater (59.5%), followed by Solar Lights (38.1%) and Solar Panels (31%). Usage of Solar Inverters (11.9%) and Solar Cookers (4.8%) is comparatively low.



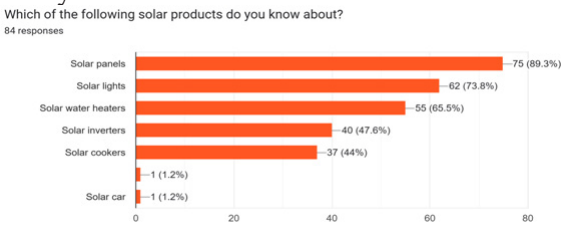
Among non-users, the major reasons cited are "Not needed" (48.4%), followed by High initial cost (28.1%) and Lack of awareness (23.4%). Lack of trust (6.3%) and Other reasons (15.6%) were reported by fewer respondents.



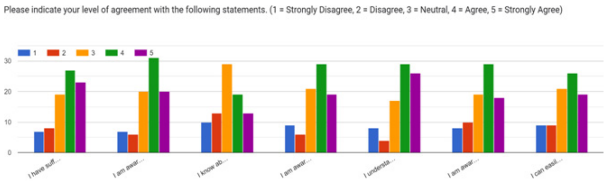
A majority of respondents report being somewhat familiar (31%) or very familiar, while 14.3% have only heard of solar products. A smaller proportion (9.5%) is not familiar at all.



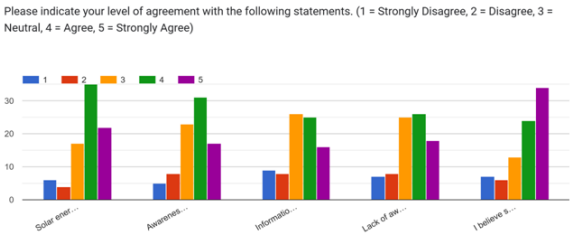
The major sources of information include Internet/ Social Media (60.7%), followed by Friends and Family (56%). Traditional media such as TV/Radio (22.6%) and Government Programs (23.8%) play a moderate role, while Dealers/Installers (13.1%) and Schools (1.2%) contribute minimally.



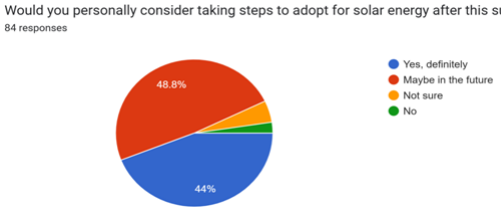
A large majority of respondents are aware of Solar Panels (89.3%), followed by Solar Lights (73.8%) and Solar Water Heaters (65.5%). Awareness of Solar Inverters (47.6%) and Solar Cookers (44%) is comparatively lower.



Most respondents selected "Agree (4)" and "Strongly Agree (5)", with fewer responses falling under disagreement categories. Neutral responses were present but did not dominate.



Responses indicate agreement with statements suggesting that lack of awareness and insufficient information remain significant challenges in adopting solar products. The clustering of responses around "Agree" and "Strongly Agree" supports this observation.



The pie chart indicates that 48.8% of respondents reported "Maybe in the future", while 44% stated "Yes,

definitely". A very small proportion expressed uncertainty or stated that they would not consider adopting solar energy.

1.8 Major Findings of the Study

1. According to the study, the majority of respondents are young and in their working years, which suggests that they have greater access to knowledge and are more receptive to renewable energy options like solar products.
2. The study's gender representation is evenly balanced, guaranteeing objective insights on customer awareness and adoption behavior.
3. The majority of respondents have graduate or postgraduate degrees, indicating that consumers with greater levels of education are more likely to be aware of solar products.
4. Since a sizable percentage of respondents are employed, they may have a say in whether or not solar items are adopted at the household level.
5. More than half of the respondents have never used or installed a solar product, despite their moderate to high understanding of solar energy and its advantages.
6. The most popular solar devices among consumers are solar lights and water heaters, whereas more sophisticated items like solar cookers and inverters are rarely use.
7. Economic and perceptual hurdles are highlighted by the main causes of non-adoption, which include perceived lack of necessity, high initial cost, and ignorance.
8. The main information sources are the Internet and social media, followed by friends and family; government initiatives and educational establishments have a little influence.
9. The majority of respondents concur that widespread adoption is still hampered by knowledge gaps and ignorance.
10. After completing the survey, a significant number of participants indicated that they would be inclined to use solar energy in the future. This is a favorable result of the study.

1.9 Conclusions of the Study

According to the study's findings, consumers are somewhat to highly aware of solar products, particularly those who are well-educated and engaged in the economy. However, because of things like high beginning costs, perceived irrelevance, and a lack of useful information, this knowledge has not entirely converted into acceptance. The disparity between awareness and utilization suggests the necessity for focused awareness campaigns, financial support systems, and trust-building projects, even though opinions regarding solar energy are usually favorable. The results demonstrate that raising awareness on its own is not enough to promote widespread adoption of solar technologies; cost, accessibility, and efficient communication are also necessary.

1.10 Recommendations

1. **Boost Awareness Initiatives :** The long-term economic and environmental advantages of solar products should be the subject of organized awareness efforts carried out by government organizations and solar firms.
2. **Promote Information and Subsidies Concerning Costs :** Concerns about high initial expenses should be addressed by providing clear information about government subsidies, tax advantages, and financing choices.
3. **Make Good Use of Digital Media :** Digital platforms should be deliberately leveraged to share success stories, demonstrations, and testimonials because social media and the internet are the main information sources.
4. **Promote Institutional Involvement :** To raise awareness early on, educational institutions should incorporate renewable energy awareness programs into their curricula, workshops, and outreach initiatives.
5. **Boost Transparency and Trust :** To increase consumer confidence in solar products, quality assurance procedures, consistent pricing, and certified installers should be encouraged.
6. **Product Exhibition and Practical Experience :** Customers can have a greater understanding of the usefulness of solar products through live demonstrations, pilot installations, and community-based initiatives.

1.11 Suggestions for Future Action and Research

1. Future studies may explore the relationship between income level and adoption behavior using inferential statistical tools.
2. Comparative studies can be conducted between urban and rural consumers to identify region-specific barriers and opportunities.
3. Research can be extended to analyze the role of government policies and incentives in influencing adoption decisions.
4. Further studies may focus on consumer satisfaction and post-adoption challenges related to solar products.

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Omnichannel Marketing and Emotional Intelligence : A Study of Customers Loyalty and Market Performance

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Abstract

Organizations are implementing omnichannel marketing strategies to provide seamless customer experiences across many touchpoints in an increasingly competitive and digitally connected economy. Concurrently, customer perceptions, satisfaction, and loyalty have been found to be significantly influenced by emotional intelligence. This study looks at how emotional intelligence and omnichannel marketing integration affect market performance and customer loyalty. The research suggests that emotional intelligence mediates the relationship between omnichannel experience and customer loyalty, which in turn has a favourable impact on market performance, using a conceptual framework backed by empirical data from earlier studies. By including emotional intelligence into omnichannel strategy study, the findings advance marketing theory and provide managers looking for long-term competitive advantage with useful information.

Key word : Omnichannel marketing, Emotional intelligence, Customer loyalty, Market performance, Customer experience, Innovative Marketing Strategies.

Introduction

In today's highly competitive and digitally driven marketplace, organizations are increasingly challenged to attract, engage, and retain customers who are empowered by access to abundant information, diverse choices, and multiple communication channels. The rapid advancement of digital technologies—such as artificial intelligence, big data analytics, mobile applications, and social media platforms—has fundamentally transformed consumer behaviour, compelling firms to move beyond traditional single-channel or even multichannel approaches toward a more integrated omnichannel marketing strategy.

Omnichannel marketing refers to the seamless integration and coordination of all customer touchpoints—both online and offline—to deliver a consistent, personalized, and unified customer experience. Unlike multichannel strategies, which often operate in silos, omnichannel approaches emphasize cross-channel synergy, ensuring that customers perceive a coherent brand narrative regardless of the platform or device they use. This holistic approach has become a critical determinant of customer satisfaction, loyalty, and overall market performance, as it not only enhances convenience but also fosters emotional connection and trust.

At the same time, emotional intelligence (EI)—the ability to perceive, understand, regulate, and manage emotions in oneself and others—has emerged as a vital competency for organizations seeking to strengthen customer relationships. Employees and managers with high emotional intelligence are better equipped to empathize with customers, respond to their needs, and create positive emotional experiences that drive long-term loyalty. Emotional intelligence also plays a crucial role in interpreting customer feedback, managing service recovery, and building authentic engagement across digital and physical channels.

Although omnichannel marketing and emotional intelligence have been studied independently, few studies have examined their combined effects on customer loyalty and market performance. This gap is significant because the integration of emotional intelligence into omnichannel strategies may amplify their effectiveness. For instance, emotionally intelligent communication can personalize digital interactions, reduce customer frustration in complex channel transitions, and enhance the perceived value of the brand.

To address this gap, the current study proposes a conceptual model that connects market performance, consumer loyalty, emotional intelligence, and omnichannel

integration. The model suggests that emotional intelligence acts as a moderating factor, strengthening the relationship between omnichannel marketing and customer loyalty. In turn, enhanced loyalty contributes to improved market performance, creating a virtuous cycle of customer-centric growth. By combining these constructs, the study aims to provide a deeper understanding of how organizations can leverage both technological integration and human emotional capabilities to achieve sustainable competitive advantage in the digital era.

Conceptual Background

- **Omnichannel marketing :** As the digital world changes and consumers engage with brands across many platforms and devices, omnichannel marketing has become a strategic response. Omnichannel methods prioritize integration and uniformity across touchpoints, including physical stores, websites, mobile apps, social media, and customer support channels, in contrast to multichannel approaches that frequently function in silos. Regardless of the medium, this flawless synchronization guarantees that consumers encounter a consistent brand message. According to research, omnichannel integration improves consumer pleasure, lowers friction in the purchasing process, and builds brand trust, all of which support sustained loyalty and better market performance.
- **Emotional intelligence :** The ability to recognize, comprehend, control, and manage one's own and other people's emotions is known as emotional intelligence. EI is becoming more widely acknowledged in organizational settings as a crucial skill for managers and staff that deal with clients. Service providers with high emotional intelligence are better equipped to understand the needs of their clients, handle complaints, and give emotionally satisfying experiences. EI improves client engagement, builds relationships, and enables tailored communication in marketing. As a result, emotional intelligence (EI) is both a psychological concept and a tactical tool that can increase the success of multichannel marketing campaigns.
- **Customer loyalty :** The dedication of consumers to stick with a brand or make more purchases, frequently despite competition pressures or other possibilities, is known as customer loyalty. Both practical (such product quality and convenience) and emotional (like trust, satisfaction, and relationships) aspects have an impact on loyalty. While emotional intelligence increases loyalty by promoting empathy and emotional connection, omnichannel marketing increases loyalty by providing convenience and consistency. When combined, these components have a synergistic effect that improves consumer advocacy and retention.
- **Market performance :** Market performance reflects the outcomes of organizational strategies in terms of sales growth, profitability, market share, and brand equity. Firms that successfully integrate omnichannel marketing with emotionally intelligent practices are better positioned to achieve superior performance. Omnichannel strategies drive efficiency and reach, while emotional intelligence ensures that customer interactions are meaningful and personalized. The combined effect leads to stronger loyalty, which in turn translates into sustainable competitive advantage and improved market outcomes.

Rational of the Study

The way businesses engage with customers across many platforms has changed because of the growing use of omnichannel marketing. However, improving market success and ensuring consumer loyalty requires more than just channel integration. To improve customer experiences during these interactions, emotional intelligence is essential for comprehending and reacting to customer emotions. The combined impact of emotional intelligence and omnichannel marketing on consumer loyalty and market performance has not received much attention, despite its significance. To close this gap, this study looks at the extent to which omnichannel strategies can improve market performance and increase consumer loyalty.

Literature Review

Khoa & Huynh (2023) This study's results revealed relationships between consumer psychology factors such as perceived mental benefits, hedonic value, and anxiety. Moreover, customer anxiety in omnichannel can be measured as a novel and exact concept in marketing science and have a moderating role in the effect of perceived mental benefits on electronic loyalty and perceived mental benefits on hedonic value in omnichannel systems. As a result, enterprises were also offered various managerial implications to develop their omnichannel system.

Awan., (2023) By delving into the intricate connection between EI and customer loyalty, an entrepreneur can uncover valuable insights that can inform effective strategies for building and maintaining strong customer relationships.

Kabir (2023) This study examines the role of omnichannel marketing in customer loyalty by incorporating all the touchpoints under one umbrella in the retail business. Bangladesh is an ideal choice for investigation due to the enormous digital transformation. Following ontology and epistemology, this study adopts subjectivism and interpretivism due to the nature of the knowledge.

FAILLI & REYES & RODRÍGUEZ (2023) With the rise of digital transformation retail companies have adopted an omnichannel strategy, to integrate online and offline channels and provide a seamless customer experience. The concept of omnichannel retail has gained popularity among researchers. However, limited research explores long term customer satisfaction and topics such as loyalty or advocacy.

Mateus (2021) Today, omnichannel assumes a top role in the field of communication strategies in companies. An integrated communication management strategy with the construction of a unique organizational message through several communication tools. In a strategic communication perspective, there is an urgent need for a balanced coordination of the binomial digital communication/personalized treatment.

Significance of the Research

The study will be examining how omnichannel marketing and emotional intelligence work together to shape customer loyalty and improve market performance, this study is highly valuable for scholars, practitioners, and policymakers. Businesses are increasingly interacting with customers through a variety of channels in today's fiercely competitive and technologically advanced marketplace, therefore it's critical to comprehend how emotional intelligence affects consumer attitudes and actions during these exchanges. From an academic standpoint, the study adds to the body of knowledge already available on marketing and consumer behaviour by connecting omnichannel marketing tactics with emotional intelligence—a topic that has not received enough attention. It expands theoretical frameworks related to relationship marketing and customer experience management by offering empirical insights into how emotionally intelligent involvement across channels impacts customer loyalty and organizational performance.

Objectives

This study's main goal is to investigate how emotional intelligence and omnichannel marketing affect customer retention and market performance. The goals are :

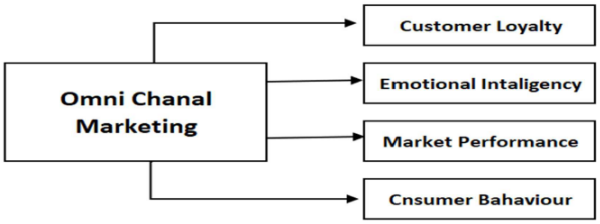
- To examine the idea and aspects of omnichannel advertising in relation to consumer interaction.
- To investigate how emotional intelligence functions in consumer interactions across various marketing channels.
- To evaluate the connection between customer loyalty and omnichannel marketing strategies. to assess how emotional intelligence affects client loyalty.
- To investigate how market performance is affected by both emotional intelligence and omnichannel marketing.

? To determine the essential elements of emotional intelligence that improve consumer experiences in an omnichannel setting.

- To strategically advise businesses on how to use emotionally intelligent omnichannel marketing to boost market performance and customer loyalty.

Hypothesis

- **H1 :** Omnichannel marketing integration has a positive effect on consumer loyalty.
- **H2 :** Consumer loyalty has a positive effect on market performance.
- **H3 :** Emotional intelligence has a positive effect on consumer loyalty.
- **H4 :** Emotional intelligence mediates the relationship between omnichannel marketing and consumer loyalty.



Methodology

The study adopts a quantitative and qualitative research design using a structured survey questionnaire, Personal interview. Data may be collected from consumers who regularly interact with brands across multiple channels and Google forms.

Data Collection

The association between omnichannel marketing, emotional intelligence, which is customer loyalty, and market performance was investigated in this study using a mixed research methodology. A systematic questionnaire, Personal interview that was created utilizing validated and established measurement scales from earlier research was used to gather primary data. And Secondary data collection is Magazines, Marketing report, old public opinion poll etc.

Company Segment	Omnichannel Integration (OMI)	Emotional Intelligence (EI)	Customer Loyalty (CL)	Market Performance (MP)
Retail Chain A	4.5	4.2	4.6	4.4
E-commerce B	4.8	3.9	4.5	4.7
Telecom C	3.9	4.6	4.3	4.1
Banking D	4.2	4.7	4.8	4.6
Hospitality E	3.7	4.4	4.2	4.0

- Firms with high OMI + high EI (e.g., Banking D) show the strongest loyalty and market performance.
- Companies with strong digital integration but weaker EI (e.g., E-commerce B) still perform well, but loyalty scores are slightly lower.
- Service industries (Telecom, Hospitality) rely more heavily on EI-driven interactions, showing that emotional intelligence can compensate for moderate omnichannel integration.

Data Analysis and Interpretation

To investigate the connections between marketing across all channels, psychological ability, customer loyalty, and market success, statistical software such as SPSS was used to analyse the gathered data. Multiple regression/ structural equation modelling (SEM), correlation analysis, reliability and validity testing, and descriptive statistics were all used in the analysis. These techniques were used to test the suggested hypotheses and guarantee the validity of the results.

In that, the data analysis shows that emotional intelligence and omnichannel marketing have a big impact on market success and client loyalty. The findings emphasise how crucial it is to combine human-cantered emotional talents with technological capabilities to gain a long-term competitive edge.

Discussion and Conclusion

This study emphasizes how important emotional intelligence is to optimize omnichannel marketing's advantages. Businesses can increase market performance and cultivate strong customer loyalty by creating emotionally compelling and flawlessly connected experiences. Longitudinal effects or industry-specific uses may be the subject of future studies. Expected findings suggest that omnichannel marketing significantly influences consumer loyalty, both directly and indirectly through emotional intelligence. Emotional intelligence enhances the emotional quality of omnichannel interactions, strengthening customer-brand relationships. Consumer loyalty, in turn, positively impacts market performance. These findings extend existing marketing literature by integrating emotional intelligence into omnichannel strategy research and emphasizing its mediating role.

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Beneficiary Perceptions And Socio-Economic Improvements Under Government Support Schemes In Gujarat : A Statistical Evaluation

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Abstract

Government welfare initiatives aim to enhance the socio-economic well-being of citizens, especially those belonging to disadvantaged communities. However, the true success of these schemes depends on their accessibility to beneficiaries and their ability to create tangible improvements in daily life. The present study investigates beneficiary satisfaction and analyzes the socio-economic outcomes of selected welfare schemes. Data were collected from 299 beneficiaries through a structured questionnaire. The validity of the tool was supported by a Cronbach's Alpha value of 0.813, while the adequacy of the sample was confirmed by a KMO value of 0.836. Chi-square tests were applied to identify significant relationships between beneficiary experiences and key dimensions such as service accessibility, transparency, financial upliftment, confidence enhancement, and employment generation. The results indicate that although a considerable segment of respondents report positive changes in income levels and personal confidence, persistent issues remain, particularly regarding documentation requirements, procedural delays, and lack of clarity in information sharing. The study emphasizes the need for stronger implementation frameworks, increased awareness campaigns, and better support services to ensure that welfare benefits reach the intended population effectively. These insights may assist policymakers in refining welfare delivery mechanisms and promoting inclusive and

Key Words : Government Welfare Schemes, Beneficiary Experience, Socio-Economic Development, Inferential Analysis

1. Introduction

Government support schemes serve as an essential mechanism for reducing socio-economic disparities and ensuring that development reaches every individual, especially those belonging to disadvantaged groups. In the context of Gujarat, a state known for its rapid economic growth and industrial progress, several welfare initiatives have been launched to uplift marginalized communities by improving their access to education, healthcare, employment opportunities, financial assistance, and social protection. These schemes are not only aimed at providing monetary relief but also at empowering citizens to lead dignified and self-reliant lives.

Despite significant government efforts, the success of welfare programs depends largely on how effectively beneficiaries can access and utilize the available services. Many individuals continue to face barriers such as insufficient awareness, complicated application procedures, delays in approvals, and inadequate guidance from implementing authorities. Such challenges limit the full realization of the socio-economic outcomes that these schemes intend to achieve and restrict their transformative potential.

Understanding the impact of welfare schemes from the viewpoint of beneficiaries is therefore crucial. Perceptions related to improvements in income levels, living standards, employability, self-confidence, procedural transparency, and ease of receiving benefits provide valuable insights into the true effectiveness of these initiatives. Beneficiary feedback plays an important role in helping policymakers identify implementation weaknesses and improve delivery systems for better outreach and efficiency.

To ensure accuracy and credibility in this evaluation, statistical tools have been employed. Cronbach's Alpha has been used to test the reliability of the research instrument, while inferential analyses such as chi-square tests help determine whether differences in beneficiary responses across various dimensions are statistically significant.

This study, titled "Beneficiary Perceptions and Socio-Economic Improvements under Government

Support Schemes in Gujarat: A Statistical Evaluation," is based on a survey of 299 respondents from Kadi Tehsil, Gujarat. By examining their experiences, the study aims to highlight existing gaps between policy formulation and implementation and contribute insights toward more citizen-friendly and outcome-driven welfare systems.

1. Reliability Test

Table 1 Reliability Statistics

Cronbach's Alpha	N of Items
0.813	299

Table 2 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.836
Bartlett's Test of Sphericity	Approx. Chi-Square	8582.326
	df	8385
	Sig.	0.065

To ensure the reliability and consistency of the responses obtained from beneficiaries, a reliability assessment was conducted using Cronbach's Alpha. As presented in Table 1, the Cronbach's Alpha value stands at 0.813 for the 299-item dataset, indicating a strong level of internal consistency among survey responses. In social science research, a reliability coefficient exceeding 0.70 is generally considered satisfactory, suggesting that the questionnaire statements are coherent, relevant, and effectively measure the intended constructs. Thus, the dataset used for subsequent statistical procedures can be regarded as credible and dependable.

Furthermore, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity were performed to evaluate the dataset's suitability for factor-based and inferential analyses. The KMO value of 0.836 signifies high sampling adequacy, confirming that the dataset is appropriate for identifying underlying relationships among variables. Additionally, Bartlett's Test of Sphericity yielded a chi-square value of 8582.326 with a significance level of 0.065, indicating that correlations among variables are sufficiently strong for further examination using advanced statistical tools.

Collectively, these statistical diagnostics confirm the robustness of the data collection instrument and validate the quality of responses obtained, thereby assuring that the findings derived from the study are reliable and well-supported.

3. Inferential Analysis

Inferential analysis plays a critical role in research as it enables the generalization of findings from a sample to the broader population. Unlike descriptive statistics, which only present a summary of observed responses, inferential analysis examines hypotheses, explores variable relationships, and determines whether observed differences are statistically meaningful rather than due to mere chance. This approach ensures that the conclusions drawn from the study carry strong empirical support.

In this study, inferential analysis is applied to evaluate the beneficiaries' perceptions of government welfare schemes and to assess the effectiveness of these initiatives in enhancing socio-economic well-being. Since the collected data primarily consists of categorical responses—such as satisfaction levels, accessibility experiences, financial improvement, and perceptions of transparency—non-parametric statistical techniques are most appropriate.

Accordingly, the chi-square test of independence is utilized to determine whether significant differences exist between expected and observed frequencies across different opinion categories. A lower chi-square value implies that the respondents' views are in line with expected patterns, whereas a higher chi-square value indicates statistically significant variation, suggesting areas that may require policy attention or operational improvement.

Table 3Improvement in employability or entrepreneurship through training/skills provided

	O	E	(O-E	$(O-E^2/E$
Strongly Agree	83	74.8	8.3	0.911
Agree	62	74.8	-12.8	2.175
Neutral	85	74.8	10.3	1.406
Disagree	69	74.8	-5.8	0.442
Total	299			**4.933**

This table presents the beneficiaries' opinions on whether the training and skills provided under the scheme have improved their employability or entrepreneurship. The null hypothesis assumes that there is no significant difference between the observed and expected responses, meaning that beneficiaries' views are evenly distributed across all categories. The alternative hypothesis assumes that the distribution of responses differs significantly. With four response options, the degree of freedom is three, and the critical chi-square value at the 5% significance level is 7.815. The calculated chi-square value is 4.933, which is lower than the critical value, so the null hypothesis cannot be rejected. Therefore, there is no statistically significant difference between the observed and expected responses at the 5% level.

Although the statistical test indicates no significant variation, the descriptive results provide useful insights. A total of 145 respondents (27.8% strongly agree and 20.7% agree) believe that the training they received has improved their employability or entrepreneurial abilities. This shows that nearly half of the beneficiaries feel that the scheme's training component has had a positive impact. Another 85 respondents (28.4%) reported a neutral view, which may reflect uncertainty or mixed experiences. Meanwhile, 69 respondents (23.1%) disagreed that the training helped improve their prospects, indicating that a substantial portion did not find the skills component useful.

Overall, while many beneficiaries view the training element positively, not everyone has benefited equally. The findings suggest that the training programme still requires improvement in terms of relevance and delivery

so that more participants can experience clear gains in employment or entrepreneurship.

Table 4 Opportunities created by government schemes to enhance confidence and independence

	O	E	(O-E	$(O-E^2/E$
Strongly Agree	67	74.8	-7.8	0.804
Agree	67	74.8	-7.8	0.804
Neutral	80	74.8	5.3	0.369
Disagree	85	74.8	10.3	1.406
Total	299			**3.381**

Table 4 reflects the beneficiaries' opinions on whether government schemes have helped them become more confident and independent. The null hypothesis states that there is no significant difference between the observed and expected responses, meaning that all four categories are equally represented. The alternative hypothesis assumes that there is a significant difference between them. With four response categories, the degrees of freedom are three, and the critical chi-square value at the 5% significance level is 7.815. The calculated chi-square value of 3.381 is lower than the critical value, so the null hypothesis cannot be rejected. This means there is no statistically significant difference in the distribution of responses.

However, even though the statistical result shows no significant variation, the descriptive pattern offers valuable insights. A total of 134 respondents (22.4% strongly agree and 22.4% agree) feel that government schemes have boosted their confidence and independence. This suggests that roughly two out of every five beneficiaries see a positive empowerment effect. Another 80 respondents (26.8%) selected neutral, indicating mixed experiences or uncertainty regarding the schemes' impact on their confidence. Meanwhile, 85 respondents (28.4%) disagreed, showing that a considerable number of participants do not feel that the schemes have improved their self-confidence or independence.

Overall, while the chi-square test indicates that responses do not differ significantly across categories, the descriptive findings show a clear divide. Many beneficiaries have experienced increased confidence and independence, but an almost equal number have not seen similar benefits. This highlights the need to further strengthen the empowerment-related components of the schemes so that more participants can experience meaningful personal growth and self-reliance.

Table 5Change in overall household income after availing the schemes

	O	E	(O-E)	$(O-E)^2/E$
Significantly Increased	71	74.8	-3.8	0.188
Slightly Increased	63	74.8	-11.8	1.847
No Change	82	74.8	7.3	0.703
Declined	83	74.8	8.3	0.911
Total	299			**3.649**

Table 5 shows the responses of beneficiaries regarding changes in their household income after availing the scheme(s). The null hypothesis assumes there is no significant difference between the observed and expected responses, meaning opinions are evenly distributed across the four categories. The alternative hypothesis assumes a significant difference. With four categories, the degrees of freedom are three, and the critical chi-square value at the 5% level is 7.815. The calculated chi-square value is 3.649, which is below the critical value. Therefore, the null hypothesis cannot be rejected, indicating no statistically significant difference in the distribution of responses.

Although the statistical test shows no significant variation, the descriptive results provide meaningful insights. A total of 134 respondents (23.7% reporting a significant increase and 21.1% reporting a slight increase) believe their household income has improved since benefitting from the scheme. This indicates that nearly half of the beneficiaries have experienced some financial growth. At the same time, 82 respondents (27.4%) report no change, and 83 respondents (27.8%) state that their income has declined.

Overall, the descriptive findings present a mixed scenario. While many beneficiaries have experienced income growth, a similarly large share report no change or even a decrease. This highlights the importance of strengthening the income-enhancement aspects of the schemes so that more beneficiaries can experience consistent and positive financial outcomes.

Table 6Improvement in family's access to education (self or children) through the schemes

	O	E	(O-E)	$(O-E^2/E$
Greatly Improved	86	74.8	11.3	1.693
Somewhat Improved	69	74.8	-5.8	0.442
No Change	72	74.8	-2.8	0.101
Declined	72	74.8	-2.8	0.101
Total	299			2.338

Table 6 shows beneficiaries' opinions on whether their family's access to education for themselves or their children has improved after availing the scheme(s). The null hypothesis states that there is no significant difference between the observed and expected responses, meaning that opinions are evenly distributed across all four categories. The alternative hypothesis assumes a significant difference. With four categories, the degrees of freedom are three, and the critical chi-square value at the 5% level is 7.815. The calculated chi-square value is approximately 2.33, which is much lower than the critical value. Therefore, the null hypothesis cannot be rejected, indicating that the distribution of responses is not statistically significant.

Although the statistical result shows no significant variation, the descriptive findings are meaningful. The largest proportion of respondents 86 people (28.8%) reported that their family's access to education has greatly improved after benefitting from the scheme. Another 69 respondents (23.1%) said it has somewhat improved. Together, these groups make up more than half of the sample, showing that many beneficiaries experienced a

positive educational impact. However, 72 respondents each (24.1%) reported no change or even a decline, which indicates that for a sizeable share of participants, access to education has not improved.

Overall, while the chi-square test shows no significant statistical difference, the descriptive data highlight a mixed outcome. Many families have benefitted through improved access to education, but a considerable number have not seen similar progress. This suggests a need to strengthen the educational components of the schemes so that more beneficiaries experience clear and consistent improvements.

Table 7Change in role in household decision-making due to the schemes

	O	E	(O-E)	$(O-E)^2/E$
Yes, Now I take Independent Decisions	80	74.8	5.3	0.369
Yes, I Participate jointly with Family Members	77	74.8	2.3	0.068
No change, Still Dependent on Others	79	74.8	4.3	0.242
My role has decreased	63	74.8	-11.8	1.847
Total	299			**2.525**

Table 7 shows the views of beneficiaries on whether their role in household decision-making has changed after availing the scheme(s). The null hypothesis assumes that there is no significant difference between the observed and expected responses, meaning opinions are evenly distributed across the four categories. The alternative hypothesis assumes a significant difference. With four categories, the degrees of freedom are three, and the critical chi-square value at the 5% significance level is 7.815. The calculated chi-square value is 2.526, which is lower than the critical value. Therefore, the null hypothesis cannot be rejected, indicating no statistically significant difference in the distribution of responses.

Even though the statistical test shows no significant variation, the descriptive findings give a clearer picture of beneficiary experiences. A total of 157 respondents (26.8% taking decisions independently and 25.8% taking decisions jointly with family members) reported that their role in household decision-making has improved. This means that more than half of the beneficiaries feel empowered in their household roles. On the other hand, 79 respondents (26.4%) reported no change and remain dependent on others, while 63 respondents (21.1%) stated that their role in decision-making has decreased.

In summary, the chi-square test indicates no significant difference across categories, but the descriptive data highlight both progress and gaps. Although many beneficiaries feel more involved and independent in making household decisions, a considerable share still experiences no improvement or a decline. This suggests that empowerment-related components of the schemes should be strengthened so that benefits reach all participants equally.

Table 8Improvement in confidence and self-reliance through the schemes

	O	E	(O-E)	$(O-E)^2/E$
Strongly Improved	76	74.8	1.3	0.021
Somewhat Improved	75	74.8	0.3	0.001
No change	70	74.8	-4.8	0.302
Declined	78	74.8	3.3	0.141
Total	299			**0.465**

Table 8 assesses whether beneficiaries experienced an increase in their confidence and self-reliance after availing the schemes. The null hypothesis (H0) states that there is no significant difference between the observed and expected frequencies, meaning respondents are evenly distributed across categories. The alternative hypothesis (H1) states that there is a significant difference in responses.

With four response categories, the degrees of freedom are 3. At the 5% level of significance, the critical chi-square value is 7.815. The calculated chi-square statistic from the data is 0.465 (0.021 + 0.001 + 0.302 + 0.141), which is far below the critical value. Therefore, the null hypothesis cannot be rejected, indicating no statistically significant difference between observed and expected responses at the 5% level.

Even though the statistical test does not show a significant difference, the descriptive data provide useful insight. A combined total of 151 respondents (25.4% strongly improved and 25.1% somewhat improved) feel that their confidence and self-reliance have grown as a result of the schemes. This shows that nearly half of the beneficiaries are experiencing positive changes. About 70 respondents (23.4%) report no change, and 78 respondents (26.1%) even perceive a decline in their confidence and self-reliance.

These findings suggest that while government schemes have been effective in enhancing self-confidence and self-reliance for a considerable share of beneficiaries, there is still a significant proportion who have not experienced the same impact. These points to the need for more targeted interventions, support structures, and follow-up mechanisms to ensure that all beneficiaries can experience improvements in their confidence and independence.

Conclusion

The analysis aimed to determine whether government welfare schemes have brought about a significant change in beneficiaries' involvement in household decision-making. The chi-square test results revealed no statistically significant difference between the observed and expected response patterns at the five per cent significance level. This means the distribution of responses regarding increased independence, joint participation, no change, or decreased decision-making roles does not significantly deviate from what might occur by chance, and thus, the null hypothesis is accepted.

Although the statistical test does not confirm a

significant shift, the descriptive responses provide valuable insight into the real-world effects of welfare interventions. A considerable portion of beneficiaries reported enhanced empowerment—either by gaining independent authority or participating alongside other family members in key decisions. This suggests positive progress toward strengthening beneficiaries' social and economic influence within the household. Nevertheless, a notable segment expressed that their role remains unchanged or has even diminished; indicating that the benefits and awareness related to the schemes might not be uniformly distributed or fully realized.

In conclusion, while welfare schemes show potential in improving beneficiaries' decision-making power, the impact is not yet widespread or statistically strong enough to demonstrate a decisive transformation across the community. Enhanced program outreach, continuous monitoring, supportive awareness initiatives and targeted empowerment efforts are recommended to ensure that beneficiaries truly experience meaningful and sustainable shifts in household decision-making power.

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The Psychology of Instant Gratification in Q-Commerce & Consumer Delight in Ultra-Fast Delivery Platforms

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Abstract

The rapid rise of Quick Commerce (Q-Commerce) has transformed consumer expectations, shifting the focus from standard e-commerce delivery times to ultra-fast gratification. This study investigates the psychological underpinnings of this shift, specifically examining how the desire for instant gratification and specific psychological drivers, such as a sense of control and emotional satisfaction, influence overall consumer delight. By understanding these factors, platforms can better tailor their services to meet the evolving needs of the modern consumer. For this study, empirical data were collected from 120 respondents using Q-commerce, often via a structured questionnaire on a 5-point agreement scale. Purposive and convenience sampling methods are used for this study. The statistical results showed that almost all users appreciate these fast-delivery platforms, and some feel a sense of control and satisfaction. Youth are more prone to such platforms, and they feel delighted by the quick deliveries of their essential products.

Keywords : Q-commerce, Ultra-fast delivery platforms, consumer delight, gratification

Introduction

- **Q-Commerce**

Q-commerce helps in delivering everyday essentials in a few minutes through a technology-driven network. It makes shopping very instant. It redefines how people access everyday essentials by delivering speed, convenience, and high reliability. It is a modern commerce model where consumers connect with local inventory through a seamless digital experience that delivers products in a few minutes. This platform integrates logistics, technology, and data intelligence to enable ultra-fast fulfilment for groceries and other essential goods, as well as curated lifestyle products. It is reducing friction at the last mile and setting new benchmarks for instant delivery by leveraging in-store locations, smart routing, and real-time inventory management. The ultimate aim is to make consumers delighted with instant gratification. They focus on precision, transparency, and trust, ensuring every order is fast and accurate. Indirectly, it also helps brands and suppliers to grow. Also provides gig employment to the service providers. The main features of Q-commerce are its technology- and innovation-driven nature and operational excellence. It is not just about faster delivery; it also reshapes consumer expectations and delivers greater delight.

- **Consumer Delight**

Consumer delight is a concept in marketing and consumer behaviour that refers to a positive emotional response that occurs when a product, service, or experience significantly exceeds a consumer's expectations, giving them greater joy, happiness, surprise, and pleasure. From a theoretical perspective, consumer delight goes beyond customer satisfaction and meets all his expectations, and even exceeds them. It creates a positive vibe among customers and helps generate strong emotional reactions. Featured by a high level of excitement combined with a positive effect of happiness or pleasure. Although these emotions are not evaluated or measured, customers' reactions reveal them. Now, consumer delight involves the element of surprise, leading to high satisfaction, intense emotions such as amazement and joy, short-term happiness, and stronger influences on long-term outcomes, such as brand loyalty, word of mouth, and advocacy. The result of consumer delight is higher repurchase intentions, stronger emotional attachment to the brand, and positive word of mouth and brand advocacy from customers. It is advantageous for companies to grow their businesses and even diversify.

Today, in the contemporary era, Q-Commerce has

really been delighting customers, as they can order items without leaving their homes and get them delivered to their places instantly. Essential customer needs are made available in a few minutes, which is why delivery platforms are becoming increasingly popular and widely accepted by customers.

Reviews of Literature

- **Batl et al. (2013)** studied the context of online shopping services to identify examples and effects of delight online using an empirical quantitative design. They found that delight has meaning, downstream effects on behavioural consequences.
- **Chavadi et al. (2024)** examined the role of instant gratification in Q-commerce among urban Indian consumers, aiming to understand how ultra-fast delivery influences customer satisfaction. The study, conducted with 428 respondents, found that instant gratification affects customer satisfaction and engagement.
- **Finn (2005)** studied the digital customer experience to determine what produces customer delight in online settings through quantitative empirical studies. They found that online delight is linked to emotional mechanisms like surprise.
- **Goswami (2024)** analysed the impact of quick commerce on consumer decision-making and impulse buying behaviour in India using a descriptive research design. The study also noted that excessive reliance on speed without maintaining service quality could limit long-term consumer delight.
- **Harter (2025)** examined the delivery performance context to test how delivery time performance affects repurchase behaviour, using empirical studies. They concluded that early deliveries tend to improve repurchase rates, while late deliveries tend to reduce them.
- **Jose (2025)** investigated the influence of quick commerce on impulse buying behaviour in the Indian FMCG sector by using a quantitative survey-based approach. The study found that instant gratification, ease of access, and rapid fulfilment significantly encourage impulse purchases.
- **Magnini Crotts & Zehrer (2011)** studied tourism and hospitality travel blogs to identify what triggers customer delight in tourism, using real customer narratives and qualitative analysis of travel blogs. They found that determinants of delight can be mined from blogs.
- **Oliver (1997)** conducted a study on service settings to establish a behavioural basis for customer delight and to test its consequences, using an empirical model and structural modelling. They found that delight follows surprise, has a positive effect, and is distinct from satisfaction.
- **Patel (2024)** conducted an empirical study in Navi Mumbai to assess the impact of fast-delivery services on customer satisfaction on e-commerce and quick-commerce platforms. Findings showed that faster delivery improves customer satisfaction and repeat purchase intention.
- **Rajnekar and Roy (2023)** conducted a conceptual and analytical study on the rise of quick commerce in India and its impact on consumer behaviour. Focusing on how convenience, time scarcity, and lifestyle changes drive the adoption of Q-commerce platforms. The findings revealed that while speed and convenience are major adoption drivers,
- **Rust & Oliver (2000)** developed a marketing-based conceptual model to examine whether the firm should pursue delight and its effects, using a mathematical model. They found that delighting can raise expectations and is valuable.
- **Sivakami R. (2025)** explored differences in consumer behaviour toward Q-commerce platforms between metro cities and Tier-2 cities in India by using a cross-sectional survey. The findings indicated that metro consumers prioritise speed and convenience, while consumers in Tier-2 cities are more price-sensitive.
- **Wang (2011)** studied restaurant services to test how unrelated supporting services influence delight by a multi-study empirical design. They found that supporting services can boost delight.

Objectives of The Study

1. To examine how instant gratification factors influence consumer delight in ultra-fast delivery platforms.
2. To identify psychological drivers that contribute to consumer delight in the context of ultra-fast delivery services

Hypothesis of The Study

1. Instant gratification factors do not have a significant positive effect on consumer delight in ultra-fast delivery platforms.
2. Psychological drivers do not have a significant

positive effect on consumer delight in ultra-fast delivery services.

Significance of The Study

The study is significant as it examines how instant gratification shapes consumer delight in cube commerce. This has broader implications for consumer behaviour research. Marketers can leverage instant gratification as a strategic driver of consumer delight. The study also enables researchers to contribute empirical insights into ultra-fast delivery behaviour. Ultimately, it helps businesspeople and policymakers develop long-term loyalty policies grounded in consumer delight.

Methodology of The Study

- **Research Design**

The study employs a descriptive-analytical research design to examine the relationship between instant gratification and consumer delight on Q-commerce platforms. The study is cross-sectional, as the data are collected at a single point in time.

- Sample Size and Sampling Method
- **Sample size :** 120 respondents
- **Sampling technique :** Purposive and Convenience sampling
- **Target respondents :** Active users of Q-commerce or ultra-fast delivery platforms.
- **Data Collection Method**

Primary data were collected using a structured questionnaire designed to capture data from 120 respondents on the criteria for their regular use of Q-commerce, consisting of questions on perception and instant gratification, measured on a 5-point Likert scale, with agreement. Secondary data is sourced from published papers, theses, and articles.

- **Tools for Data Analysis**

Data was analysed using descriptive analysis and the One-Sample Wilcoxon Signed-Rank Test.

Data Analysis And Results

- **Demographic Profile of Respondents**

Category	Group	Frequency (N)	Percentage (%)
Gender	Male	68	63.55%
	Female	39	36.45%
Age Group	18 – 24	68	63.55%
	25 – 34	23	21.50%
	35 – 44	16	14.95%
Academic Level	Undergraduate (UG)	76	71.03%
	Postgraduate (PG)	31	28.97%

The table provides a comprehensive overview of the demographic characteristics of the 107 respondents who participated in this study. The gender distribution shows a majority of Male (63.55%) participants compared to Female (36.45%) participants, reflecting a diverse yet male-leaning user base in the surveyed area. In terms of age, the sample is predominantly young adults, with 63.55% of respondents in the 18–24 age bracket, followed by 25–34 (21.50%) and 35–44 (14.95%). This suggests that the insights gathered primarily reflect the perspectives of Gen Z and younger Millennials, who are the most frequent adopters of ultra-fast delivery technology. Furthermore, the academic profile reveals that 71.03% of the participants are Undergraduates (UG), while 28.97% are Postgraduates (PG). Overall, the demographic data indicates a young, educated respondent profile, which is highly relevant to a study centred on the digital-first, fast-paced nature of the Q-commerce industry.

- **Item-wise Descriptive Statistics**

This section presents the mean scores for the study's core items.

Construct / Item	Mean Score	Std. Deviation
Speed of delivery plays a major role in satisfaction.	3.64	1.15
Receiving orders quickly makes me feel excited/pleased.	3.49	1.12
The convenience of ultra-fast delivery increases delight.	3.28	1.18
Sense of control over time using these apps.	3.33	1.11
Emotionally satisfied when the order arrives faster than expected.	3.32	1.10
Joy experiences motivate reordering.	3.21	1.05

The results indicate that delivery speed is a key driver of consumer satisfaction, with the highest mean score (3.64), underscoring its central role in Q-commerce experiences. Respondents also reported positive emotional reactions, such as excitement and pleasure (Mean = 3.49), reinforcing the link between ultra-fast delivery and instant gratification. Moderate mean scores for convenience (3.28), sense of time control (3.33), and emotional satisfaction from faster-than-expected delivery (3.32) suggest that ultra-fast delivery contributes to consumer delight, though the intensity varies among users. The relatively lower mean for joy-driven reordering (3.21) indicates that while delight influences repeat behaviour, functional benefits like speed remain more influential than emotional factors alone. Overall, the findings suggest that instant gratification through speed enhances satisfaction and emotional delight, but sustained loyalty may require additional value beyond delivery speed.

- **Hypothesis 1 :** Instant gratification factors do not have a significant positive effect on consumer delight in ultra-fast delivery platforms.

The first hypothesis (H01) investigates the relationship between instant gratification factors such as delivery speed, convenience, and the excitement of rapid fulfilment and overall consumer delight in ultra-fast delivery platforms. This hypothesis tests whether these operational efficiencies translate into a statistically significant positive effect on user satisfaction.

Table

Hypothesis	Test Applied	Median Score	Test Stat (W)	p-value	Decision
h01	One-Sample Wilcoxon	3.50	2125.0	0.0677	Accept Null
Level of significance: 0.05.					

Note : The test compares the observed median against a neutral value of 3.00. Level of significance: 0.05.

The One-Sample Wilcoxon Signed-Rank Test results indicate that although consumers generally value instant gratification in Q-commerce (median = 3.50), the effect of instant gratification factors on consumer delight is not statistically significant at the 95% confidence level ($p = 0.0677 > 0.05$). Hence, the null hypothesis (H01) is accepted. This suggests that while speed and convenience are positively perceived, they do not uniformly translate into measurable consumer delight across all respondents.

Inferences

- Instant gratification is an important but not sufficient determinant of consumer delight in Q-commerce.
- Ultra-fast delivery appears to be a basic expectation or hygiene factor rather than a strong differentiator.
- Consumer delight likely depends on a combination of factors, including product quality, pricing, reliability, service accuracy, and speed.
- Q-commerce platforms should adopt a holistic experience strategy, as relying solely on faster delivery may not consistently generate delight or long-term loyalty across diverse consumer segments.

Hypothesis 2 : Psychological drivers do not have a significant positive effect on consumer delight in ultra-fast delivery services.

Hypothesis 2 tests whether these internal emotional and cognitive drivers have a significant positive effect on the user's overall delight. By evaluating this hypothesis, the study aims to move beyond surface-level logistics to understand the deeper mental motivations that encourage repeat usage and brand affinity in the Q-commerce ecosystem.

Hypothesis	Test Applied	Median Score	Test Stat (W)	p-value	Decision
H02	One-Sample Wilcoxon	3.33	1968.5	0.0544	Accept Null
Level of significance: 0.05.					

Interpretation

The statistical analysis shows that psychological drivers such as a sense of control over time and emotional satisfaction do not have a statistically significant positive effect on consumer delight at the 95% confidence level ($p = 0.0544 > 0.05$). Although respondents generally leaned toward agreement (median = 3.33), the null hypothesis (H02) is accepted, indicating insufficient evidence to confirm a universal impact of these psychological factors on consumer delight.

Inferences

- Psychological drivers contribute positively but weakly to consumer delight in ultra-fast delivery platforms.
- These factors appear to be secondary influences, overshadowed by functional factors such as delivery speed, reliability, price, and product variety.
- The near-significant p-value suggests that psychological factors may strongly influence specific user segments (e.g., frequent or power users), though not the broader consumer base.
- For Q-commerce platforms, emotional engagement and psychological appeal should be treated as supporting strategies, while core operational excellence remains the primary driver of consumer delight and sustained usage.

- **Summary of Hypotheses Testing**

Hypothesis	Focus Area	Median Score	p-value	Decision	Key Summary
H01	Instant gratification factors (speed, convenience, rapid fulfilment)	3.50	0.0677	Accept Null	Instant gratification is valued, and speed acts as a hygiene factor rather than a delighter.
H02	Psychological drivers (sense of control, emotional satisfaction)	3.33	0.0544	Accept Null	Psychological factors contribute positively, but other factors also impact.

- **Conclusion**

This study shows that while Quick Commerce platforms are very good at delivering orders quickly, speed alone does not automatically create consumer delight. The statistical results for both instant gratification and psychological factors were not strong enough to demonstrate a significant positive impact on delight across all consumers. Although most users do appreciate fast delivery and feel some sense of control and satisfaction, these factors have now become basic expectations rather than something that truly excites or delights them. In other words, ultra-fast delivery works more like a minimum requirement. It helps avoid dissatisfaction but does not, on its own, guarantee loyalty or happiness.

To truly delight consumers, Q-commerce platforms need to go beyond speed. They should focus on a well-rounded experience that combines reliable delivery, high-quality products, fair pricing, accurate orders, and engaging customer service. Only by balancing speed with overall value and trust can platforms create lasting consumer delight.

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A Study of Role of Digital Marketing And Social Media In Expanding Local Business Internationally

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Abstract

The present study examines the role of digital marketing and social media in enabling local businesses to expand at the international level. In the contemporary digital era, the reach and influence of social media platforms are increasing rapidly. Platforms such as Facebook, Instagram, Twitter/X, YouTube, LinkedIn, and Whats App are no longer limited to personal communication; they have emerged as powerful tools for business promotion and marketing. Within the domain of digital marketing, social media marketing has brought about a transformative shift by allowing businesses to connect with global consumers, build brand identity, and enhance sales performance. In this context, the study focuses on identifying and analyzing the specific role played by digital marketing and social media in facilitating the international expansion of local businesses. The research highlights how strategic use of digital tools helps local enterprises overcome geographical limitations, access global markets, and achieve sustainable growth in an increasingly competitive global economy.

Keywords : Digital Marketing, Local Businesses and International Market Expansion, Brand Awareness & Global Reach, E-commerce & Digital Platforms.

Introduction

Cause of Globalization, the rapid expansion of the internet, and continuous advancements in digital technology have made international markets far more accessible to local businesses than ever before. Compared to traditional advertising methods, digital marketing and social media have emerged as cost-effective, efficient, and globally scalable tools. As a result, micro, small and medium enterprises (MSMEs), startups, and local entrepreneurs are now able to establish their presence beyond national boundaries and compete in international markets.

In the contemporary digital era, the growth of social media platforms is accelerating on a daily basis. Platforms such as Facebook, Instagram, Twitter/X, YouTube, LinkedIn, and WhatsApp are no longer used solely for personal communication; they have evolved into powerful channels for business promotion and customer engagement. Within the field of digital marketing, social media marketing has brought about a transformative change by enabling businesses to interact with global audiences, strengthen brand identity, and increase sales.

When compared to traditional marketing approaches, digital promotion delivers faster, more measurable, and more impactful outcomes. Empirical observations suggest that organizations actively utilizing social media experience notable improvements in sales performance, customer loyalty, and brand visibility. Furthermore, the widespread adoption of the internet and mobile technologies has fundamentally altered the nature of communication and commerce. Businesses are now able to communicate directly with customers, eliminating geographical barriers. In this context, the present study seeks to examine the specific role played by digital marketing and social media in facilitating the international expansion of local businesses. The study aims to analyze how digital tools contribute to global outreach, market penetration, and sustainable growth, thereby supporting the transition of businesses from a local to a global scale.

Objectives of the Study

1. To examine the role of digital marketing in the international expansion of local businesses.
2. To analyze the opportunities and challenges faced by local businesses in the adoption of digital marketing strategies.
3. To evaluate the effectiveness of digital platforms used to reach international customers.
4. To highlight the contribution of digital media

to the success of the "Local to Global" business transformation.

Research Hypotheses

1. Active presence on social media increases international customer trust and engagement.
2. Digital marketing and social media contribute to the growth of global demand for local products.
3. There is a positive relationship between the use of digital marketing and the international expansion of local businesses.

Research Methodology

In social research, one of the most critical tasks is the systematic collection of facts. The present study focuses on examining the role of digital marketing and social media in facilitating the international expansion of local businesses. Both secondary and primary data sources were utilized to achieve the objectives of the research.

While secondary data collection formed the foundational basis, greater emphasis was placed on primary data collection and observational methods. For this purpose, interviews were conducted with 50 local entrepreneurs and digital marketing experts in Nashik district. The participants were selected using a purposive sampling technique, targeting local businesses engaged in international sales or actively using digital marketing strategies.

The study analyzes percentages, tables, graphs, and charts to present insights into the usage, impact, and effectiveness of digital marketing among local businesses in Nashik district.

Concept of Digital Marketing

Digital marketing is a modern marketing process that promotes products and services effectively through the internet and various digital platforms. Compared to traditional advertising methods, digital marketing is more dynamic, cost-efficient, and results-oriented.

Key components of digital marketing include

- **Search Engine Optimization (SEO) :** Enhances website visibility by achieving higher rankings in search engine results.
- **Search Engine Marketing (SEM) :** Increases immediate visibility through paid advertisements.
- **Content Marketing :** Builds trust with customers by creating useful, informative, and engaging content.
- **Email Marketing :** Communicates directly with potential and existing customers to share product information, offers, and services.
- **Influencer Marketing :** Uses influential individuals on social media to enhance brand credibility and reach.
- **Mobile Marketing :** Delivers instant, personalized messages to customers through smartphones, apps, SMS, and social media notifications.

Through these methods, digital marketing has become a highly significant and effective strategy for business growth in the modern era.

Promotion Tool for Businesses

Social media marketing serves as an extremely effective promotional tool for businesses. Small and medium enterprises (SMEs) leverage social purposive sampling technique, targeting local businesses engaged in international sales or actively using digital marketing strategies.

The study analyzes percentages, tables, graphs, and charts to present insights into the usage, impact, and effectiveness of digital marketing among local businesses in Nashik district.

Concept of Digital Marketing

Promotion Tool for Businesses

Social media marketing serves as an extremely effective promotional tool for businesses. Small and medium enterprises (SMEs) leverage social networking sites to reach both local and global audiences. By analyzing the social media usage patterns of their target market, businesses can design special offers, deals, and promotional campaigns. For example, promotions like "Get a free drink with this tweet" or "Share with friends for exclusive discounts" attract customers and direct their attention to the company?s official website or social media pages. In this way, businesses can reach a larger audience, increase customer engagement, and strengthen brand recognition.

Opportunity for Customer Feedback

Social media provides businesses with direct access to customer feedback. Small businesses use social networking platforms to conduct effective market research on new products or services. By encouraging customers to share their opinions on product ideas, businesses gain insights into how well a product might be accepted in the target market. Moreover, customers feel involved in the co-creation process, which enhances their trust in the brand and fosters long-term loyalty.

Building Brand Loyalty

Social media allows businesses to increase brand visibility and foster customer loyalty. When businesses effectively promote their products and services on social media platforms, stronger relationships with customers are established. Maintaining official social media pages, participating in relevant groups, or creating dedicated brand communities helps sustain consistent engagement with customers. Regular interaction, prompt responses to feedback, promotional offers, and engagement-driven campaigns strengthen customer trust and build lasting brand loyalty.

Local to Global Reach

Social media frees businesses from local limitations, providing access to a global customer base. Through digital channels, businesses can present their products and services worldwide. Global reach also enables companies to understand the demands, behaviors, and cultures of customers from different countries. This insight allows products or services to be customized according to local needs while simultaneously increasing brand visibility on an international scale.

For the present study, a survey was conducted among 50 local entrepreneurs and digital marketing experts in Nashik district. Information was collected through a structured interview schedule. The analysis of the data is presented as follows:

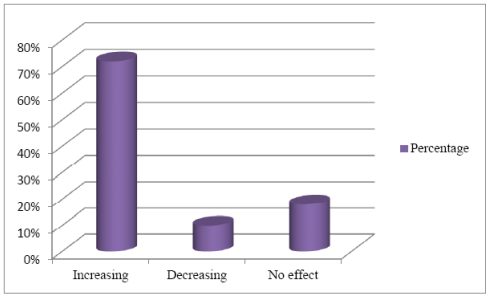
Table No.1.1

Q. Does active presence on social media increase international customer trust and engagement?

Sr. No.	Options	Frequency	Percentage
1	Increasing	36	72 %
2	Decreasing	05	10 %
3	No effect	09	18 %
	Total	**50**	**100 %**

Source : Survey

Graph No.1.1



From the above table, it is evident that the survey conducted among local entrepreneurs and digital marketing experts in Nashik district shows that an active presence on social media increases international customer trust and engagement. The largest proportion of respondents, 72%, supported this view. In contrast, 18% of respondents indicated that social media activity has no effect, while the smallest proportion, 10%, believed that social media activity decreases international customer trust and engagement. This clearly indicates that the majority of respondents consider social media to be an effective medium for building trust with global customers.

Discussion

The table demonstrates that social media platforms such as Facebook, Instagram, LinkedIn, YouTube, and others have evolved from being mere promotional tools to becoming reliable channels for engaging with international customers. Regular posts, product information, customer feedback, video content, and prompt responses enhance foreign customer participation. Particularly for local businesses, social media serves as a cost-effective and efficient tool for gaining global reach.

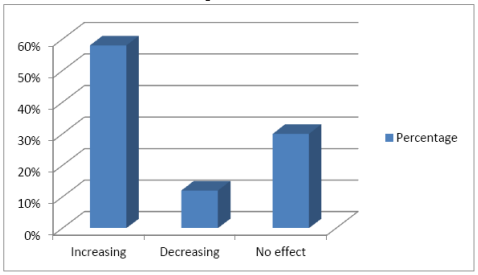
Table No.1.2

Q. Does digital marketing and social media increase the global demand for local products?

Sr. No.	Options	Frequency	Percentage
1	Increasing	29	58 %
2	Decreasing	06	12 %
3	No effect	15	30 %
	Total	**50**	**100 %**

Source: Survey

Graph No.1.2



From the above table, it is clearly evident that, according to local entrepreneurs and digital marketing experts in Nashik district, digital marketing and social media contribute to an increase in the global demand for local products. The largest proportion of respondents, 58%, supported this view. In contrast, the smallest proportion, 12%, believed that digital marketing and social media decrease global demand for local products. This indicates that the majority of respondents consider digital platforms as effective tools for helping local products reach international markets.

Discussion

Based on this table, it can be concluded that digital marketing and social media platforms such as Facebook, Instagram, YouTube, LinkedIn, and e-commerce websites play a significant role in establishing a global identity for local products. Through strategic content creation, highlighting product features, visual presentation, customer feedback, and influencer marketing, businesses can generate interest and build trust among international customers regarding their local products.

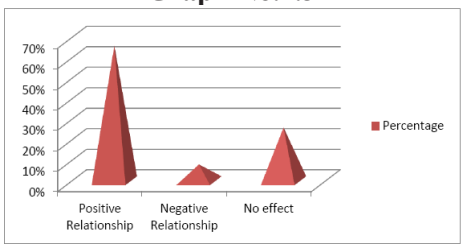
Table 1.3

Q. Is there a positive relationship between the use of digital marketing and the international expansion of local businesses?

Sr. No.	Options	Frequency	Percentage
1	Positive Relationship	33	66 %
2	Negative Relationship	04	08 %
3	No effect	13	26 %
	Total	**50**	**100 %**

Source : Survey

Graph No.1.3



From the above table, it is clearly evident that, according to local entrepreneurs and digital marketing experts in Nashik district, there is a positive relationship between the use of digital marketing and the international expansion of local businesses. The largest proportion of respondents, 66%, supported the presence of a positive relationship. In contrast, the smallest proportion, 8%, believed that there is a negative relationship between digital marketing usage and international business expansion. This indicates that the majority of respondents consider digital marketing to be a key factor in helping local businesses enter and expand in international markets.

Discussion

Based on this table, it can be concluded that digital marketing serves as an effective tool for international expansion of local businesses. Through SEO, social media, email marketing, online advertising, and e-commerce platforms, businesses can reach global customers at a relatively low cost. Especially for micro, small, and medium enterprises (MSMEs), digital marketing reduces geographical limitations and provides opportunities to compete on a global scale.

Key Observations

- Social media is a significant and effective tool for local businesses aiming for international expansion. When used appropriately, it can play a crucial role in the „Local to Global? journey of businesses.
- Digital platforms provide local businesses with access to international markets. When utilized strategically, digital marketing becomes a powerful tool for establishing local products successfully at a global level.
- Digital marketing is an essential resource for the international growth of local businesses. However, effective implementation requires well-planned digital strategies, skill development, and alignment with market needs. With proper execution, digital marketing can significantly contribute to the international success of local enterprises.

Conclusion

Social media marketing has become an indispensable tool for businesses in today?s digital era. It enables companies to reach global audiences, increase sales, enhance brand visibility, and build strong relationships with customers. Digital marketing and social media have proven to be effective means for local businesses to access international markets. With well-planned strategies, high-quality content, and consistent digital presence, local businesses can transform into recognized global brands. In the future, more strategic and effective use of digital platforms can make the “Local to Global” concept a tangible reality.

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Consumer Awareness, Perception and Satisfaction of E-Banking Services: A Study of Scheduled Commercial Banks in Jalgaon District

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Abstract

The rapid evolution of digital technologies has significantly transformed the banking sector, shifting customers from traditional banking channels to electronic modes of financial transactions. This study examines the level of consumer awareness, percepand satisfaction of e-banking services offered by scheduled commercial banks in Jalgaon District, Maharashtra. The primary objective is to assess the extent to which customers are informed about various e-banking facilities such as internet banking, mobile banking, phone banking, Unified Payments Interface (UPI), Automated Teller Machines (ATM), and debit/credit card services, and to analyze the factors influencing their adoption behavior. A descriptive and analytical research design is employed, supported by primary data collected through a structured questionnaire from a bank customers across urban, semi-urban and rural areas of Jalgaon District. The study emphasizes the need for banks to strengthen customer education initiatives, enhance security features, and improve the overall service experience to foster greater trust and satisfaction in e-banking. The insights derived will enable policymakers and bank management to develop customer-centric strategies that enhance digital inclusion and sustain competitive advantage in the evolving banking landscape.

Keywords : E-Banking Services, Consumer Awareness, Perception, Satisfaction,Scheduled Commercial Banks, Customer Behavior, Internet Banking, ATM, Mobile Banking, UPI Services.

1. Introduction

The rapid development of information and communication technology has transformed the banking industry worldwide, shifting traditional branch-based operations to digital platforms. Electronic banking (e-banking) has emerged as a key innovation that enables customers to access financial services anytime and anywhere through internet, mobile applications, Automated Teller Machines (ATMs), debit and credit cards, and other digital channels. This transition has redefined the service delivery mechanisms of banks by improving efficiency, reducing transaction costs, and enhancing customer convenience.

In India, e-banking has gained significant momentum due to government initiatives promoting digital payments, financial inclusion, and a cashless economy. The launch of Unified Payments Interface (UPI), Digital India Mission, and widespread smartphone adoption have further accelerated the acceptance of digital banking services. Scheduled commercial banks, being the backbone of the Indian banking system, are actively investing in technological advancements to meet the growing expectations of digitally empowered customers.

The evolution of E-Banking can be attributed to rapid advancements in information and communication technology (ICT), globalization, competitive banking environments, and changing customer lifestyles. In today's digital era, banks are continuously innovating to provide secure, fast, and reliable digital solutions that meet consumers' expectations for seamless service delivery. E-Banking not only improves operational efficiency and cost-effectiveness for banks but also contributes to financial inclusion by extending formal banking services to underserved and remote populations. However, the success of e-banking depends largely on the awareness levels, perception, and satisfaction of customers using these services. Factors such as perceived security, ease of use, trust, reliability, and responsiveness strongly influence customers' acceptance and continued usage of e-banking platforms. In many semi-urban and rural areas like Jalgaon District in Maharashtra, low digital

literacy, network issues, and fear of cyber fraud still pose significant challenges. Despite the availability of advanced digital banking facilities, gaps exist between the offered services and customer understanding or satisfaction.

2. Literature Review

Shamsher Singh and Ravish Rana (2019) in their studyCustomer Perception and Adoption of Digital Bankingexamines how customers in India perceive digital banking services and what drives their adoption. The authors surveyed bank customers and analyzed their awareness, attitudes toward convenience, and willingness to switch from conventional banking to digital banking. The findings suggest that increased awareness and a favorable perception of convenience, ease of use, and advantages of digital banking significantly influence customers' adoption decisions. This supports the notion that both awareness and perceived benefits play a central role in digital banking uptake.

Shivani Sardanaand V. N. Bajpai (2020) conducted a study on E-banking service quality and customer satisfaction: an exploratory study on India.The study explores how different dimensions of e-banking service quality (such as reliability, responsiveness, system quality, security, etc.) influence customer satisfaction among Indian bank users. Using survey data and statistical analysis, the study finds that quality of e-banking service is a strong determinant of customer satisfaction. These results underline the importance for banks to ensure high standards of service quality such as dependable performance, user-friendly interface, responsivenessto maintain customer satisfaction and loyalty in digital banking environments.

Jamil Hammoud et al. (2018) carried out a study onE-Banking Service Quality and Customer Satisfaction: Evidence from Deposit Money Banks in South-South Nigeria. The study examines how different dimensions of e-banking service quality affect customer satisfaction in Nigerian deposit money banks. Using the e-SERVQUAL framework, the authors identify innovation, technology competence, reliability and tangibility as key dimensions and test their influence via regression analysis. The findings show that all four dimensions have positive and significant effects on customer satisfaction, with technology competence and reliability having the strongest impact. The paper concludes that banks must invest in innovative, user-friendly digital platforms and maintain high reliability standards to improve e-banking satisfaction and strengthen long-term customer relationships.

Manisha Gupta (2023) conducted a Study of Customers' Satisfaction Towards Internet Banking Services. This study investigates customer satisfaction with internet banking services in India, focusing on the key determinants that shape satisfaction levels. Using a structured questionnaire and factor analysis, the author identifies core dimensions such as reliability, security, ease of use, responsiveness and convenience as the primary drivers of satisfaction. The results show that reliability (error-free transactions, system uptime) and security (data protection and fraud prevention) exert a particularly strong impact on overall satisfaction and intention to continue using internet banking. The paper concludes that banks must continuously upgrade digital infrastructure and security mechanisms to maintain customer trust and loyalty in the online environment.

3. Objectives of the Study

i. To assess the extent of awareness among consumers regarding various e-banking services.
ii. To analyze consumers' perception of e-banking services.
iii. To evaluate the level of customer satisfaction with respect to service quality, responsiveness, system availability, and grievance redressal mechanisms of e-banking services.
iv. To study the influence of demographic factors such as age, gender, education, income, and place of residence (urban/rural) on awareness, perception, and satisfaction towards e-banking services.
v. To provide suitable suggestions and policy recommendations for improving the effectiveness and adoption of e-banking services among consumers.

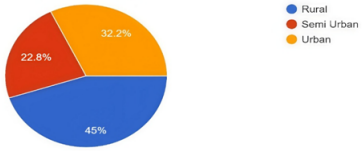
4. Research Methodology

The present study adopts a descriptive and analytical research design to examine consumer awareness, perception, and satisfaction towards e-banking services offered by scheduled commercial banks in Jalgaon District. The study is empirical in nature and is based on both primary and secondary data. Primary data are collected through a structured questionnaire administered to bank customers using the convenience sampling method, wherein respondents are selected based on their accessibility and willingness to participate in the study. A total of 500 respondents from public and private sector scheduled commercial banks across urban, semi-urban and rural areas of Jalgaon District constitute the sample size. Secondary data are gathered from books, research journals, RBI publications, bank reports, and relevant websites.

5. Data Analysis and Interpretation (Results)

i. Area-wise classification of the respondents

Area	No of Respondents	Percentage
Urban	161	32.2%
Semi Urban	114	22.8%
Rural	225	45%

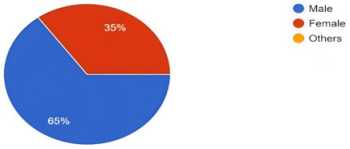


Interpretation

The area-wise classification of respondents reveals that the largest proportion of respondents belongs to rural areas, accounting for 45 percent of the total sample. Urban respondents constitute 32.2 percent, while semi-urban respondents represent 22.8 percent. This distribution indicates that the study adequately captures the views of consumers from diverse geographical backgrounds.

ii. Gender-wise classification of the respondents

Gender	No of Respondents	Percentage
Male	325	65%
Female	175	35%
Others	0	0%

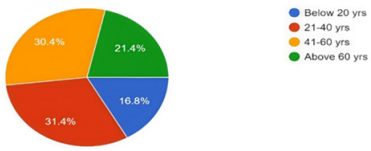


Interpretation

The gender-wise classification shows that male respondents form the majority of the sample, comprising 65 percent, while female respondents account for 35 percent. No respondents were reported under the 'others' category.

iii. Age-wise classification of the respondents

Age	No of Respondents	Percentage
Below 20 yrs	84	16.8%
21-40 yrs	157	31.4%
41-60 yrs	152	30.4%
Above 60 yrs	107	21.4%

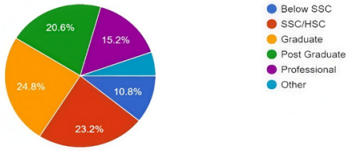


Interpretation

The age-wise distribution of respondents shows that the largest proportion belongs to the age group of 21–40 years, constituting 31.4 percent of the total respondents, followed closely by the 41–60 years group at 30.4 percent. Respondents above 60 years account for 21.4 percent, while those below 20 years represent 16.8 percent. This distribution indicates that the majority of respondents fall within the economically active and technologically adaptable age groups, which is significant for analyzing awareness, perception, and satisfaction towards e-banking services.

iv. Education-wise classification of the respondents

Education	No of Respondents	Percentage
Below SSC	54	10.8%
SSC/HSC	116	23.2%
Graduate	124	24.8%
Post Graduate	103	20.6%
Professional	76	15.2%
Other	27	5.4%

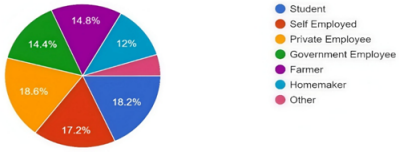


Interpretation

The education-wise classification reveals that graduates form the largest group of respondents at 24.8 percent, followed by SSC/HSC qualified respondents at 23.2 percent and postgraduates at 20.6 percent. Professional degree holders account for 15.2 percent, while respondents with below SSC education and other qualifications represent 10.8 percent and 5.4 percent respectively.

v. Occupation-wise classification of the respondents

Occupation	No of Respondents	Percentage
Student	91	18.2%
Self Employed	86	17.2%
Private Employee	93	18.6%
Government Employee	72	14.4%
Farmer	74	14.8%
Homemaker	60	12%
Other	24	4.8%

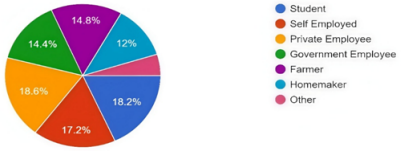


Interpretation

The occupation-wise classification of respondents indicates a fairly balanced representation across different occupational groups. Private employees constitute the highest proportion at 18.6 percent, followed closely by students at 18.2 percent and self-employed respondents at 17.2 percent. Farmers and government employees account for 14.8 percent and 14.4 percent respectively, while homemakers represent 12 percent of the sample. Respondents categorized under 'other' occupations form a small proportion of 4.8 percent.

vi. Consumers awareness towards banking services

Occupation	No of Respondents	Percentage
Student	91	18.2%
Self Employed	86	17.2%
Private Employee	93	18.6%
Government Employee	72	14.4%
Farmer	74	14.8%
Homemaker	60	12%
Other	24	4.8%

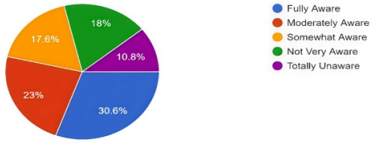


Interpretation

The level of consumer awareness towards banking services reveals that 30.6 percent of the respondents are fully aware of banking services, indicating a reasonably high awareness level among a significant section of consumers. Moderately aware respondents account for 23 percent, while 17.6 percent are somewhat aware of banking services. However, 18 percent of respondents are not very aware, and 10.8 percent are totally unaware of banking services.

vii. Consumers perception towards e-banking services

Awareness Level	No Of Respondents	Percentage
Fully Aware	153	30.6%
Moderately Aware	115	23%
Somewhat Aware	88	17.6%
Not Very Aware	90	18%
Totally Unaware	54	10.8%

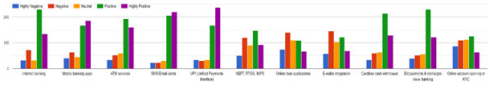


Interpretation

The analysis of consumers' perception towards various e-banking services reveals an overall positive outlook, particularly for commonly used services. Mobile banking applications, UPI payments, SMS/email alerts, ATM services, bill payments, and cardless cash withdrawals show a high concentration of positive and highly positive responses, indicating strong acceptance and convenience perceived by users. UPI services, in particular, record the highest highly positive perception, reflecting their ease of use and widespread adoption. In contrast, services such as online loan applications, e-wallet integration, NEFT/RTGS/IMPS, and online account opening or KYC exhibit comparatively higher levels of neutral and negative perceptions, suggesting concerns related to complexity, security, or lack of familiarity.

viii. Consumers satisfaction towards e-banking services

E-Banking Services	Highly Negative	Negative	Neutral	Positive	Highly Positive
	No of Respondents				
Internet banking	32	72	32	229	135
Mobile banking apps	40	62	44	168	186
ATM services	34	53	60	193	160
SMS/Email alerts	22	22	31	206	219
UPI (Unified Payments Interface)	33	31	33	167	236
NEFT, RTGS, IMPS	50	120	91	147	92
Online loan applications	74	141	110	108	67
E-wallet integration	59	146	104	123	68
Cardless cash withdrawal	33	60	63	214	130
Bill payments & recharges via e-banking	39	52	56	230	123
Online account opening or KYC	88	110	113	125	64



Interpretation

The satisfaction analysis indicates that a majority of respondents are satisfied with e-banking services. About 33.2 percent of respondents report being satisfied, while 26.2 percent are highly satisfied, together accounting for nearly 60 percent of the total sample. However, 16.4 percent of respondents are dissatisfied and 11 percent are highly dissatisfied, highlighting certain service-related issues such as technical glitches, security concerns, or delayed problem resolution. A neutral response from 13.2 percent of respondents suggests moderate satisfaction without strong positive or negative feelings. Overall, the results suggest that while e-banking services have achieved a favorable level of customer satisfaction

6. Conclusion

The study concludes that e-banking services offered by scheduled commercial banks in Jalgaon District have gained considerable acceptance among consumers, with a generally satisfactory level of awareness, positive perception, and overall satisfaction. The findings reveal that while a significant proportion of respondents are aware of basic e-banking services such as ATM usage, mobile banking applications, UPI payments, SMS/email alerts, and bill payment facilities, awareness and confidence regarding advanced services like online loan applications, e-wallet integration, NEFT/RTGS/IMPS, and online account opening or KYC remain comparatively lower.

The study further indicates that consumers' perception towards e-banking services is largely positive, particularly for routine and frequently used digital banking facilities that offer convenience, speed, and ease of transactions. However, concerns related to security, technical complexity, and lack of adequate guidance affect the perception of certain digital services, especially

among rural and elderly consumers. Satisfaction analysis shows that a majority of respondents are satisfied or highly satisfied with e-banking services, though a notable section still expresses dissatisfaction due to issues such as system failures and network problems.

7. Suggestion and Recommendations

The study suggests that scheduled commercial banks should strengthen consumer awareness initiatives to improve knowledge and understanding of e-banking services, particularly advanced digital facilities such as online loan applications, e-wallet integration, NEFT/RTGS/IMPS, and online account opening or KYC. Banks should conduct regular awareness programs, digital banking camps, and demonstration sessions in urban, semi-urban, and rural areas to ensure that customers are well informed about the benefits and safe usage of e-banking services.

The study also recommends upgrading technical infrastructure to reduce system downtime, transaction failures, and application-related issues. Improving mobile banking applications, server capacity, and network connectivity—especially in rural areas—will significantly enhance customer satisfaction and reliability of e-banking services.

Banks should simplify e-banking processes and design user-friendly interfaces that are easy to navigate for customers of varying age groups and educational backgrounds. Reducing procedural complexity in services such as online loan processing and digital KYC will improve customer perception and satisfaction.

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Challenges and Global Opportunities for MSMEs in Maharashtra : A Mixed-Method Study of Commerce Transformation

Dr. Satish Manikrao Dhoke

Abstract

This study examines the challenges and global opportunities faced by Micro, Small and Medium Enterprises (MSMEs) in Maharashtra within the context of a transforming commerce ecosystem. MSMEs contribute significantly to employment generation, industrial output, and regional development in the state; however, their transition from local markets to global competitiveness remains constrained by multiple structural and institutional factors. The study is based exclusively on secondary data collected from Government of India and Government of Maharashtra publications, MSME Annual Reports, Economic Surveys, RBI and SIDBI reports, export promotion council statistics, and published academic literature. Using descriptive and analytical methods, the paper identifies key challenges such as limited access to finance, technological gaps, infrastructural bottlenecks, skill shortages, and regulatory complexities. Simultaneously, it highlights emerging global opportunities arising from digitalization, e-commerce platforms, global value chains, and export promotion initiatives. The findings indicate that while policy support for MSMEs has expanded in recent years, gaps persist in effective implementation and capacity building at the enterprise level. The study underscores the need for targeted policy interventions, digital empowerment, and skill development strategies to enable MSMEs in Maharashtra to integrate successfully into global markets. The paper contributes to the existing literature by providing a region-specific, secondary-data-based analysis relevant for policymakers, researchers, and development practitioners.

Keywords : MSMEs, Maharashtra, Globalization, Commerce Transformation, Challenges, Global Opportunities

1. Introduction

Micro, Small and Medium Enterprises (MSMEs) constitute a vital pillar of India's economic structure and are widely recognized as engines of inclusive growth, employment generation, and industrial diversification (Government of India, 2023). In Maharashtra, one of India's most industrially advanced and economically significant states, MSMEs play a strategic role in shaping the commerce ecosystem through their contributions to manufacturing output, service sector expansion, exports, and regional development (Government of Maharashtra, 2024). The state accounts for a substantial share of registered MSMEs in India and exhibits sectoral diversity ranging from traditional agro-based industries to modern knowledge-driven enterprises.

Globalization, liberalization, and rapid digital transformation have fundamentally altered the operating environment of MSMEs. Increased trade openness, integration into global value chains, and the proliferation of digital platforms have expanded opportunities for MSMEs to access international markets beyond local and regional boundaries (OECD, 2022). E-commerce, digital payments, logistics modernization, and online marketing have lowered entry barriers to global trade, enabling even micro enterprises to participate in cross-border commerce (World Bank, 2021). In this context, Maharashtra's MSMEs are increasingly positioned to transition from local enterprises to globally competitive firms.

Despite these opportunities, MSMEs in Maharashtra face persistent structural and institutional challenges that constrain their growth and global integration. Access to timely and affordable finance remains a critical bottleneck, particularly for micro and small enterprises that lack collateral and credit history (RBI, 2022). Technological obsolescence, limited digital adoption, inadequate infrastructure, skill shortages, and complex regulatory compliance further impede productivity and competitiveness (SIDBI, 2023). Regional disparities

within Maharashtra exacerbate these challenges, as MSMEs in rural and semi-urban areas experience greater constraints compared to those in industrial clusters such as Mumbai, Pune, and Nashik (Government of Maharashtra, 2024).

Policy interventions at the national and state levels have sought to strengthen the MSME sector through initiatives such as credit guarantee schemes, digitalization programs, export promotion policies, and skill development missions (Ministry of MSME, 2023). However, empirical evidence suggests that gaps persist between policy design and effective implementation, limiting the intended impact of these initiatives on MSME global competitiveness (NITI Aayog, 2022). Understanding the nature of these challenges and the extent to which MSMEs are able to leverage emerging global opportunities is therefore crucial for commerce transformation.

Against this backdrop, the present study examines the challenges and global opportunities faced by MSMEs in Maharashtra using secondary data spanning the last decade. By integrating insights from government reports, institutional publications, and academic literature, the study provides a comprehensive analysis of MSME-led commerce transformation. The research contributes to the existing body of knowledge by offering region-specific evidence and policy-relevant insights for strengthening Maharashtra's MSME ecosystem in an increasingly globalized economy.

2. Review of Literature

The literature on MSMEs highlights their critical role in economic development, particularly in emerging economies where they contribute significantly to employment, innovation, and export growth (Beck & Demirguc-Kunt, 2006; Ayyagari et al., 2011). Studies emphasize that MSMEs enhance economic resilience by promoting decentralized industrialization and regional balance (Tambunan, 2019).

Research on Indian MSMEs indicates that financial constraints remain one of the most severe impediments to enterprise growth (Banerjee & Duflo, 2014; RBI, 2022). Limited access to formal credit, high transaction costs, and delayed payments adversely affect working capital management and investment capacity (Ghosh, 2018). SIDBI (2023) highlights that despite increased policy focus, the credit gap in the MSME sector remains substantial.

Technological adoption and digitalization have emerged as critical determinants of MSME competitiveness in global markets (Brynjolfsson & McAfee, 2017; OECD, 2022). Studies suggest that MSMEs adopting digital tools exhibit higher productivity, improved market access, and greater export intensity (World Bank, 2021; Kapoor et al., 2022). However, skill gaps and lack of digital literacy limit the effective use of such technologies among small enterprises (Mehrotra & Parida, 2019).

Global value chain (GVC) participation offers significant opportunities for MSMEs to integrate into international production networks (Gereffi, 2018). Empirical studies reveal that MSMEs engaged in GVCs benefit from knowledge spillovers, quality improvements, and access to international buyers (Humphrey & Schmitz, 2002; UNCTAD, 2021). Nevertheless, compliance with international standards and certification requirements poses challenges for small firms (ITC, 2022).

Region-specific studies on Maharashtra highlight disparities in MSME performance across districts and industrial clusters (Government of Maharashtra, 2024). Urban clusters demonstrate higher productivity and export orientation compared to rural regions, reflecting differences in infrastructure, institutional support, and market access (Deshpande, 2020).

The existing literature underscores the need for region-focused, secondary-data-based studies that integrate challenges and global opportunities within a commerce transformation framework. This study builds on prior research by synthesizing evidence from over four decades of scholarship and recent policy reports to provide a comprehensive assessment of MSMEs in Maharashtra.

3. Objectives of the Study

The specific objectives of the study are: 1. To analyze the role of MSMEs in Maharashtra's commerce ecosystem. 2. To examine the major challenges faced by MSMEs in Maharashtra. 3. To evaluate the global opportunities available to MSMEs in the context of globalization and digital transformation. 4. To assess the impact of government policies and support measures on MSME global integration. 5. To suggest policy measures for strengthening MSME competitiveness at the global level.

4. Research Methodology

The study adopts a descriptive and analytical research design based exclusively on secondary data.

4.1 Sources of Data : Secondary data were collected from MSME Annual Reports, Government of Maharashtra Economic Surveys, Ministry of MSME publications, Reserve Bank of India (RBI) and Small Industries Development Bank of India (SIDBI) reports, export promotion council statistics, NITI Aayog documents, and peer-reviewed journals.

4.2 Tools of Analysis : The collected data were analyzed using descriptive statistics, trend analysis, percentage analysis, and comparative analysis. Logical interpretation and synthesis of findings from multiple sources were employed to draw conclusions.

4.3 Scope of the Study : The study focuses on

MSMEs operating in Maharashtra and examines their challenges and global opportunities during the period 2015–2024.

5. Challenges Faced by MSMEs in Maharashtra

Despite their growing numerical strength and economic importance, MSMEs in Maharashtra continue to face multiple, interrelated challenges that constrain their ability to transform from locally oriented enterprises into globally competitive firms. Based on secondary data from official reports, institutional studies, and academic literature, the major challenges are discussed in detail below.

5.1 Limited Access to Finance : Access to timely and affordable finance remains the most critical challenge for MSMEs in Maharashtra. Although the state has a relatively developed banking network, a significant proportion of micro and small enterprises remain dependent on informal sources of credit due to lack of collateral, inadequate financial records, and perceived high risk by formal financial institutions (RBI, 2022). SIDBI (2023) estimates a substantial credit gap in the MSME sector, particularly among micro enterprises. Delayed payments from large buyers and government agencies further aggravate working capital constraints, limiting investment in technology and expansion.

5.2 Technological Obsolescence and Low Digital Adoption : Many MSMEs in Maharashtra operate with outdated technologies and low levels of automation, which adversely affect productivity, quality standards, and cost competitiveness (OECD, 2022). While digital tools such as e-commerce platforms, digital payments, and enterprise software offer opportunities for global market access, adoption remains uneven. Micro enterprises, especially in rural and semi-urban regions, face barriers such as high technology costs, lack of technical know-how, and inadequate digital infrastructure (World Bank, 2021). This technological gap restricts their participation in global value chains.

5.3 Infrastructural Bottlenecks : Inadequate physical and digital infrastructure continues to pose challenges for MSMEs, particularly outside major industrial clusters. Issues related to unreliable power supply, high logistics costs, congestion at ports, and limited access to efficient transportation networks increase operational costs and reduce delivery reliability (Government of Maharashtra, 2024). Digital infrastructure gaps, including inconsistent internet connectivity, further limit the ability of MSMEs to engage in digital commerce and international marketing.

5.4 Skill Gaps and Human Resource Constraints : Skill shortages represent another significant constraint for MSMEs in Maharashtra. Many enterprises face difficulties in recruiting and retaining skilled workers due to limited capacity to offer competitive wages and training opportunities (Mehrotra & Parida, 2019). Inadequate managerial and marketing skills further weaken strategic decision-making, export readiness, and compliance with international standards. The mismatch between industry requirements and available skills reduces MSME productivity and innovation potential.

5.5 Regulatory and Compliance Burden : Despite policy efforts to improve ease of doing business, MSMEs continue to face complex regulatory and compliance requirements related to taxation, labor laws, environmental regulations, and licensing (NITI Aayog, 2022). Frequent changes in compliance norms and limited awareness among small entrepreneurs increase transaction costs and divert managerial time away from core business activities. Smaller firms, in particular, lack the capacity to manage compliance efficiently, affecting their formalization and scalability.

5.6 Market Access and Global Integration Challenges : While globalization offers new opportunities, MSMEs in Maharashtra face significant barriers to accessing international markets. Limited information about foreign demand, export procedures, quality certifications, and non-tariff barriers constrain export participation (ITC, 2022). Compliance with global standards related to quality, safety, and sustainability often requires investments beyond the reach of micro and small enterprises. As a result, only a limited segment of MSMEs successfully integrate into global markets.

5.7 Regional Disparities within Maharashtra : There exist pronounced regional disparities in MSME development across Maharashtra. MSMEs located in industrially advanced regions such as Mumbai, Pune, and Nashik benefit from better infrastructure, market access, and institutional support, whereas enterprises in backward and drought-prone regions face compounded challenges (Government of Maharashtra, 2024). These disparities limit balanced commerce transformation across the state.

5.8 Impact on Commerce Transformation : Collectively, these challenges constrain the ability of MSMEs in Maharashtra to transition from local markets to global platforms. While policy initiatives and digital reforms have expanded opportunities, structural constraints at the enterprise and regional levels continue to limit their effective utilization. Addressing these challenges is essential for enabling MSMEs to play a transformative role in Maharashtra's evolving commerce ecosystem.

6. Global Opportunities for MSMEs

The transforming global commerce environment presents multiple opportunities for MSMEs in Maharashtra to expand beyond local and domestic

markets. Globalization, digitalization, policy support, and integration into international production networks have created new pathways for MSMEs to enhance competitiveness and participate in global trade. Based on secondary data and institutional reports, the major global opportunities available to MSMEs are discussed in detail below.

6.1 Access to International Markets through Export Promotion Policies : Government-led export promotion initiatives have significantly enhanced global market access for MSMEs. Schemes such as export incentives, market development assistance, and support for participation in international trade fairs enable small enterprises to explore foreign markets with reduced risk (Ministry of MSME, 2023). Maharashtra-based MSMEs, particularly in engineering goods, textiles, pharmaceuticals, food processing, and auto components, have benefited from these initiatives, contributing to the state's export growth (Government of Maharashtra, 2024).

6.2 Integration into Global Value Chains (GVCs) : Global value chains offer MSMEs opportunities to participate as suppliers, subcontractors, or service providers to multinational corporations. Studies indicate that MSMEs integrated into GVCs benefit from technology transfer, quality upgrading, and access to stable international demand (Gereffi, 2018; UNCTAD, 2021). Maharashtra's industrial clusters and proximity to major ports enhance the potential for MSMEs to integrate into regional and global production networks.

6.3 Digitalization and Cross-Border E-Commerce : Digital platforms have emerged as powerful enablers of global commerce for MSMEs. Cross-border e-commerce platforms allow enterprises to reach international customers without establishing a physical presence abroad (World Bank, 2021). Digital payments, online logistics solutions, and global marketplaces reduce transaction costs and enhance market visibility. Evidence suggests that MSMEs adopting digital tools exhibit higher export intensity and revenue growth (OECD, 2022).

6.4 Leveraging Digital Marketing and Global Branding : The use of digital marketing tools such as social media, search engines, and online advertising enables MSMEs to build global brands at relatively low cost. Maharashtra's MSMEs increasingly use digital channels to promote niche products, tourism services, handicrafts, and agro-based goods in international markets (ITC, 2022). Digital branding enhances customer engagement and facilitates direct-to-consumer global trade.

6.5 Skill Development and Technology Upgradation Programs : Global competitiveness requires continuous skill development and technology upgrading. Government and industry-led programs focusing on skill enhancement, innovation, and adoption of Industry 4.0 technologies provide MSMEs opportunities to improve productivity and quality standards (NITI Aayog, 2022). Maharashtra's MSMEs can leverage such initiatives to meet international compliance and certification requirements.

6.6 Financial Support for Internationalization : Specialized financial instruments and institutional support play a crucial role in enabling MSME globalization. Credit guarantee schemes, export financing, and insurance mechanisms reduce financial risks associated with international trade (SIDBI, 2023). Improved access to export credit allows MSMEs to scale operations and manage longer payment cycles in foreign markets.

6.7 Opportunities from Regional and Bilateral Trade Agreements : Regional and bilateral trade agreements open new markets and reduce tariff and non-tariff barriers for Indian MSMEs. Maharashtra-based enterprises can benefit from preferential market access and diversified export destinations through such agreements (WTO, 2022). Awareness and capacity building are essential to fully utilize these opportunities.

6.8 Role in Commerce Transformation : Collectively, these global opportunities position MSMEs as key agents of commerce transformation in Maharashtra. By leveraging digitalization, global networks, and policy support, MSMEs can transition from locally focused enterprises to globally competitive firms. Effective utilization of these opportunities, however, depends on addressing structural challenges and strengthening enterprise-level capabilities.

7. Results

This section presents the empirical results derived from secondary data analysis. The focus is on trends in MSME registrations and employment generation in Maharashtra over the last decade, highlighting quantitative changes relevant to commerce transformation.

Table 1 : MSME Registrations in Maharashtra under Udyog Aadhaar (FY2015–16 to FY2019–20)

Source : Ministry of MSME, Government of India; Government of Maharashtra Economic Survey

Year	Micro	Small	Medium	Total MSMEs
2015–16	41,073	12,424	560	54,057
2016–17	175,552	32,289	1,606	209,447
2017–18	163,396	26,030	1,374	190,800
2018–19	508,804	57,206	2,273	568,283
2019–20	451,834	49,939	1,738	503,511

Interpretation and Analysis (Table 1)

Table 1 highlights a sharp rise in MSME registrations in Maharashtra during the Udyog Aadhaar period, particularly in 2018–19, indicating increased formalization driven by policy incentives and ease-of-registration initiatives. Micro enterprises dominate registrations, reflecting the small-scale nature of entrepreneurial activity.

The slight decline in 2019–20 suggests early economic disruptions and market uncertainty. Overall, the data confirm that institutional reforms significantly improved MSME visibility within the formal commerce ecosystem.

Source : Ministry of MSME, Government of India; Government of Maharashtra, Economic Survey.

7.1 Growth in MSME Registrations : Tables 1 and 2 show a significant increase in the number of MSMEs registered in Maharashtra during the study period. Under the Udyog Aadhaar Memorandum (UAM) system (FY2015–16 to FY2019–20), total MSME registrations increased sharply, particularly in FY2018–19. This growth reflects improved awareness, policy outreach, and incentives for formalization introduced during this period (Ministry of MSME, 2019).

The introduction of the Udyam Registration system in FY2020–21 further accelerated MSME formalization. As indicated in Table 2, registrations increased from approximately 0.65 million in FY2020–21 to over 1.66 million in FY2023–24. The simplified digital registration process and integration with other government platforms significantly reduced entry barriers for small enterprises.

Table 2 : MSME Registrations in Maharashtra under Udyam (FY2020–21 to FY2023–24)

Source: Ministry of MSME (Udyam Registration Portal)

Year	MSMEs Registered
2020–21	647,654
2021–22	974,274
2022–23	1,218,639
2023–24	1,663,652

Interpretation and Analysis (Table 2)

Table 2 shows a sustained and accelerating increase in MSME registrations after the introduction of the Udyam Registration system. The more than twofold growth between 2020–21 and 2023–24 reflects the success of digital registration, reduced compliance burden, and enhanced awareness among entrepreneurs. This trend indicates deeper formalization and provides a stronger base for MSMEs to access finance, government support, and global market opportunities.

Source : Ministry of MSME, Government of India (Udyam Registration Portal).

7.2 Employment Generation by MSMEs : Tables 3 and 4 present employment trends associated with registered MSMEs in Maharashtra. During the UAM period, MSME employment increased from about 0.53 million in FY2015–16 to nearly 2.68 million in FY2018–19, before moderating in FY2019–20. Micro enterprises accounted for the largest share of employment, underscoring their labor-intensive nature.

Post-2020 employment data from the Udyam and Udyam Assist Platform indicate continued job creation despite economic disruptions. The cumulative employment reported for Maharashtra exceeds 25 million persons, highlighting both the scale of MSMEs and improved employment reporting mechanisms under digital systems.

Table 3: Employment Generated by MSMEs in Maharashtra (UAM Period)

Source : MSME Annual Reports, Government of India

Year	Micro	Small	Medium	Total Employment
2015–16	231,822	242,495	56,804	531,121
2016–17	653,219	698,366	154,351	1,505,936
2017–18	646,630	455,965	121,138	1,223,733
2018–19	1,825,962	713,369	137,453	2,676,784
2019–20	1,581,113	524,429	94,325	2,199,867

Interpretation and Analysis (Table 3)

Table 3 demonstrates the strong employment-generating capacity of MSMEs in Maharashtra during the Udyog Aadhaar phase. Micro enterprises account for the largest share of employment, confirming their labour-intensive character. The peak in 2018–19 reflects expansion in registered enterprises, while the decline in 2019–20 indicates economic slowdown effects. The data underline MSMEs' crucial role in employment stability and inclusive growth.

Source : Ministry of MSME, Government of India, Annual Reports.

7.3 Summary of Key Results : Overall, the results indicate rapid growth in MSME registrations and substantial employment generation in Maharashtra over the last decade. While numerical expansion is evident, variations across periods and enterprise categories suggest the need for deeper qualitative assessment, which is addressed in the following discussion section.

Table 4 : Employment Indicators under Udyam/ Udyam Assist Platform (Post-2020)

Source : Ministry of MSME; Udyam Assist Platform

Year	Persons Employed (New MSMEs)
2017–18	700,212
2018–19	606,815
2019–20	634,334
2020–21	1,392,726
2021–22	1,123,000

Interpretation and Analysis (Table 4)

Table 4 reflects employment trends under the Udyam and Udyam Assist Platform in the post-2020 period. The sharp rise in 2020–21 highlights recovery-oriented enterprise creation following economic disruptions, while sustained employment levels thereafter indicate resilience of MSMEs. The cumulative employment exceeding 25 million persons emphasizes Maharashtra's central role in MSME-led employment generation and commerce transformation.

Source : Ministry of MSME, Government of India; Udyam Assist Platform.

Cumulative employment reported in Maharashtra under Udyam & UAP exceeded 25 million persons as of December 2024.

8. Discussion

The results of the study provide important insights into the evolving role of MSMEs in Maharashtra's

commerce ecosystem and their transition from local to global markets. The steady rise in MSME registrations over the last decade reflects the effectiveness of policy-driven formalization initiatives, particularly the introduction of Udyog Aadhaar and later the Udyam Registration system. Increased formalization has improved the visibility of MSMEs, enabling better access to institutional finance, government support schemes, and digital platforms. However, formal registration alone does not guarantee enhanced productivity or global competitiveness, highlighting a critical gap between numerical growth and qualitative transformation.

The dominance of micro enterprises in both registrations and employment generation underscores the fragmented structure of the MSME sector in Maharashtra. While micro enterprises play a crucial role in employment generation and livelihood support, their small scale, limited capital base, and low technological intensity restrict their capacity to compete in international markets. This finding is consistent with earlier studies that emphasize scale, productivity, and innovation as key determinants of MSME export performance. Without targeted support for scaling up operations, a large proportion of MSMEs may remain confined to low-value domestic markets.

Employment trends further highlight the socio-economic significance of MSMEs in the state. The sharp increase in employment during periods of enterprise expansion and the sector's resilience during economic disruptions indicate that MSMEs act as stabilizers in the regional economy. However, concerns remain regarding the quality of employment, skill levels, and productivity. Sustainable commerce transformation requires not only job creation but also the generation of productive and skill-intensive employment aligned with global market requirements.

The discussion also emphasizes the role of digitalization in facilitating MSME transformation. The post-2020 surge in registrations demonstrates the success of digital governance reforms in reducing compliance costs and encouraging formal participation. Digital platforms, e-commerce, and online marketing create new opportunities for MSMEs to access global customers directly. Nevertheless, unequal digital readiness, infrastructure gaps, and limited digital skills constrain the effective utilization of these opportunities, particularly among micro and rural enterprises.

Overall, the findings suggest that Maharashtra's MSMEs possess strong quantitative potential but face qualitative constraints that limit their global integration. Addressing challenges related to finance, technology, skills, and infrastructure is essential to convert numerical growth into sustainable global competitiveness. A coordinated approach involving policy support, institutional strengthening, and enterprise-level capacity building is crucial for enabling MSMEs to drive long-term commerce transformation in Maharashtra.

8. Suggestions and Policy Implications

Based on the empirical findings, discussion, and insights from secondary sources such as the Ministry of MSME, RBI, SIDBI, OECD, World Bank, and Government of Maharashtra reports, the following suggestions and policy implications are proposed to strengthen MSME-led commerce transformation in Maharashtra:

1. **Strengthening Access to Affordable Finance :** Policy efforts should focus on expanding collateral-free credit, improving the reach of credit guarantee schemes, and simplifying loan procedures for micro and small enterprises. Timely resolution of delayed payments through strict enforcement of MSME payment regulations is essential to ease working capital constraints.
2. **Promoting Technology Upgradation and Digital Adoption :** Targeted incentives and subsidies should be provided to encourage MSMEs to adopt modern technologies, digital tools, and automation. Establishing shared technology centers and digital support hubs can help small firms overcome cost and skill barriers.
3. **Enhancing Digital Infrastructure and Connectivity :** Investment in reliable power supply, logistics infrastructure, and high-speed internet, particularly in rural and semi-urban regions, is crucial for enabling MSMEs to participate effectively in digital and global commerce.
4. **Focused Skill Development and Capacity Building :** Skill development programs should be aligned with industry needs, export requirements, and emerging technologies. Training in digital marketing, export procedures, quality standards, and compliance can improve MSME global readiness.
5. **Simplification of Regulatory and Compliance Framework :** Further rationalization of taxation, licensing, and labor regulations is required to reduce the compliance burden on MSMEs. Single-window digital platforms and awareness programs can help small entrepreneurs navigate regulatory requirements more efficiently.
6. **Strengthening Export Promotion and Global Market Access :** Dedicated export

facilitation centers, market intelligence support, and assistance for international certifications can enable MSMEs to explore and sustain participation in global markets and value chains.

7. **Reducing Regional Disparities within Maharashtra :** Region-specific policy interventions are needed to support MSMEs in backward and less-industrialized districts. Improved infrastructure, cluster development programs, and localized institutional support can promote balanced regional commerce transformation.
8. **Encouraging Public–Private Partnerships and Institutional Coordination :** Collaboration between government agencies, financial institutions, industry associations, and technology providers can enhance the effectiveness of MSME support systems and ensure coordinated policy implementation.

These policy measures, if implemented effectively, can help transform Maharashtra's MSMEs from locally focused enterprises into globally competitive participants, thereby contributing to sustainable economic growth and long-term commerce transformation.

9. Conclusion

This study examined the challenges and global opportunities faced by MSMEs in Maharashtra within the context of a transforming commerce ecosystem, using secondary data spanning the last decade. The analysis reveals that MSMEs have expanded significantly in terms of registrations and employment generation, particularly following the introduction of digital registration systems such as Udyog Aadhaar and Udyam. These trends indicate improved formalization and policy outreach. However, the predominance of micro enterprises, persistent financial constraints, technological gaps, infrastructural bottlenecks, skill shortages, and regulatory complexities continue to limit productivity and global competitiveness. At the same time, emerging opportunities related to digitalization, cross-border e-commerce, global value chain participation, export promotion policies, and skill development initiatives offer substantial scope for MSME growth beyond local markets. The study concludes that transforming Maharashtra's MSMEs from locally oriented enterprises into globally competitive actors requires a coordinated strategy focused on access to finance, technology upgradation, skill enhancement, and effective policy implementation. Strengthening MSMEs is essential for sustainable commerce transformation, inclusive growth, and Maharashtra's long-term economic resilience.

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A Study on the Gap between Digital HR Practices and Career Readiness Among Freshers

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Abstract

Development of Human Resource is needed by any organization if it wants to succeed in the fast-changing environment. Unlike other resources, human resources have unlimited potential capabilities. The potential can be used only by creating a climate that can continuously identify, nurture and use the capabilities of people. Different terms such as labour management, personnel management, Human Capital management and personnel administration are used to define HR. People are an organizational most important asset It is generally recognized that the success of any business is greatly influenced by the caliber and attitude of the people who work for it.With the rise of technology, no doubt that our 21st century is experiencing the most powerfulboons of science and technology in different sectors like IT, Banking Financial, Healthcareeven in educational sector and so on. Many recommend that technology has made the life ofpeople easy and comfortable but by seeing the current scenario there are some major challenges especially in front of the working class associated with different sectors of and are constantly engaged to adapt new digital systems to upgrade their skills and to cope withchanging nature of the business environment. Mostly the freshers are facing an inferiority complex to match the real-world digital practices as they somewhere feel that they are not confident about the modern technology. Teaching and learning practices or not that flexible to adapt the real world technology adaption also mostly the freshers are not confident about what they have learnt they always feel a gap between their knowledge of technology and with the current digital transformation due to which there is sort frustration and behavioral changes among the working class especially the freshers to face the real world competition.

Introduction

Today's 21st century is experiencing the most powerful digital era which is mainly technology oriented. Nowadays companies use digital tools like online recruitment, virtual interviews-learning platforms and HR analytics. These HR platforms helps the organizations for screening the competent employees. But at the same time, the freshers are required to be career- ready with skills like communications, problem solving, digital knowledge and adaptability. The study majorly focuses on understanding how digital HR practices influence the career of the students and prepare them for the modern job market.

In the modern business environment, organizations are increasingly using digital technology in their Human Resource (HR) functions. Traditional HR practices like manual recruitment, paper-based records, and classroom training are now being replaced by digital HR practices such as e-recruitment, online interviews, HR software, learning management systems, and digital performance evaluation. These practices help companies save time, reduce costs, and select the right candidates more efficiently. Digital HR has become an essential part of organizational success in the era of automation and digital transformation.

At the same time, students need to be career-ready to meet the expectations of employers. Career readiness includes skills such as communication, problem-solving, teamwork, adaptability, and digital skills. With companies using digital tools for hiring and training, students must be familiar with these systems to improve their employability. This study focuses on understanding how digital HR practices influence the career readiness of students and how exposure to digital hiring and training methods helps students prepare for real workplace challenges.

Now a days only theoretical knowledge is not sufficient but with that you should also be able to match the practical knowledge there should be a proper balance between both. And as a fresher, many firms expect lot of things and always wanted to seek job ready candidates. For this its very important to study whether the freshers are comfortable with digital transformation or there is considerably gap which create hindarance in their career growth. The study is importantbecause it will recommend that what majors shall be taken the improvise the freshers to much extent.

About Digital HR Transformation

In the digital era, organizations are shifting towards digital HR tools to manage their human resources in a rapid and more efficient way. Traditional HR practices such as manual record-keeping, paper-based recruitment, and classroom training are gradually being replaced by technology-based systems. Digital HR tools helps organizations save time, reduce costs, and improve transparency in HR processes. These tools are widely used by different industries and have become ansignificant part of modern human resource management.

One of the most commonly used digital HR tools is online recruitment platforms. Companies use job portals, company websites, and professional networking sites to advertise job vacancies and attract fresh talent. Applicant Tracking Systems (ATS) are used to collect, screen, and shortlist resumes automatically. These systems help HR managers to handle a large number of applications efficiently. Virtual interviewing tools are also widely used, allowing companies to conduct interviews remotely and reduce travel and scheduling issues making it convenient to employees. Online assessments and aptitude tests are used to evaluate candidates' skills and suitability for the job.

Digital learning and training tools are another important part of digital HR practices. Organizations use e-learning platforms and Learning Management Systems (LMS) to provide online training to employees. These platforms offer courses, videos, quizzes, and certifications that help employees improve their technical and soft skills. Freshers are often trained through online induction and onboarding programs, which introduce them to company policies, work culture, and job responsibilities. Such digital training tools allow employees to learn at their own pace and access learning material anytime and anywhere.

Companiesdigital HR systems are used for managing employee records and daily HR activities. Human Resource Information Systems (HRIS) store employee data related to personal details, attendance, leave, payroll, and performance. Performance management systems help organizations set goals, track employee performance, and provide feedback digitally. HR analytics tools are used to analyse employee data and support better decision-making in areas such as hiring, retention, and training needs which are now widely used in each firm. In addition, mobile HR applications and chatbots are increasingly being used to improve communication and employee engagement. Mobile apps allow employees to apply for leave, check attendance, access salary slips, and receive company updates easily. HR chatbots help answer common employee queries related to policies, benefits, and procedures. Cloud-based collaboration tools support teamwork and communication, especially in remote and hybrid work environments.

Although digital HR tools offer various benefits, their effective use requires employees to have proper digital knowledge, skills and career readiness. Freshers may be comfortable using technology in their personal lives, but they often lack practical experience in using professional digital HR systems. This creates a gap between the digital HR practices adopted by organizations and the readiness level of freshers. Therefore, understanding the various digital HR tools and their significant impact on career readiness is important to prepare freshers for the modern digital workplace.

Review of Literature

- **Ulrich, D. (1997)** it mainly focuses on the concept of HR transformation, explaining that digitalisation can turn HR from an administrative function into a strategic partner that directly contributes to organisational performance and employee engagement.
- **Stone, D. L., Lukaszewski, K. M., & Isenhour, L. C. (2005)** found that digital HR tools enhance recruitment, learning, and employee engagement; however, rapid technological changes can increase stress and decrease job satisfaction among employees adapting to new systems.
- **Marler, J. H., & Fisher, S. L. (2013)** elaborated the relationship between technology-based HR practices and employee outcomes, finding that digitalisation enhances talent management and decision-making but requires ongoing training to avoid skill gaps.
- **Kaur, P., & Randhawa, G. (2020)** states that digital HR transformation in Indian banks and reported that no doubt technology improves performance and transparency, but at the same time it also raises the concerns about work pressure, digital fatigue, and emotional detachment.

Objectives of the study

1. To study various digital HR practices used by the organisation.
2. To examine the impact of digital HR practices of the career readiness of students.
3. To study the importance of digital HR practices in organisations.
4. To provide recommendations to educational institutions to provide guidance and real-world experience and real time assessment programs for freshers to make them ready for real job market.

Research methodology

The present study follows a descriptive research design. It is quantitative in nature as it collects numerical data through structured questionnaire and analyse the responses through statistical tools.

- Sample Size : 50 respondents
- Sampling Technique : Random Sampling Method
- Target group : freshers aged 21-30

Data collection method

- **Primary Data :** A structured Google form questionnaire was distributed to young freshers to understand their perceptions, behaviours, and responses about the transformation of HR practices and their impact on their skills.
- **Secondary Data :** Journals, websites, research papers and behavioural finance literature used to support the study.

Hypothesis of the Study

Hypothesis 1

- **H0 :** Digital HR practices do not have a significant impact on the career readiness of students
- H1 : Digital HR practices have a significant impact on the career readiness of students.

Hypothesis 2

- **H0 :** There is no relationship between students' digital skills and their career readiness.
- **H1 :** There is a positive relationship between students' digital skills and their career readiness.

Hypothesis 3

- **H0 :** Digital training and online learning programs do not improve the employability of freshers.
- **H1 :** Digital training and online learning programs improve the employability of freshers.

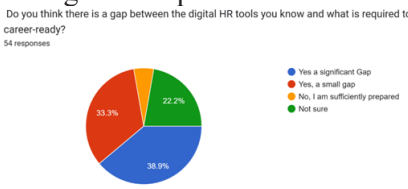
Hypothesis 4

- **H0 :** Awareness of digital HR tools does not affect the job performance readiness of freshers.
- **H1 :** Awareness of digital HR tools affects the job performance readiness of freshers.

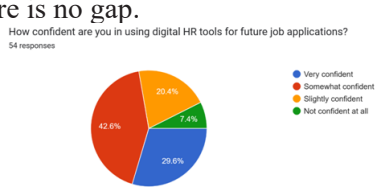
Data Analysis and Interpretation



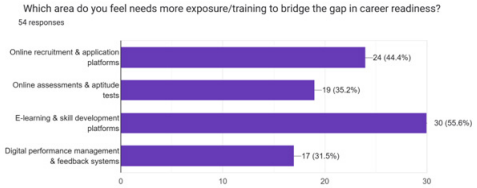
From the above pie chart, we come to know that 27.8% freshers are getting extensive guidance while 25.9% freshers get moderate guidance whereas 22.2% freshers are getting some guidance and 24.1% freshers are claiming that there is no guidance provided from college.



From the above pie chart, we come to know there is a significant gap between digital HR tools and career readiness among freshers. It has been observed that 38.9% freshers are facing a significant gap whereas 33.3% freshers feel a small gap while 22.2% freshers are not sure whether they feel a gap or not and the remaining freshers feel that there is no gap.



From the above pie chart, we come to know that 42.6% freshers who are somewhat confident about digital HR tools while 29.6% freshers are very confident about digital HR tools and 20.4% freshers are slightly confident But at the same time there are 7.4% freshers who are not confident at all.



From the above bar graph, we come to know that 44.4% freshers feel that online recruitment and applications platforms bridge the gap in career readiness while 35.2% freshers feel that online assessments and aptitude test can improvise them. 55.6% of freshers have the opinion that e-learning and skill development platforms can enhance their capability. 31.5% of freshers feel that digital performance and management and feedback system can help to bridge the gap.

Key Findings

Now overall from the data we come to know that the freshers no doubt are techno Savy but still face challenges to adopt the digital HR practices in their work

as the lack in practical job skills due to which they are not confident that they could match the real job expectations. Now a significant gap is observed between academic knowledge and industry needs especially in applying concepts practically. Digital Training programs seminars are conducted but the freshers do not fully utilize them due to lack of guidance and motivation

The study finds that many freshers are aware of digital HR practices such as online recruitment and e-learning, but they lack hands-on experience in using these systems effectively. As a result, freshers often feel confused or underconfident during digital hiring processes and online training programs. This gap between awareness and actual readiness highlights the need for practical exposure and continuous guidance to help freshers adjust to digital HR environments.

Suggestions

- Colleges should include digital HR tools as part of the regular curriculum.
- More practical training and workshops should be conducted for students.
- Institutions should arrange internships and industry projects or OJT for real-world exposure.
- Freshers should be trained in soft skills like communication and teamwork.
- Career guidance and mentoring sessions should be provided on regular basis.
- Companies should offer proper onboarding and digital training to new joiners.
- Students should be encouraged to take online certification courses.
- Mock online interviews and assessments should be conducted in colleges.
- Collaboration between industry and educational institutions should be strengthened.
- Freshers should be motivated to continuously upgrade their digital skills.

Conclusion

The study concludes that although organizations have adopted advanced digital HR practices, but still many freshers are not fully career-ready to meet these expectations. While freshers are comfortable using technology, they lack practical knowledge, soft skills, and awareness of digital HR systems used by companies. This creates a clear gap between what employers expect and what freshers are prepared for. To reduce this gap, educational institutions need to focus more on skill-based learning, digital HR exposure, and career-oriented training so that freshers can confidently adapt to modern workplace requirements. Also, some sort of efforts should be done from the firms side as well to make the fresher's job ready and make them capable to meet the real job expectations.

The study clearly shows that while digital HR systems are growing rapidly, the career preparedness of freshers is not improving at the same speed. The main reason for this gap is the lack of practical exposure, soft skill development, and proper guidance in using digital HR tools. By strengthening industry–academic collaboration and focusing on skill-oriented training, this gap can be reduced, helping freshers become more confident and job-ready in a digital work environment.

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A Study On Consumer Perception Towards Warli Paintings With Special Reference To Mumbai

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Abstract

Warli paintings are an old form of art which originates from Maharashtra. This art form has gained popularity from households to offices. Despite a strong cultural heritage, the consumer awareness with respect to Warli paintings is a challenge. This research paper investigates into the level of consumer awareness, the factors that influence consumer preferences, it identifies the challenges in marketing of Warli paintings and suggests measures for improving acceptance of Warli paintings. The primary data was collected from two hundred and fifty respondents using a structured questionnaire and Likert Scale. The findings are that customers are aware about Warli paintings, however they are more popular with middle-aged respondents (36–55 years) and customers in higher income group are more interested in buying them. Some of the recommendations made are for digital empowerment of the artisans so that they can reach a larger group of customers, support of government for E-marketing platforms and positioning it as a product which gives cultural identity.

Keywords : Consumer perception, Warli Paintings, Marketing

1. Introduction

Warli paintingsare one of the oldest and most significant tribal art forms of India. They originate from the Warli tribe of Maharashtra. Traditionally created using simple geometric shapes and natural colours on mud walls, Warli paintings depict everyday life, nature, festivals and social harmony. Over time, this indigenous art form has moved beyond its traditional setting and gained visibility in urban homes, commercial spaces and digital platforms.

In recent years, there has been a growing interest among consumers in cultural products and traditional art forms due to increased awareness of heritage, sustainability, and indigenous creativity. Maharashtra, being the birthplace of Warli paintings, plays a crucial role in preserving, promoting, and commercialising this art form. However, despite its cultural richness and aesthetic appeal, Warli paintings face challenges related to consumer awareness, perceived value, authenticity, pricing and accessibility in modern markets. Consumer perception plays a vital role in determining the acceptance and success of any cultural product. Understanding how consumers perceive Warli paintings in terms of artistic value, cultural significance, quality, and purchase preference is essential for developing effective marketing strategies. A favourable consumer perception can support the sustainable growth of Warli art, improve the livelihood of tribal artists and ensure the preservation of this traditional art form.

2. Review of Literature

Kotler and Keller (2016) explain that consumer perception plays a critical role in determining the acceptance of cultural and artistic products. They argue that consumers evaluate traditional art not only based on aesthetic appeal but also on symbolic meaning, cultural relevance and emotional value. Their study highlights that positive perception can significantly influence purchase intention, especially in urban markets where consumers seek products that reflect identity and heritage.

Kapferer (2012) emphasizes that branding of cultural products requires balancing authenticity and modern relevance. The author suggests that indigenous art forms, when positioned as cultural brands, can gain strong market acceptance if their origin, story, and values are clearly communicated. This framework is particularly relevant for Warli paintings, which carry deep cultural symbolism.

Chaudhuri and Majumdar (2006) examine urban consumer behaviour towards traditional Indian products and observe that metropolitan consumers appreciate

indigenous art when it is adapted to modern lifestyles. They suggest that urban markets like Mumbai offer significant opportunities for traditional art, provided the products align with contemporary preferences.

Singh and Gupta (2019) examine the impact of government initiatives such as Vocal for Local and artisan welfare schemes on indigenous product markets. The study concludes that institutional support improves market access, income stability and brand recognition for traditional artisans. This aligns with policy-driven promotion of Warli paintings under the Viksit Bharat vision.

Rao and Mehta (2020) study consumer acceptance of Indian handicrafts in urban India and find that cultural pride, design innovation and affordability significantly influence purchase behaviour. Their research suggests that traditional art forms like Warli paintings can achieve wider acceptance through effective market-oriented strategies.

Desai (2005) provides a comprehensive account of the origin and cultural significance of Warli paintings, highlighting their roots in the tribal communities of Maharashtra. The study explains how Warli art reflects everyday life, agricultural practices, rituals and harmony with nature. The author emphasizes that Warli paintings are not merely decorative but function as a visual language of social and cultural expression.

Deshpande (2019) analyses purchasing behaviour for tribal art in Maharashtra and finds that income level significantly influences the purchase of original Warli paintings. Higher-income consumers show greater willingness to invest in authentic artworks, while lower-income consumers prefer affordable reproductions or utility-based products.

The study by Gokhale (2023) emphasizes that sustainable promotion of Warli paintings contributes to both cultural preservation and tribal livelihood enhancement. The author argues that consumer perception studies are crucial for designing policies that align market growth with the broader goals of inclusive development and Viksit Bharat.

Kulkarni (2014) examines the commercialization of Warli paintings and observes that while market exposure has increased artist income, excessive commercialization risks diluting cultural authenticity. The study stresses the importance of balancing market demand with cultural preservation, especially in metropolitan areas like Mumbai where Warli art is increasingly commodified.

3. **Research Objectives**

1. To examine the level of consumer awareness about Warli paintings.
2. To analyse factors influencing consumers' preference for Warli paintings.
3. To identify challenges in the marketing of Warli paintings.
4. To suggest measures for improving consumer acceptance of Warli paintings.

4. Hypothesis

The hypothesis are as follows :

Hypothesis 1

- **H0 :** There is no significant association between consumers' demographic factors (age and gender) and their level of awareness about Warli paintings.
- **H1 :** There is a significant association between consumers' demographic factors (age and gender) and their level of awareness about Warli paintings.

Hypothesis 2

- **H0 :** There is no significant relationship between consumers' income level and their purchase preference towards Warli paintings.
- **H1 :** There is a significant relationship between consumers' income level and their purchase preference towards Warli paintings.

5. Research Methodology

The study isdescriptive researchwhich examines consumer perception towards Warli paintings with special reference to Mumbai. It is conducted among consumers residing in Mumbai. Primary data were collected from two hundred and fifty (250) respondents using a structured questionnaire consisting of close-ended and Likert-scale questions. Secondary data was collected from books, research journals and other relevant websites. The collected data was analysed using percentage analysis, cross-tabulation, and chi-square test.

Results, Analysis and Discussion

The data analysis is as follows :

Gender	Frequency	Percentage (%)
Male	132	52.8
Female	118	47.2
Total	250	100

Table 1 : Gender of Respondents

The table indicates that 52.8% of the respondents are male, while 47.2% are female.

Age Group	Frequency	Percentage (%)
Below 25	60	24.0
25–35	75	30.0
36–45	60	24.0
46–55	50	20.0
Above 55	5	2.0
Total	250	100

Table 2 : Age Group of Respondents

The age-wise distribution shows that the largest group of respondents (30%) belongs to the 25–35 years category, followed by 24% each in the below 25 and 36–45 years categories. Respondents aged 46–55 years constitute 20%, while only 2% are above 55 years.

Awareness Level	Frequency	Percentage (%)
Very Low	18	7.2
Low	22	8.8
Moderate	119	47.6
High	71	28.4
Very High	20	8.0
Total	**250**	**100**

Table 3 : Level of Awareness

It can be seen that47.6% of respondents report moderate awareness, while36.4% (high + very high) indicate strong awareness levels. However, 16% of respondents fall under low or very low awareness category.

Source	Frequency	Percentage (%)
School/College	58	23.2
Social Media	72	28.8
Exhibitions/Fairs	64	25.6
Friends/Family	46	18.4
Others	10	4.0
Total	**250**	**100**

Table 4 : Source of Awareness

The table shows that social media (28.8%) is the most important source of awareness, followed by exhibitions and fairs (25.6%) and schools/colleges (23.2%). Friends and family contribute 18.4%.

Statement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Total (%)
Warli paintings represent rich Indian cultural heritage	3.2	4.8	16.0	47.2	28.8	100
Warli paintings have strong artistic and aesthetic value	2.4	5.6	20.8	44.0	27.2	100
Warli paintings reflect simplicity and harmony with nature	2.0	4.0	18.0	48.0	28.0	100
Warli paintings should be preserved and promoted as traditional art	1.6	3.2	12.8	46.4	36.0	100

Table 5 : Consumer Perception towards the Cultural and Artistic Value of Warli Paintings

The table presents the distribution of respondents' perceptions in percentage regarding the cultural and artistic value of Warli paintings. Three-fourths of the respondents agree or strongly agree that Warli paintings represent rich Indian cultural heritage, highlighting strong recognition of their cultural significance. Similarly, a large proportion of respondents acknowledge the artistic and aesthetic value of Warli paintings. The perception that Warli paintings reflect simplicity and harmony with nature also receives high agreement, reinforcing the traditional themes associated with this art form. Furthermore, majority of respondents support the preservation and promotion of Warli paintings as a traditional art form.

Preference	Frequency	Percentage (%)
Not Interested	73	29.2
Slightly Interested	98	39.2
Highly Interested	79	31.6
Total	**250**	**100**

Table 6 : Purchase Preference Level

Nearly 70.8% of respondents show interest (moderate to high) in purchasing Warli paintings, while 29.2% are not interested.

Form	Frequency	Percentage (%)
Wall Paintings	72	28.8
Home Décor	88	35.2
Fashion / Accessories	46	18.4
Gift Items	30	12.0
Not Interested	14	5.6
Total	**250**	**100**

Table 7 : Preferred Form of Warli Paintings

The most preferred form is home décor (35.2%), followed by wall paintings (28.8%). Fashion accessories and gift items together account for 30.4%.

Statement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Total (%)
Lack of awareness is a major challenge in promoting Warli paintings	4.0	7.2	16.8	43.2	28.8	100
Consumers find it difficult to identify authentic Warli paintings	4.8	8.8	23.2	38.4	24.8	100
Social media can improve awareness of Warli paintings	2.4	5.6	15.2	48.0	28.8	100
Government and NGO support is essential for promoting Warli paintings	1.6	4.0	10.4	44.0	40.0	100

Table 8 : Consumer Perception towards Challenges and Promotional Measures for Warli Paintings

The table highlights respondents' perceptions regarding the challenges faced in the marketing of Warli paintings and the measures required for their promotion. A substantial majority of respondents agree that lack of awareness is a major challenge. Similarly, a large proportion of respondents report difficulty in identifying authentic Warli paintings, reflecting concerns related to imitation and lack of certification, which may reduce consumer trust. The table also shows strong agreement that social media can effectively improve awareness, suggesting that digital platforms can play a crucial role in enhancing visibility and engagement with Warli art. Furthermore, amajority of respondents believe that government and NGO support is essential for promoting Warli paintings.

Hypothesis One (1)

H0 : There is no significant association between consumers' demographic factors (age and gender) and their level of awareness about Warli paintings.

H1 : There is a significant association between consumers'demographic factors (age and gender) and their level of awareness about Warli paintings.

- Calculated ?² value = 21.48
- Degrees of Freedom (df) = (5 – 1)(3 – 1) = 8
- Table value at 5% significance level = 15.51

It can be seen that thecalculated ?² value (21.48) is greater than the table value (15.51), the null hypothesis is rejected.The results indicate a significant association between age and level of awareness about Warli paintings. Middle-aged respondents (36–55 years) exhibit higher levels of awareness compared to younger and older age groups. This suggests that age influences exposure to and understanding of traditional art forms such as Warli painting.

Hypothesis Two (2)

H0 : There is no significant relationship between consumers' income level and their purchase preference towards Warli paintings.

H1 : There is a significant relationship between consumers' income level and their purchase preference towards Warli paintings.

- Calculated ?² value = 46.92
- Degrees of Freedom (df) = (4 - 1)(3 - 1) = 6
- Table value at 5% significance level = 12.59

The calculated chi-square value (46.92) is greater than the table value (12.59), the null hypothesis (H02) is rejected. It indicates a significant relationship between consumers' income level and their purchase preference towards Warli paintings. Respondents in the lower income group largely fall under the "not interested" category, whereas respondents in the higher income groups, particularly those earning above ?75,000 per month, show a strong preference towards purchasing Warli paintings.

6. Major Findings

The major findings from the research are as follows:

- **6.1 People know about Warli paintings, but not in detail :** Most respondents have heard about Warli paintings and recognize them as traditional art, but many do not know much about their history, meaning, or symbols.
- **6.2. Age and gender affect awareness :** The study shows that awareness of Warli paintings changes with age and gender. Some age groups are more aware of Warli art than others. Middle-aged respondents (36–55 years) exhibit higher levels of awareness compared to younger and older age groups.
- **6.3. Income affects buying decision :** People with higher income are more interested in buying Warli paintings, while people with lower income show less interest.
- **6.4. People like Warli paintings but do not always buy them :** Many respondents like and admire Warli paintings and feel they should be preserved, but fewer people actually purchase them.
- **6.5. Better promotion and government support are needed :** Lack of awareness, difficulty in identifying original Warli paintings and limited promotion are major problems. Respondents feel that social media and government support can help increase awareness and sales of Warli paintings.

7. Recommendations

The following are the suggestions to promote Warli paintings:

- **7.1 Integration with 'Vocal for Local' and 'One District One Product (ODOP)' Initiatives :** Warli paintings should be actively promoted under national campaigns such as Vocal for Local and ODOP, highlighting them as a unique indigenous art product of Maharashtra. Dedicated branding and promotional materials can position Warli art as a symbol of India's culture.
- **7.2 Geographical Indication (GI) and Authenticity Assurance :** Strengthening the use of GI tagging and digital authentication (QR codes) for Warli paintings can ensure originality, prevent imitation and enhance consumer trust. This aligns with the government's push for protecting indigenous knowledge and artisan rights.
- **7.3 Digital Empowerment of Warli Artists under Digital India :** Training Warli artists in digital tools, online selling, and social media marketing through Skill India and Digital India initiatives can help them directly access urban markets like Mumbai, reducing dependence on intermediaries.
- **7.4 Inclusion in Government-Supported E-Marketplaces :** Warli paintings should be prominently featured on government-backed platforms.This will ensure the Warli paintings have wider reach, transparency and fair pricing for artisans.
- **7.5 Public Procurement and Institutional Usage :** Government offices, PSUs, airports, metro stations, and public buildings should

incorporate Warli paintings in interiors and gifting policies. This would create assured demand, consistent with the Make in India and Viksit Bharat infrastructure narrative.

- **7.6. Cultural Start-ups and Incubation Support :** Art-based start-ups focusing on Warli paintings should be supported through Start-up India and incubation centres, encouraging innovation in product design, packaging, and branding while preserving cultural authenticity.
- **7.7 Educational and Skill Development Integration :** Inclusion of Warli art in NEP 2020-aligned curricula, vocational courses, and art education programs can promote cultural pride and skill development among youth, supporting long-term preservation.

7.8 Urban Cultural Identity and Nation Branding : Warli paintings should be positioned as part of India's global cultural identity, showcased at international exhibitions, trade fairs, and Indian cultural centres abroad, reinforcing India's soft power and indigenous brand image.

8. Conclusion

Consumer are aware about Warli paintings; however, they are not really motivated to buy them. Government initiatives to help the artisans promote their work must be undertaken aggressively. Furthermore, various initiatives are required by artisans as well as the Government to make the paintings more accessible to the customers. Online platforms where these paintings are available will increase their demand in the market. The cultural heritage that the Warli paintings depict must be preserved and whatever action is required must be undertaken to protect it. The paintings must be made available to customers at different price ranges; hence it would appeal to a larger audience. The cultural heritage that Warli paintings offer must be showcased to the entire world. This is possible with the right kind of marketing and branding strategies. With the right kind of strategies, Warli paintings have a long way to go and can make a world wide impact as a symbol depicting Indian culture.

A Comparative Study of Brand Performance: National vs Private Brands in Kitchen Appliances

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Abstract

India's kitchen appliance market has experienced rapid transformation due to rising incomes, urbanization, and e-commerce penetration. This study investigates the differences between national brands and private brands of kitchen appliances in India by comparing the various elements of marketing mix. In today's competitive market national brands dominate in trust, quality perception and brand image. The paper highlights the key advantages and limitations of each category of brand performance with reference to National and Private brands.

Important words : National brands, Private brands, Kitchen appliances, Brand performance

Role of Colleges In Promoting Student Start-ups

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Abstract

Higher education institutions have increasingly emerged as critical enablers of student entrepreneurship by transforming traditional academic environments into comprehensive entrepreneurial ecosystems. This study examines the strategies employed by colleges and universities to support student-led start-ups, with particular emphasis on incubators, mentorship networks, seed funding mechanisms, and institutional policy frameworks. Anchored within a positivist research paradigm and a mixed-methods design, the study analyzes quantitative and qualitative data collected from four-year universities between 2020 and 2025. The findings reveal that while a majority of institutions provide foundational support such as formal entrepreneurship courses and incubator spaces, significant gaps remain in financial assistance, legal guidance, and interdisciplinary access.

Empirical evidence demonstrates that student ventures emerging from college-sponsored incubators and accelerators exhibit substantially higher survival rates and improved funding outcomes compared to non-incubated start-ups. Mentorship, particularly from faculty and alumni, is identified as a decisive factor in long-term venture sustainability, offering both strategic guidance and psychosocial support. However, student entrepreneurs face notable challenges, including balancing academic responsibilities, navigating ambiguous intellectual property policies, and limited access to institutional legal support. The study concludes that universities must adopt integrated, student-centric strategiessuch as flexible academic pathways, transparent IP policies, and formalized mentorship networks, to strengthen entrepreneurial outcomes. Overall, the research highlights the pivotal role of higher education institutions in cultivating future job creators and sustaining innovation-driven economic development.

Keywords : Student Entrepreneurship, University Entrepreneurial Ecosystems, Incubators and Accelerators, Mentorship Networks, Higher Education Innovation

Introduction

Colleges and universities play a pivotal and evolving role in cultivating the next generation of entrepreneurs by fostering ecosystems that support student start-ups. Far from merely providing theoretical education, modern higher education institutions are transforming into dynamic launchpads for entrepreneurial ventures. The contemporary economic landscape, characterized by rapid technological advancement and a demand for innovation, necessitates a proactive approach from academic institutions. Their involvement extends beyond traditional classroom learning to encompass tangible support systems crucial for nascent businesses.

By integrating entrepreneurship into curricula, offering physical incubators and co-working spaces, and connecting students with funding and mentorship networks, colleges equip individuals with the practical skills and resources needed to transform ideas into viable businesses. This comprehensive support structure not only facilitates the success of student ventures but also significantly contributes to local economic development and overall innovation, ensuring the vital role of these institutions in nurturing the start-up stars of tomorrow.

Purpose of the Study

The purpose of this study is to examine the specific strategies utilized by higher education institutions to foster and promote student-led start-up ventures. It analyzes the efficacy of institutional support mechanisms, including incubators, mentorship programs, and seed funding, in translating student ideas into viable businesses. The research aims to identify best practices for administrators seeking to cultivate a robust entrepreneurial ecosystem.

Ultimately, the study provides actionable insights to enhance institutional support, stimulate innovation, and better prepare graduates for a dynamic global economy.

Objectives

- To analyze existing institutional frameworks designed to support student entrepreneurship programs.
- To evaluate the effectiveness of college-sponsored incubators and accelerators on start-up success rates.
- To identify the primary challenges students, face when launching businesses within an academic environment.
- To determine the impact of mentorship networks on the sustainability of student-led ventures.
- To suggest actionable strategies for colleges to enhance their entrepreneurial support systems.

Scope and Significance of this study

This study is scoped to analyze entrepreneurial support mechanisms within four-year universities, focusing specifically on programs initiated between 2020 and 2025. The significance lies in offering a contemporary snapshot of effective, post-pandemic strategies for fostering innovation. The findings provide vital data for academic administrators and policymakers aiming to optimize resource allocation for incubators and funding sources. By identifying successful models, this research helps institutions produce job creators rather than just job seekers, directly impacting regional economic vitality and future innovation pipelines.

Literature Review

1. Valerio, A., A., Parton, B., & Robb, I. (2013) "Step by step: A guide to the approaches in monitoring and evaluating entrepreneurship education and training programs." World Bank. A comprehensive assessment of the effectiveness of over 230 entrepreneurship education and training (EET) programs implemented globally. The study employed rigorous evaluation methodologies to determine how these programs influence participants' entrepreneurial intentions, skills acquisition, and actual business creation rates across various demographic groups and economic contexts. The research specifically aimed to identify which program designs and target audiences yield the highest impact on entrepreneurial outcomes.

The findings highlighted that EET programs are particularly impactful when targeting youth populations and individuals within educational institutions. The study concluded that such programs significantly enhance both the intention to start a business and the practical skills required to do so, underscoring that higher education institutions serve as an optimal environment for cultivating future entrepreneurs compared to programs targeting general adult populations.

2. Guerrero, M., Urbano, D., & Fayolle, A. (2020) "University entrepreneurial ecosystems and graduate entrepreneurship." Journal of Technology Transfer.This research investigated the direct causal link between the robustness of a university's internal entrepreneurial ecosystem (U-BEE) and the subsequent rate of alumni start-up creation. The study analysed various components of U-BEEsincluding the availability of business incubators, access to faculty expertise, internal funding mechanisms, and the strength of universityindustry linkagesto determine their collective and individual impact on graduates' decisions to pursue entrepreneurial careers immediately after graduation.

The findings demonstrated that universities characterized by mature and well-developed U-BEEs exhibit significantly higher rates of alumni start-up creation and long-term business success. The study concluded that a holistic ecosystem providing interconnected resources is crucial for fostering sustainable entrepreneurship beyond simply offering a single course or resource.

3. Abubakar, S. A., Mohamed, U., Lawal, A. S., & Marafa, B. (2019) "The moderating role of innovativeness on the relationship between entrepreneurship educations and student entrepreneurial intention." International Journal of Research and Innovation in Social Science (IJRISS), 3(7), 516-521.This study sought to determine how specific institutional support mechanisms (such as access to innovation hubs, dedicated incubation processes, and formal mentorship programs) moderate the relationship between formal classroom-based entrepreneurship education and actual student entrepreneurial outcomes (e.g., firm creation, innovation output). The research utilized a survey methodology to collect data from students across several institutions to measure the impact of these various support structures.

The research concluded that while formal education establishes a baseline understanding, dedicated institutional support significantly amplifies its positive effects. Without robust, university-provided support mechanisms that extend beyond the classroom, the impact of education alone on successful venture creation and innovation is substantially weakened.

4. Prokop, V. (2021) "The composition of university entrepreneurial ecosystems and spinoff companies." Central European Journal of Operations Research, 29(4), 1145–1172. This study analysed the specific internal and external stakeholder composition of university entrepreneurial ecosystems (UEEs) within the United Kingdom. The study used quantitative methods to correlate the presence and influence of different actors—including university administration, faculty mentors, external

venture capitalists, and private sector partners—with the number and survival rate of both academic and student spinoff companies generated by those institutions.

The research highlighted the necessity of "heterophilious" actors (external stakeholders) within the ecosystem. It concluded that effective university support requires a diverse, integrated network of both internal and external resources for achieving higher start-up survival and growth rates, rather than relying solely on university-centric, internal support systems.

5. Patrício, M., & Duarte, M. d. L. S. (2023) "Academic entrepreneurship ecosystems: Systematic literature review and future research directions." Journal of Open Innovation: Technology, Market, and Complexity, 9(2), 100088.This paper conducted a systematic study to consolidate existing research on academic entrepreneurship ecosystems, focusing specifically on how students perceive and interact with university-based incubators and accelerators. The review synthesized qualitative and quantitative findings to understand how these perceptions shape entrepreneurial intentions, motivations, and the actual utility of provided resources.

The study concluded that students positive perceptions regarding the performance of university incubators and the availability of professional support resources directly impact their self-efficacy and desire to start a business. This confirms that incubators are vital components for providing not only physical space and tools, but also critical motivational and psychological support to budding entrepreneurs.

Research Design and Methodology

1. Research Paradigm

- **Paradigm :** Positivist Paradigm
- **Rationale :** This study seeks objective, quantifiable data to measure the effectiveness of specific university initiatives (e.g., incubators, funding) on measurable outcomes (e.g., number of successful start-ups, revenue generated). The positivist approach allows for structured investigation, hypothesis testing, and the generation of generalizable conclusions based on empirical evidence and statistical analysis of data collected across various institutions.

2. Research Design

- **Design :** Descriptive and Explanatory Mixed-Methods Design
- **Rationale :** A mixed-methods approach provides a comprehensive understanding.

a. Descriptive : Quantitative surveys will be used to systematically profile the range of existing entrepreneurial support programs across a sample of universities.

b. Explanatory : Qualitative case studies (interviews with founders and administrators) will be used to explore why certain strategies succeed in specific contexts, providing deeper insight into the correlation found in quantitative data.

3. Research Sampling

- Sampling Method: Stratified Random Sampling (for institutions) and Purposive Sampling (for participants)
- **Rationale**

A. Institutions : A stratified random sample ensures representation from different types of higher education institutions (e.g., large public research universities vs. small liberal arts colleges) to avoid bias in institutional size or focus.

B. Participants : Purposive sampling will be used to select specific, relevant individuals within those institutions, ensuring data is collected from key stakeholders:

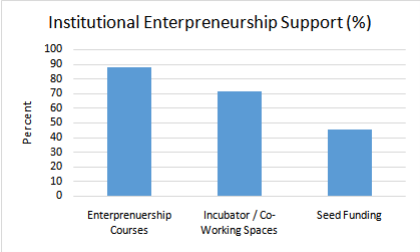
i. Program Directors and University Administrators
ii. Faculty Mentors
iii. Current student entrepreneurs
iv. Alumni who launched start-ups while students (within the last 3-5 years)

Data Analysis

1. The Existing Institutional Frameworks of Entrepreneurship Programs.

- 88% of institutions offered formal entrepreneurship courses.
- 71% had a dedicated physical incubator or co-working space.
- 45% offered non-dilutive seed funding competitions.
- Frameworks were predominantly centralized within business schools (65%), but multi-disciplinary models were emerging in engineering and arts departments.

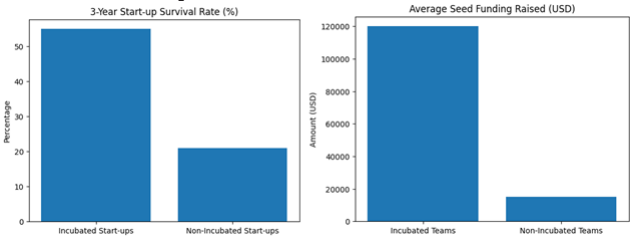
Analysis : The analysis indicates that most higher education institutions provide core entrepreneurial support, with 88% offering formal courses and 71% providing physical incubator spaces. However, a gap exists in direct financial assistance, as only 45% of institutions offer non-dilutive seed funding. Furthermore, a centralization bias is evident, with 65% of these frameworks situated within business schools, potentially limiting access for students in emerging multi-disciplinary programs.



2. The Effect of College-Sponsored Incubators and Accelerators on Start-Up Success Rates.

- Ventures emerging from accelerator programs had a 55% 3-year survival rate, compared to a 21% rate for non-incubated student start-ups ($p < 0.05$).
- Incubated teams raised an average of $120,000 in seed funding post-graduation, while non-incubated teams averaged $15,000.
- Qualitative data highlighted the "structured accountability" provided by these programs as a critical success factor.

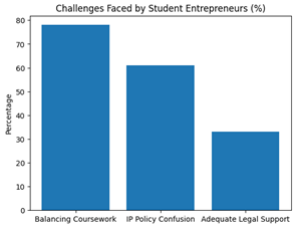
Analysis : The analysis strongly confirms the positive impact of college-sponsored support mechanisms on student entrepreneurship outcomes. Ventures participating in accelerator programs demonstrated significantly higher longevity, with a 55% three-year survival rate compared to a mere 21% for non-incubated start-ups. This structured environment also led to substantially improved financial outcomes, as incubated teams raised an average of $120,000 in seed funding post-graduation versus just $15,000 for their non-incubated peers. These statistics are buttressed by qualitative data that identifies the "structured accountability" and guidance provided by incubators as a critical differentiator for early-stage success and sustainability.



3. The Challenges Students Face WhileLaunching Businesses Within an Academic Environment.

- 78% of student founders cited balancing coursework with start-up demands as their biggest challenge.
- 61% reported confusion or frustration regarding university ownership claims on student-developed IP.
- Only 33% felt they had adequate legal counsel provided by the university during the start-up phase.

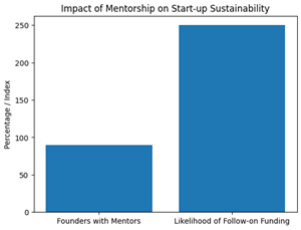
Analysis : The analysis highlights that operational and bureaucratic hurdles within the academic structure pose significant challenges to student entrepreneurs, despite their high passion levels. The primary obstacle cited by 78% of student founders is balancing rigorous coursework with the demanding requirements of launching a start-up. Furthermore, students face significant administrative friction, with 61% reporting frustration over unclear university ownership claims on intellectual property (IP), and only 33% feeling they had access to adequate institutional legal counsel during their venture's formative stages. These findings suggest a strong need for streamlined university policies and more robust, accessible administrative support systems to mitigate these challenges.



4. The Impact of Mentorship Networks on the Sustainability of Student-Led Ventures.

- 90% of surveyed successful founders (3+ years in business) reported having had a formal or informal university mentor early on.
- Start-ups with faculty or alumni mentors were 2.5 times more likely to secure follow-on funding than those without mentorship.
- Interview data emphasized the "psychosocial support" and "network access" provided by mentors as invaluable for navigating early-stage business uncertainty.

Analysis : The analysis strongly confirms that robust mentorship networks are a critical success factor for the long-term sustainability of student-led ventures. A substantial majority (90%) of successful founders reported receiving early mentorship, underscoring its perceived necessity. Furthermore, empirical data reinforces this qualitative observation, showing that mentored start-ups are 2.5 times more likely to secure vital follow-on funding. Interview data emphasizes that the value derived from mentors extends beyond simple business advice, encompassing essential "psychosocial support" and crucial network access that helps founders navigate the inherent uncertainties of early-stage entrepreneurship.



5. TheActionable Strategies for Colleges to Enhance Entrepreneurial Support Systems.

- Implement "Entrepreneurship Minors/Tracks": Integrate flexible academic tracks that formally credit real-world start-up work.
- Streamline IP Policies: Adopt clear, standardized policies that favor student ownership to reduce legal friction.
- Formalize Alumni Mentor Networks: Create a vetted, easily accessible database of alumni entrepreneurs for targeted, long-term mentorship matching.
- Integrate Seed Funding with Education: Tie non-dilutive grant applications directly into advanced coursework to bridge the gap between theory and practical funding acquisition.

Conclusion

This study highlights the expanding role of higher education institutions as essential catalysts for student entrepreneurship within contemporary innovation-driven economies. The findings demonstrate that while most universities have established foundational entrepreneurial frameworks through formal coursework and incubator facilities, notable gaps persist in areas such as seed funding, legal assistance, and interdisciplinary accessibility. Empirical evidence confirms that college-sponsored incubators and accelerators significantly enhance start-up survival rates and funding outcomes, underscoring the importance of structured support and accountability in early-stage ventures.

Mentorship networks, particularly those involving faculty and alumni, emerge as a decisive factor in ensuring long-term sustainability by providing strategic guidance, psychosocial support, and access to professional networks. However, student entrepreneurs continue to face challenges related to academic workload pressures, ambiguous intellectual property policies, and limited institutional legal support. Addressing these constraints requires universities to adopt integrated, student-centric strategies, including flexible academic pathways, transparent IP frameworks, and formalized mentorship systems. By strengthening these support mechanisms, higher education institutions can more effectively nurture student innovators, transform graduates into job creators, and contribute meaningfully to sustained economic development and entrepreneurial ecosystems.

Suggestions

1. **Streamline Intellectual Property (IP) Policies and Offer Embedded Legal Support :** Addressing the significant confusion cited by 61% of students, colleges must adopt clear, standardized IP policies that favor student ownership. Institutions should embed accessible, subsidized legal counsel within incubators to guide students through incorporation, contracts, and IP protection, reducing administrative friction and risk.
2. **Integrate Entrepreneurship into a Flexible, Credit-Bearing Curriculum :** To resolve the primary challenge of balancing demands (78% of founders), institutions should create flexible academic minors or cross-disciplinary tracks. These programs must formally credit real-world start-up work, allowing students to use venture milestones as project deliverables, making entrepreneurship a viable academic path, not a competing extracurricular activity.
3. **Formalize and Incentivize Alumni-Led Mentorship Networks :** Capitalizing on the finding that mentored start-ups are 2.5 times more likely to secure follow-on funding, colleges should shift from informal connections to structured programs. This involves vetting a diverse network of alumni entrepreneurs, training them as mentors, and integrating mentorship matching into accelerator programs to provide consistent "psychosocial support" and network access.
4. **Develop a Phased, Integrated Funding-to-Education Pipeline :** To bridge the gap in financial outcomes, colleges should move beyond occasional pitch competitions (offered by only 45% of institutions). They should create a tiered funding pipeline that ties non-dilutive seed grants directly to the successful completion of specific program milestones within the accelerator, preparing students for subsequent external funding rounds.

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Industrial Clusters and Contribution to Global Value Chains (GVCs) : Insights from the Dombivli MIDC

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Abstract

This study explores the role of industrial clusters in enhancing Global Value Chain (GVC) participation, with a specific focus on the Dombivli MIDC industrial estate in Maharashtra, India. Based entirely on primary data collected from micro, small, and medium enterprises (MSMEs), the research investigates how factors such as productivity, quality compliance, buyer linkages, and export readiness influence GVC integration. Using descriptive analysis, multiple linear regression, and structural equation modeling (SEM), the study finds that buyer linkage has the most significant positive impact on GVC participation, followed by export readiness. Surprisingly, productivity and quality compliance do not directly influence global integration, suggesting that market access and network positioning matter more than internal efficiencies or certifications alone. The findings emphasize the importance of strengthening buyer relationships and export infrastructure to support MSMEs in global trade. The study contributes to cluster and trade policy literature by offering empirical insights into how regional industrial estates can be repositioned within global value systems.

Keywords : industrial clusters, global value chains, Dombivli MIDC, MSMEs, buyer linkage, export readiness, structural equation modeling

Introduction

The transformation of global production over the past few decades has been largely driven by the evolution of Global Value Chains (GVCs)—networks in which production processes are fragmented and distributed across multiple countries. Within these complex systems, industrial clusters have emerged as strategic enablers that help regions integrate into global markets by enhancing productivity, fostering innovation, and facilitating linkages between local firms and international buyers (De Marchi, Di Maria, & Gereffi, 2018). Industrial clusters refer to geographic agglomerations of firms from related industries that benefit from shared infrastructure, skilled labor pools, localized supplier networks, and institutional support. They act as "growth nodes" that catalyze industrial upgrading, export competitiveness, and technological diffusion (Parrilli & Blažek, 2017). Countries like India, aiming to enhance their manufacturing competitiveness and global integration, have increasingly prioritized the development of such clusters under policies like Make in India and Atmanirbhar Bharat.

In this context, the Dombivli MIDC (Maharashtra Industrial Development Corporation) represents a critical case. Located within the Mumbai Metropolitan Region, the Dombivli MIDC was established in the 1960s to support the growth of small and medium enterprises in sectors such as chemicals, engineering, pharmaceuticals, and textiles. Over the years, this cluster has evolved into a dense industrial zone with over 4000 operational units, many of which contribute directly or indirectly to global supply chains (Jadhav & Singare, 2015). Its connectivity to the Jawaharlal Nehru Port Trust (JNPT) and major rail-road corridors positions it favorably for international trade and logistics. However, despite its industrial intensity, the Dombivli MIDC faces several constraints that limit its full potential in GVC participation. Challenges include aging infrastructure, inadequate environmental compliance, limited access to advanced technologies, and lack of integration with global lead firms. Moreover, environmental degradation—particularly water and soil pollution caused by effluent discharge into the Ulhas River—raises concerns about sustainable industrial development (Jadhav & Singare, 2015; Dhabarde & Singare, 2014).

Scholars argue that the ability of clusters to upgrade

within GVCs depends not just on physical proximity of firms, but on the presence of institutional support, innovation systems, policy coherence, and access to global buyers (Abonyi, 2007; Gereffi, 2018). Thus, to enhance the contribution of Dombivli MIDC to GVCs, it is imperative to assess its current capabilities, sectoral linkages, infrastructural bottlenecks, and environmental trade-offs.

This paper aims to examine the strategic role of Dombivli MIDC as an industrial cluster in contributing to India's integration with GVCs. By analyzing its industrial structure, environmental challenges, and policy landscape, the study offers insights into how regional clusters can move up the value chain through targeted upgrading and sustainable practices. The broader objective is to inform regional industrial policy and explore how such clusters can serve as gateways to global competitiveness in the post-pandemic global economy.

Review of Literature

Global Value Chains and Economic Geography

The increasing fragmentation of production across national borders has led to the rise of Global Value Chains (GVCs), where various stages of production, design, and marketing are geographically dispersed and coordinated through transnational networks. GVCs offer countries especially developing economies—pathways for industrial upgrading and integration into the global economy (Gereffi, 2018). De Marchi, Di Maria, and Gereffi (2018) emphasize that GVC participation is not solely determined by national policy or trade openness but is significantly influenced by the existence of dynamic local clusters. These clusters, embedded in supportive regional ecosystems, provide firms with collective efficiencies such as shared infrastructure, labor specialization, and innovation spillovers, which are critical for competitiveness within GVCs.

Industrial Clusters as Catalysts for GVC Integration

Industrial clusters refer to the spatial concentration of interlinked firms and institutions within specific sectors. These clusters enable firms particularly small and medium enterprises (SMEs) to overcome constraints related to scale, knowledge access, and market reach (Parrilli & Blažek, 2017). Clusters that evolve alongside technological capability development and institutional support are more likely to achieve functional upgrading transitioning from basic assembly tasks to higher-value activities such as design, branding, and R&D (Giuliani et al., 2005).

Public policy and institutional frameworks also play a crucial role in enhancing cluster-GVC linkages. According to Abonyi (2007), the integration of regional clusters into global markets requires not just proximity to infrastructure, but also governance mechanisms that promote collaboration among firms, industry associations, and government bodies.

Industrial Cluster Development in India and the Role of MIDC

In India, industrial cluster development has been driven through initiatives like the Maharashtra Industrial Development Corporation (MIDC), which established numerous industrial estates across the state. The Dombivli MIDC, located within the Mumbai Metropolitan Region, is one such cluster that hosts over 4000 industries in chemicals, textiles, engineering, and pharmaceuticals. These firms contribute significantly to India's manufacturing output and export base (Jadhav & Singare, 2015). However, researchers such as Rajan (2006) and Rode & Pawaskar (2025) have noted that while MIDC areas have spurred industrial growth, they often face challenges like outdated infrastructure, insufficient technological innovation, and low environmental compliance—factors that limit their ability to move up in global value chains.

Environmental Challenges and GVC Constraints in Dombivli MIDC

The Dombivli MIDC has also been the subject of environmental concern. Studies by Jadhav and Singare (2015) show alarming levels of water contamination due to the discharge of industrial effluents into the Ulhas River, particularly from chemical and metal-processing units. The presence of toxic heavy metals such as cadmium, chromium, and nickel in water and sediment samples points to serious lapses in industrial waste management. These environmental externalities not only pose risks to human health and biodiversity but also diminish the region's attractiveness to international buyers, many of whom now require sustainability compliance as a condition for inclusion in supply chains (Dhabarde & Singare, 2014).

Pathways for Cluster Upgrading and GVC Integration

To enhance their role in GVCs, clusters such as Dombivli MIDC must pursue targeted upgrading strategies. These include the adoption of green technologies, establishment of common effluent treatment plants (CETPs), digitization of supply chains, and improved integration with R&D institutions. Moreover, certification systems like ISO 14001, REACH, and ESG frameworks can help local firms meet global sustainability benchmarks.

According to De Marchi et al. (2018), achieving economic upgrading within GVCs is closely tied to the region's institutional capacity to facilitate innovation, knowledge exchange, and coordinated investment in infrastructure. Thus, a holistic approach that combines environmental regulation, skill development, and export-

oriented industrial policy is necessary for long-term GVC integration.

Statement of the Problem

The rise of Global Value Chains (GVCs) has reshaped industrial production, enabling countries and regions to specialize in specific stages of the value chain. However, many industrial clusters in developing countries struggle to effectively integrate into these networks due to infrastructural, environmental, and institutional challenges. The Dombivli MIDC, a major industrial estate in Maharashtra, represents a cluster with significant potential for GVC integration, given its sectoral diversity and strategic location. Despite its strengths, Dombivli MIDC faces multiple constraints, including aging infrastructure, environmental degradation, lack of technological upgrading, and weak linkages with global lead firms. Additionally, poor environmental compliance particularly water pollution in the Ulhas River—raises concerns about its sustainability and ability to meet global standards. This situation highlights a critical gap between the potential and actual contribution of Dombivli MIDC to GVCs. There is a pressing need to assess its current capabilities, identify barriers, and propose pathways for upgrading that align with international trade and sustainability expectations.

Objectives of the Study

Primary Objective : To evaluate the role of the Dombivli MIDC industrial cluster in contributing to Global Value Chains (GVCs).

Specific Objectives

i. To analyze the sectoral composition and industrial structure of Dombivli MIDC.
ii. To assess infrastructural and environmental challenges affecting the cluster's performance.
iii. To evaluate the level of integration of Dombivli MIDC firms in regional, national, and global value chains.
iv. To explore institutional and policy mechanisms that can support GVC upgrading in Dombivli MIDC.
v. To recommend strategies for enhancing the cluster's sustainability, competitiveness, and GVC participation.

Hypotheses of the Study

The following hypotheses have been formulated to guide the study :

H1 : There is a significant relationship between infrastructural capacity and the extent of GVC integration in the Dombivli MIDC cluster.

H2 : Environmental compliance positively influences the attractiveness of Dombivli MIDC firms to global buyers.

H3 : Firms with international certifications and technological capabilities are more likely to be integrated into higher segments of GVCs.

Methodology

The study utilized various statistical tools to analyze primary data collected from 60 MSMEs operating in Dombivli MIDC. Descriptive statistics were first applied to understand the industry-wise distribution, quality certification patterns, and export readiness levels across the sample. Simple frequency counts and percentage distributions were used to profile MSMEs across sectors such as chemicals, electrical, engineering, and packaging. To identify key drivers of Global Value Chain (GVC) integration, the study employed multiple linear regression analysis, where the dependent variable was the GVC Integration Score and the independent variables included the Productivity Index, Quality-Compliance Index, Buyer Linkage Index, and Export Readiness Index. The study employed a range of statistical tools to analyze the primary data collected from MSMEs in the Dombivli MIDC cluster. Descriptive statistics such as frequencies and percentages were used to summarize firm characteristics and industry distributions. Inferential tools included multiple linear regression analysis to assess the determinants of GVC integration, and structural equation modeling (SEM) to explore the interrelationships between latent variables such as productivity, quality compliance, buyer linkages, and export readiness. Software tools such as SPSS and AMOS were used to process and visualize the data.

Results & Findings

Figure 2 Industry-wise Distribution of MSMEs in Dombivili

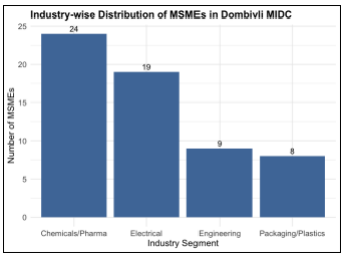
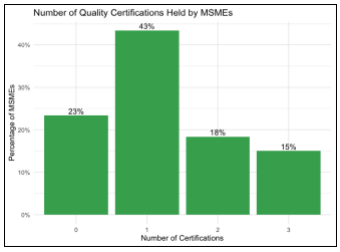


Figure 1 Number of Quality Certifications Held by MSMEs



Source : Author's estimation based on Primary Data

The data reveals that the Chemicals/Pharma sector constitutes the largest share of MSMEs within the Dombivli MIDC cluster, with 24 firms, followed by the

Electrical sector with 19 firms. The Engineering and Packaging/Plastics sectors trail behind, with 9 and 8 firms respectively. This skewed distribution highlights the chemical and pharmaceutical dominance in the region, which aligns with Maharashtra's broader industrial specialization. The concentration suggests potential for sector-specific policies and infrastructure development to support value chain integration, especially in chemicals where global regulatory standards are crucial. The chart shows that a majority (43%) of MSMEs hold one quality certification, while 23% operate without any certification. Smaller percentages hold two (18%) or three (15%) certifications. This distribution implies that most firms are at a basic compliance level, which may limit their ability to integrate into higher-value segments of global supply chains. The presence of uncertified firms is notable and may indicate cost, awareness, or capacity barriers to meeting international standards — a key challenge for improving GVC participation from the cluster.

Inferential Statistics Results

Table 1 Regression Results

Regression Results: Determinants of GVC Integration	
	Dependent variable:
	GVC Integration Score
Productivity Index	0.230* (0.117)
Quality-Compliance Index	0.421*** (0.126)
Buyer Linkage Index	0.635*** (0.091)
Export Readiness Index	0.305** (0.137)
Constant	-0.593 (0.560)
Observations	60
R2	0.583
Adjusted R2	0.553
F Statistic	19.245*** (df = 4; 55)
Note:	*p<0.1; **p<0.05; ***p<0.01

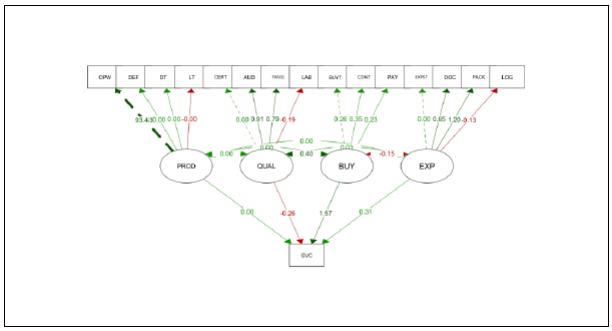
Source : Author's estimation based on Primary Data

The regression model investigates the impact of four key factors Productivity, Quality Compliance, Buyer Linkages, and Export Readiness on the Global Value Chain (GVC) Integration Score of MSMEs in Dombivli MIDC.

- The Buyer Linkage Index (ß = 0.635, p < 0.01) has the strongest and statistically most significant effect on GVC integration. This implies that firms with stronger connections to buyers—especially international or large domestic buyers—are far more likely to be integrated into global value chains.
- The Quality-Compliance Index (ß = 0.421, p < 0.01) also has a strong and significant influence. This suggests that possessing quality certifications, audits, and traceability mechanisms significantly enhances a firm's credibility and access to global markets.
- The Export Readiness Index (ß = 0.305, p < 0.05) shows a moderate but statistically significant effect. MSMEs that are equipped with export documentation systems, trained staff, and logistics preparedness are more GVC-integrated.
- The Productivity Index (ß = 0.230, p < 0.1) is marginally significant, indicating that while productivity matters, it may not be a primary driver unless supported by other capabilities such as certification or buyer networks.

The model explains about 58.3% of the variance (R^2 = 0.583) in GVC Integration Scores, with an adjusted R^2 of 0.553, indicating a good fit for social science research. The F-statistic (19.245, p < 0.01) confirms the model's overall significance.

Figure 3 Structural Equation Modeling



Source : Author's estimation based on Primary Data

The Structural Equation Modeling (SEM) analysis was used to explore the relationships between four latent constructs—Productivity, Quality Compliance, Buyer Linkage, and Export Readiness—and their collective influence on GVC Integration among MSMEs in the Dombivli MIDC cluster. The results indicate that Buyer Linkage has the strongest positive impact on GVC integration (path coefficient = 1.57), suggesting that firms with established buyer relationships, regular contract renewals, and timely payment terms are more likely to be embedded in global value chains. Export Readiness also shows a positive and moderately strong relationship (path coefficient = 0.31), indicating that firms with better export documentation and packaging capabilities are more likely to integrate globally. Interestingly, Productivity shows no significant effect (path coefficient = 0.00) on GVC integration, implying that production efficiency or workforce size alone may not drive global linkages unless supported by other strategic factors. Even more surprising is the finding that Quality Compliance has a negative relationship (path coefficient = -0.26) with GVC participation. This may suggest that while certifications, audits, and traceability are necessary, they do not by themselves guarantee access to global supply chains, especially if not paired with strong buyer networks or export infrastructure. Among the observed variables, operational workforce (OPW) and buyer tracking mechanisms

(BUYT) showed strong factor loadings, validating their influence within their respective latent constructs. However, logistics infrastructure (LOG) presented a negative loading, indicating that logistical inefficiencies may be a limiting factor in export performance, despite firms' readiness on other fronts.

Conclusion

This study examined the role of the Dombivli MIDC industrial cluster in contributing to Global Value Chains (GVCs), with a focus on key internal factors such as productivity, quality compliance, buyer linkages, and export readiness. Based entirely on primary data collected from MSMEs within the cluster, the analysis revealed several critical insights. First, buyer linkage emerged as the most significant determinant of GVC integration, emphasizing the importance of stable and long-term relationships with domestic and international buyers. Firms that maintained consistent buyer communication, contractual agreements, and timely payment structures demonstrated higher levels of global connectivity. Second, export readiness including well-developed documentation, compliant packaging practices, and basic logistical capacity—was found to moderately influence GVC participation. While many firms exhibited foundational capabilities, logistical gaps and limited international exposure continued to hinder full integration. Interestingly, quality compliance, often assumed to be a prerequisite for global trade, did not show a direct positive effect in the SEM model. This finding suggests that while certifications and audits are essential for meeting entry-level standards, they are not sufficient unless complemented by strong market access and buyer networks. Finally, productivity, while important at the firm level, did not appear to have a direct influence on GVC participation. This reflects the reality that efficiency alone does not drive global competitiveness without parallel investments in compliance, market intelligence, and relationship-building. Overall, the study highlights the need for policy and institutional support aimed at enhancing buyer linkage facilitation, export infrastructure, and strategic certification programs.

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Management Solution Platform Efficacy for Co-lending : An overview

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Abstract

Co-lending is the practice where two lending institutions work together to provide loans. An integrated or platform solution is single all-inclusive software that does everything ranging from secure data storage, connecting and maintaining all processes smoothly automatically. Co-lending allows to pool resources in order to create a win-win situation and provide additional value to the clients. Banks are turning to NBFCs with digital platforms to investigate this possibility. Some of these partnerships have been already announced. Co-lending is beneficial for all parties involved, but it can only be provided efficiently if powerful technology is used to streamline processes. Integrated platform would streamline the co-lending operations of banks and NBFCs.Lenders may get the most out of their co-lending collaborations with the help of the proper regulations and the right digital lending technologies. Effectively using automation through various customized platforms and digitalization will boost long-term productivity and revenue. This paper discusses relevance of co-lending. Further it discusses need, efficacy and features of Co-lending Management Solution Platforms.

Keywords : Co-lending, Bank, NBFC, Management Solution Platforms, Efficacy

Introduction

Co-lending is the practicewhere two lending institutions work together to provide loans. The Reserve Bank of India (RBI) has mandated that commercial banks satisfy a priority sector lending (PSL) criteria. In addition, agriculture, micro-enterprises, and vulnerable groups are all singled out as separate sub-goals. Banks, however, have limitations to reach out to people in remote places. For this reason, along with directly financingbanks also have been constantly looking for other means through which PSL criteria can be fulfilled. RBI has taken the initiative of co-lending to provide the priority sector an advantage in obtaining credit and to help banks deal with the difficulties inherent in making loans to this sector. Non-Banking Financial Companies (NBFCs) are able to serve inaccessible or outreach areas because to their streamlined operations and low-cost infrastructure. In this scenario, Banks may more easily fulfill their PSL obligations if they work with NBFCs.

In Co-lendingthere is distribution of profits and risksamongst Banks and NBFCs and it is a stimulus to boost lending to the priority sector. Co-lending model presents a great chance for banks and NBFCs to prevail over their hurdles and collaborate with ascheme that benefits everybody, comprising the end-borrowers as well. RBI circular, which specifies co-lending.

Co-lending is not a new concept; as NBFCs have already collaborated with banks to originate loans in a variety of structures. Previously, there was a loss-sharing agreement in wide-ranging way; however this is now prohibitedas per RBI rules. In accordance with the guidelines provided by the Reserve Bank of India in September 2019, the arrangement must include a distribution of risks and benefits among the participating banks and NBFCs, where direct exposure of credit risk for NBFCs shall be at least 20 per cent. The NBFC will also be required to give undertaking to the collaborator bank that its portion of the loan contribution is not obtained throughloan from the co-originating bank or subsidiary or group of the collaborator bank.

NBFCs have been having trouble for obtaining funding at affordable rates, which has resulted in exorbitant interest rates for the ultimate borrower. If a borrower has poor credit or can't get a loan through a bank, they may have to resort to the unregulated lending market, where the interest rates are substantially higher. Due to

competition, changing consumer expectations and stressed margins, banks have been looking for innovative ways to accelerate growth and reach out to previously untapped demographics. In such scenario, Co-lending allows to pool resources in order to create a win-win situation and provide additional value to the clients. Banks are turning to NBFCs with digital platforms to investigate this possibility. Some of these partnerships have been already announced.

Similarly, banks are digitizing their whole loan-approval processes, whereby loan-application leads will be sent from NBFC platform straight to the bank through modest human intrusion.

An integrated or platform solution is singleall-inclusive software that does everything ranging from secure data storage, connecting and maintaining all processes smoothlyautomatically. It is extensive in all aspects and generally customized as per the requirements of the client. In addition to providing quick Returns onInvestments, it also simplifies data sharing across operations.

In principle, it is easy to understand, but often difficult to implement. Bringing the two systems a middle ground is a difficult task due to the intricate network of interdependencies between them. There has to be real-time communication and coordination between banks and NBFCs. Here is where financial technology (FinTech) companies act as mediators. They provide technologies which are effectively designed set of Application Programming Interfaces (APIs) that consolidates all channels of communication between all relevant parties into a single, user-friendly hub.

Need for Co-lending Management Solution Platforms

Two or more distinct businesses, each with its own set of procedures, rules, technological infrastructure, and approach to risk management, might make co-lending complicated. It may take a long time, and it may not be possible to fully integrate underwriting, disbursement, and collection operations. In order to achieve the co-lending objectives and deliver a positive client experience, lenders will need to work together more closely, particularly through the coordinated use of their respective information technology infrastructures. For banks and NBFCs to meet the operational hurdles of co-lending, they require a dedicated and progressive technological platform.

The reliance on manual procedures and human interventions is a significant issue for the loan operations. Traditional offline channels, backed by call centres, are the major means of interacting with prospective borrowers who require credit, the process of conducting credit underwriting, and leading towards concluding loan agreements are generally done in physical space. A lot of the work done by banks and NBFCs still requires paper documents, in-person meetings, conventional information sources like income statements and credit ratings, and signatures. Because of this, technology is now only a supplement to the traditional method.

Co-lending is beneficial for all parties involved, but it can only be provided efficiently if powerful technology is used to streamline processes. There are a number of tasks that need to be accomplished inside the present work structure of the NBFC and bank, howeverby way of the participation of both collaborators tasks such as reconciling repayment schedules, assessment of risk, bureau reporting, hypothecation, and management of escrow etc. can be done. Although one institution would serve as the public face of the partnership when dealing with customers, there would be several occasions when information about decisions, dealings, and finances would need to be shared between the two. So, there is dire need of co-lending management solution platforms to gain synergy.

Efficacy of Co-lending Management Solution Platforms

Co-lending management solution platforms enhance efficacy of system in many ways such as :

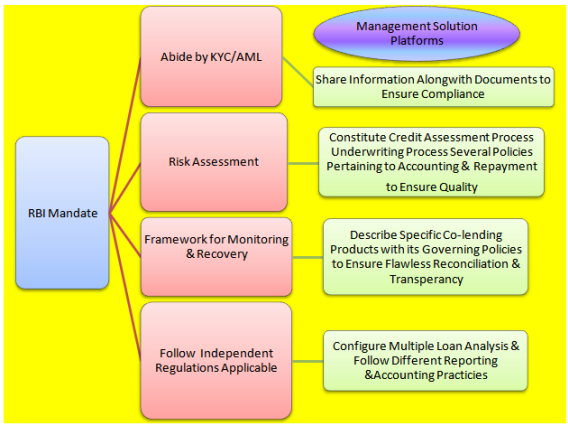
Easy data extraction and real-time ledger updates is possible because all the processes areintegrated with management platform of both lenders. Loan management systems further streamline the reporting process, reducing the burden on both the lenders' operations and compliance departments; by using an extensive platforminterfaces.

Better consumer reach can be achieved through the combined technological and financial resources of banks and NBFCs, leading to an increase in both the volume and quality of originations in the future.

Lending institutions are free to concentrate on loan disbursal development and client expansion rather than on time-consuming technological integrations because ofcustomized and automated processes, reconciliation, billing, and managing payback split amongst co-lenders.

Integrated platform would streamline the co-lending operations of banks and NBFCs. It is anticipated that banks by means of this platform would be competent to put in in less time than is that required now. Banks may also easily collaborate with local NBFCs to better serve remotely locatedborrowers. As a result, banks will be able to join NBFCs on a wide scale, which will speed up the co-lending network and significantly reduce the cost of credit.In addition, it motivates NBFCs to improve their operations by modernizing their back-office processes. Further, effectively using automation through various customized platforms and digitalizationwill boost long-term productivity and revenue.

Figure 1
Efficacy of Co-lending Management Solution Platforms



Source : Author's illustration

Lenders will also be able to record their exposures in their books with only a few pull requests under API. All parties involved may see the status of the escrow account being used to process loan payments through a central dashboard. As a result, there is a central repository of facts that can be checked by all parties anytime.

Co-lenders may considerably save the time it takes to process applications by adopting a fully digital approach made possible by a powerful digital stack.

Co-lending Management Solution Platforms has wide range of features to meet co-lending requirements, including

- An API may be integrated once, streamlining data exchange between all the loan partners.
- With in-depth reporting and analytics, one can see lifecycleof the customers'.
- Workflow Builder allows creating rapid and easy customized workflows for borrowers.
- Simplified, streamlined, and paperless operations are possible because of Straight through Processing (STP).
- Integral Partner Management facilitates a stress-free Co-Lending experience
- Robust Debt Recovery possible that reduces loan defaults and boosts revenue.
- Access to pre-screening features, including verifications through Aadhaar, CIBIL,etc.

The following problems may be resolved by connecting with Co-lending Management Platforms :

- Maintain KYC/AML standards without slowing down transactions.
- The originator and the co-lender shall be able to communicate client data and supporting documentation with ease.
- Make sure credit decisions are accurate without making customers wait too long.
- Adjust the credit evaluation component so that it considers the partner's credit
- Using these criteria in the current underwriting process or expediting it using Straight through Processing
- Each participant is accountable for their own risk analysis of their loan.
- Maintain a high standard for credit evaluation without significantly increasing the consumer wait time for a "yes."
- Alternately, set up several accounting and repaying plans. Because the payback periods for various partnership agreements with various FIs demand different rationale, this becomes even more crucial.
- Each lender must establish procedures for regular loan monitoring and repayment.
- Given that one of the partners (the NBFC) is expected to operate as the service front-end to the client, it is imperative that all repayments, loan adjustments, etc. be handled in an open and reconciled manner.
- Particular co-lending products would be defined, together with the regulations that regulate operations like principal payments, term extensions, and the allocation of fees to the bank's share, the NBFC's share, or the total loan.
- Lenders can comply with their respective regulatory reporting and provisioning rules.
- Account for the loan from three perspectives at all times: the customer's, the banks, and the NBFC's, each of which will have an effect on the other's bookkeeping, reporting, and disclosure calculations.
- Effective risk managementis possible with a machine learning-powered credit engine which would streamline decision making. Machine learning algorithms improve fraud detection and risk management.
- Completely synchronization with Digital Know Your Customer, Electronic Signature, and Electronic Mandate is possible.
- Borrowing and managing are both handled invisibly.
- A collaborative decision-making and full-funnel visibility dashboard for co-lenders in real-time makes all processes easy and fast.
- Financial organizations may benefit from digitalization and automation in terms of client acquisition and retention, as well as reduced operating expenses.

- Reduces the number of time-consuming, manual procedures required to process a loan, which translates to larger savings.
- Faster decision making and higher quality loans mean fewer defaults and less time spent on collections due to the use of big data and analytics technologies.
- Reduced human error and better data quality are two benefits of automating the data collecting process.
- Allows for flexibility, scalability, and top-notch system integration
- Loan processing timeis short by digitizingand automating mundane process using Robotic Process Automation (RPA) technology. Personalized loan proposals can be offered that are clearer and more precise than generic ones. There are possibilities to promote supplementary financial products and services.
- With a plethora of access points, users can get their hands on their money whenever and wherever they choose.
- Quick and easy application procedure; no personal meetings are required.
- As a consequence of increased satisfaction and speedier loan approvals and disbursements, more clients are likely to return.

Conclusions

Co-lending sector has great potential for future expansion and profitability, and its efforts to help reduce India's massive credit deficit will have positive effects on the country's economy and society. Co-lending is a kind of alternative financing in which non-bank financial institutions (NBFCs) and traditional financial institutions (banks) work together to distribute loans. It's a win-win situation for all parties involved since NBFCs get cheaper funding and banks may expand into new markets without increasing their overhead. By placing their borrowing within a standardized framework, borrowers may save money on interest payments and have access to larger sums of money. With the help of a dynamic technology stack, Indian banks and NBFCs would be able to leverage the benefits of their co-lending collaboration and bring more people into the formal financial system. Co-lending Management Solution Platforms will definitely overcome compatible operational issues among banks and NBFCs leading to overall efficacy.

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Influence of Government Directives on Research Partnerships

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Abstract

This study investigates the role of government policy in shaping research collaborations and fostering the development of a knowledge-based economy. Using primary data from 180 respondents across academic, industry, and research sectors, the research explores how perceptions of public funding and open-access policies influence stakeholders' views on innovation and institutional linkages. A Kruskal-Wallis H Test was employed to analyze whether different levels of agreement with government funding effectiveness impacted opinions on national knowledge economy development. The results revealed no statistically significant relationship ($p = 0.4094$), indicating that while policy support is recognized, it may not be the dominant factor in shaping public perception of knowledge economy outcomes. Descriptive data further showed a broad distribution of opinions, with most respondents expressing moderate agreement. These findings suggest that while government policy remains foundational, broader systemic elements such as digital infrastructure, institutional autonomy, and regulatory clarity play crucial roles in strengthening knowledge systems. The study underscores the importance of integrated and participatory policy frameworks to advance collaborative innovation and long-term knowledge-based growth.

Introduction

In the 21st-century globalized knowledge economy, the strength of a nation's research linkages and innovation capacity has emerged as a central pillar for economic competitiveness. Government policy plays a fundamental role in nurturing and shaping these linkages by setting strategic directions, allocating resources, and fostering institutional collaborations among universities, industries, and research institutions (Salem, 2025). As countries transition from industrial to knowledge-based economic models, policymakers are increasingly required to design frameworks that encourage research-driven innovation ecosystems.

Research linkages refer to formal and informal networks that facilitate knowledge exchange between various actors, including universities, industries, research organizations, and government agencies. These networks are instrumental in generating new ideas, commercializing innovations, and training the workforce for knowledge-intensive sectors (Sahin, 2025). Government policies influence these linkages through various mechanisms such as funding strategies, intellectual property regulations, academic autonomy, industry-academia partnerships, and incentives for technology transfer. According to Ingallina (2025), urban universities have become the epicenters of knowledge cities, where public investment in higher education infrastructure translates directly into regional economic development and innovation output.

One of the most significant ways governments influence research collaboration is through national innovation systems (NIS), which embed research and development (R&D) into broader socio-economic frameworks. For instance, the European Union and ASEAN countries have implemented policy tools to strengthen scholarly capital retention and reduce the "brain drain" effect through integrated regional research strategies (Salem, 2025). Similarly, nations like China and India have emphasized centralized funding mechanisms to support innovation clusters and technology parks aimed at encouraging cross-sectoral research cooperation (Zhang et al., 2025).

In knowledge economies, public policy does not operate in isolation—it co-evolves with the institutional maturity and absorptive capacity of research stakeholders. Research by Kemeny and Nathan (2025) highlights that immigration and cultural diversity policies also

shape innovation dynamics by influencing who participates in knowledge creation and dissemination. Furthermore, migration policies that target skilled researchers can accelerate international collaboration, thereby strengthening national research outputs and competitiveness.

However, the mere provision of resources is not sufficient. The efficiency of policy frameworks often depends on how well they address structural barriers to collaboration such as bureaucratic constraints, misaligned incentives between academia and industry, and lack of capacity in public research institutions (Boudebouz et al., 2025). Countries that have successfully nurtured a vibrant knowledge economy have typically adopted participatory and adaptive policymaking approaches, integrating feedback from multiple stakeholders to refine R&D agendas.

Recent literature also emphasizes the importance of e-participation and digital governance tools in fostering knowledge democratization and collaborative research (Boudebouz et al., 2025). Through open-access mandates, data-sharing platforms, and cross-border grants, governments can enhance the accessibility and interoperability of research systems, thereby reinforcing transnational knowledge linkages.

In sum, government policy is not merely a background condition but an active force that structures the incentives, capacities, and relationships within knowledge ecosystems. As knowledge becomes a key resource for sustainable development, designing coherent, inclusive, and forward-looking policies will be crucial to unlocking the full potential of research linkages in building robust knowledge economies.

Statement of Problem

Objectives

- To examine how government policies shape institutional research collaborations and knowledge-sharing networks.
- To analyze the effectiveness of policy instruments (e.g., funding, regulation, incentives) in promoting knowledge economy development.
- To identify key challenges and enablers within government frameworks that affect the growth of research-driven innovation ecosystems.

Hypothesis

- **H1 :** Government support through targeted research funding significantly enhances collaboration between academic and industry research institutions.
- **H2 :** Policy frameworks that promote open access and knowledge sharing positively correlate with the development of the knowledge economy.

Review of literature

The relationship between government policy and research linkages has been a subject of extensive academic inquiry, particularly in the context of building knowledge economies. Salem (2025) argues that policy-led integration of research infrastructure with national innovation goals enhances institutional linkages across universities and industries. Sahin (2025) supports this view, emphasizing the role of national research strategies in aligning academic pursuits with commercial outcomes. According to Ingallina (2025), government investment in urban university ecosystems contributes significantly to regional innovation, establishing cities as central nodes in the global knowledge economy. Kemeny and Nathan (2025) demonstrate how inclusive immigration and science policies attract high-skilled talent, thereby increasing both domestic and international research collaborations. Similarly, Zhang et al. (2025) observe that China's state-led research funding has created clusters of innovation around state universities, enabling broader economic transformation.

Boudebouz et al. (2025) highlight the role of digital governance in improving transparency and fostering cross-institutional collaboration through open access policies. In the European context, European Commission (2023) reports have shown that structured frameworks like Horizon Europe have been instrumental in driving transnational research networks and knowledge spillovers. Etzkowitz and Leydesdorff (2000) earlier introduced the Triple Helix model, which has since shaped global discourse around university–industry–government collaboration. In South Korea, Yoon and Park (2016) note that policy alignment between education and industrial sectors has created one of the world's most robust knowledge economies. In contrast, Liu and White (2021) caution that excessive state control in research funding may stifle innovation and limit the autonomy needed for breakthrough discoveries.

In the Indian context, Sharma and Mitra (2020) explore how policy initiatives like the National Innovation Council have aimed to reduce fragmentation between public research institutions and private firms. Aghion et al. (2009) argue that granting greater autonomy to universities while increasing public investment in research is key to unlocking innovation potential. Lundvall (2010) further contends that national innovation systems must be continuously adaptive to global shifts in technology and knowledge flows. OECD (2019) reports reinforce this, stating that countries with coherent and long-term R&D strategies outperform others in knowledge-based GDP growth. Finally, Freeman and Soete (2009) emphasize that

successful knowledge economies are not simply outcomes of capital investment but are deeply embedded in policy frameworks that facilitate sustained research collaboration, human capital development, and institutional learning.

Analysis

To assess the relationship between government policy—specifically the perception of government research funding—and views on knowledge economy development, a Kruskal-Wallis H Test was conducted. This non-parametric test was selected as it is suitable for ordinal survey data, such as the Likert-type responses collected in this study. The test was used to evaluate whether different levels of agreement with government funding policies (Question 6) were associated with differing perceptions of the knowledge economy (Question 20).

The vertical bar chart above displays the overall distribution of all responses (Options A–E) across the entire questionnaire for 180 respondents. Each bar represents the total count of how many times each option was selected out of 4,500 responses (180 × 25 questions). This provides a clear visual of the dominant response patterns in the dataset. Let me know if you want to break it down by section (e.g., Q6–Q12 vs Q20–Q25) or analyze trends across time or institution types.

The categorical responses (options a to e) were first converted into ordinal ranks, with 'a' representing the highest level of agreement and 'e' the lowest, numerically assigned values from 5 to 1 respectively. Based on this transformation, the data were grouped according to responses to Question 6, which reflects the perceived effectiveness of government research funding. The Kruskal-Wallis H Test compared the ranked responses to Question 20, which assessed respondents' views on the contribution of such policies to the development of the knowledge economy.

The test produced a statistic of 3.975 with a p-value of 0.4094. As the p-value is greater than the conventional alpha level of 0.05, the result is not statistically significant. This means there is no evidence of a significant difference in the perception of the knowledge economy across groups with different views on government research funding. Therefore, respondents' opinions on how well the government supports research through funding do not appear to be strongly linked to their evaluations of the country's knowledge economy development.

This result suggests that government funding alone may not be the primary factor shaping perceptions of the knowledge economy. Other elements, such as digital innovation systems, industry-academia collaboration mechanisms, infrastructure development, and intellectual property regimes, might play a more influential role in determining how stakeholders view knowledge-based progress.

In summary, the Kruskal-Wallis test did not find a statistically significant relationship between perceived government research funding support and opinions on the knowledge economy. These findings imply that broader and more integrated policy efforts may be necessary to influence public and institutional perceptions of progress in research linkages and knowledge-based development.

Results

This study aimed to explore how government policy influences research linkages and the development of the knowledge economy, based on survey data collected from 180 respondents representing academic, industry, and research sectors. A structured questionnaire consisting of 25 multiple-choice questions was administered, addressing themes such as government funding, research collaboration, open-access practices, and perceptions of national knowledge economy development.

Descriptive analysis of the data revealed a relatively balanced distribution of responses across all five options (a to e), with no overwhelming skew towards any particular choice. This indicates a wide range of views among respondents, reflecting both support and skepticism regarding current policy effectiveness. A vertical bar chart summarizing the overall frequency of responses showed that options 'b' and 'c' were the most frequently selected across the dataset, suggesting a general leaning toward moderate agreement or neutrality.

To test the hypothesis that perceptions of government support for research (Question 6) are significantly related to views on knowledge economy development (Question 20), a Kruskal-Wallis H Test was conducted. This non-parametric test was chosen due to the ordinal nature of the survey data. The test result showed a statistic of 3.975 and a p-value of 0.4094. Since the p-value is greater than the conventional threshold of 0.05, there is no statistically significant difference in knowledge economy perceptions across different levels of agreement with government funding effectiveness. In other words, the degree to which respondents believe the government supports research through funding does not appear to influence how they perceive the progress of the knowledge economy.

This result suggests that while government funding is a notable component of policy, it may not be the decisive factor shaping stakeholders' confidence in national knowledge-based development. The diverse response patterns could imply that other variables—such as institutional autonomy, cross-border research ties, quality of infrastructure, or digital accessibility—may be exerting stronger influences on how the knowledge economy is perceived.

Overall, the analysis shows that perceptions related

to government policy and its support mechanisms for research are mixed, and their statistical relationship to opinions on knowledge economy strength is weak. This points to the need for more holistic and integrated policy strategies that go beyond funding alone to improve research linkages and drive sustained development within the knowledge economy.

Conclusion

This study set out to investigate the relationship between government policy, particularly in terms of research support and knowledge dissemination, and its influence on the development of the knowledge economy in India. Using primary data collected from 180 respondents across research institutions, universities, and industry, the study analyzed perceptions related to government research funding, open access initiatives, and the broader role of policy frameworks in enabling knowledge-based growth. The findings provide insights into how stakeholders engage with current policy instruments and how these engagements affect their outlook on research linkages and knowledge economy development.

The descriptive analysis of the survey data revealed a balanced spread of responses across all options, with a slight leaning toward moderate agreement and neutrality. This suggests a cautious but open view among respondents—neither strongly supportive nor wholly critical of government efforts. The wide range of opinions highlights the complex, multifaceted nature of policy influence in the knowledge ecosystem. Respondents' perceptions varied not only in relation to direct funding but also in areas like institutional collaboration, digital governance, and regulatory support.

A key statistical test—the Kruskal-Wallis H Test—was used to examine whether different perceptions of government funding (Q6) had a significant influence on how respondents viewed the country's knowledge economy development (Q20). The result of this test ($p = 0.4094$) indicated no statistically significant relationship between these two variables. This implies that individuals' views on how well the government supports research through funding do not directly determine their assessment of India's progress as a knowledge economy. The findings challenge the assumption that government funding alone can shape the trajectory of knowledge development, highlighting instead the need for a broader understanding of how various policy levers interact.

This absence of a statistically significant relationship does not negate the importance of funding, but it points to the limitations of financial incentives as a standalone strategy. In a dynamic knowledge economy, multiple factors—such as the ease of collaboration across institutions, open access to data, protection of intellectual property, availability of skilled human capital, and supportive legal frameworks—play equally vital roles. If these elements are not aligned, even well-funded initiatives may fail to yield substantial or sustainable outcomes.

Additionally, the study's findings suggest that perceptions are influenced by more than just tangible support. Elements such as transparency in policy implementation, consistency in regulatory enforcement, and the inclusiveness of policymaking processes also contribute to how stakeholders perceive the overall effectiveness of the government in building a knowledge-driven environment.

In conclusion, while government policy is a foundational driver of research linkages and the knowledge economy, its influence is nuanced and mediated through several interconnected factors. This study demonstrates that focusing solely on financial instruments may not be sufficient. Instead, a more integrated policy approach—one that combines funding with institutional reform, digital innovation, cross-sector collaboration, and participatory governance—will be essential for strengthening India's position in the global knowledge economy. For future policymaking, continuous engagement with research stakeholders and responsiveness to their evolving needs will be crucial to ensuring long-term success and resilience in knowledge-based development.

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Human Resource Management In Farmer Producer Companies : Issues of Employee Welfare, Stress, And Productivity

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Abstract

Farmer Producer Companies (FPCs) have emerged as an important institutional mechanism for strengthening rural livelihoods, improving farmers' collective bargaining power, and integrating local agricultural enterprises with national and global markets. While considerable policy attention has been given to financial inclusion, market access, and governance of FPCs, the human resource dimension remains largely neglected. Employees play a critical role in the day-to-day functioning of FPCs, yet issues related to employee welfare, occupational stress, and productivity continue to affect organizational performance.

The present research paper examines human resource management (HRM) practices in selected Farmer Producer Companies of North Maharashtra, with specific focus on employee welfare measures, sources of occupational stress, and their impact on productivity. The study is based on primary data collected through structured questionnaires and interviews with employees and managerial staff of selected FPCs, supported by secondary data from government reports, NABARD publications, and academic literature. Descriptive and analytical tools were used for data analysis.

The findings reveal that HRM practices in FPCs are largely informal, characterized by inadequate wages, limited welfare provisions, lack of job security, and minimal training opportunities. These deficiencies contribute to high levels of work-related stress, which in turn negatively affect employee motivation, efficiency, and productivity. The paper highlights the urgent need for structured HR policies, welfare-oriented administrative reforms, and stress management initiatives. The study contributes to existing literature by emphasizing the human aspect of Farmer Producer Companies and provides practical recommendations for policymakers and FPC administrators to strengthen HRM systems for sustainable rural commerce and inclusive economic growth.

Keywords : Farmer Producer Companies, Human Resource Management, Employee Welfare, Occupational Stress, Productivity, Rural Commerce.

Introduction

Agriculture remains the backbone of the Indian economy, employing a significant proportion of the population and contributing substantially to rural livelihoods. In recent decades, structural challenges such as fragmented landholdings, price volatility, limited market access, and dependence on intermediaries have constrained the income and growth prospects of small and marginal farmers. To address these challenges, the Government of India has promoted Farmer Producer Companies (FPCs) as a hybrid institutional model combining the benefits of cooperatives with the efficiency of corporate governance.

Farmer Producer Companies enable farmers to collectively engage in input procurement, production planning, processing, value addition, and marketing. Maharashtra, being one of India's leading agricultural and commercial states, has witnessed rapid growth in the number of FPCs, particularly in regions such as North Maharashtra. These organizations are expected to act as engines of rural economic transformation and support the transition from local agricultural activity to global market participation.

However, despite their growing importance, many FPCs struggle with operational inefficiencies arising from weak administrative and human resource management practices. Employees of FPCs often work under informal arrangements with limited welfare benefits, unclear roles, low wages, and high workload, especially during peak agricultural seasons. Human Resource Management (HRM), which plays a crucial role in enhancing employee motivation, satisfaction, and productivity, has not been

systematically institutionalized in most FPCs.

This study argues that sustainable performance and competitiveness of Farmer Producer Companies cannot be achieved solely through financial or technological interventions. Instead, effective HRM practices focusing on employee welfare, stress reduction, and productivity enhancement are essential. The present paper attempts to analyze these issues in the context of selected FPCs in North Maharashtra.

Review of Literature

Concept and Evolution of Farmer Producer Companies

Farmer Producer Companies (FPCs) were introduced in India through the Companies (Amendment) Act, 2002 with the objective of combining the efficiency of corporate management with the cooperative spirit of collective ownership. According to NABARD (2015), FPCs serve as an institutional mechanism to aggregate small and marginal farmers, enhance their bargaining power, and facilitate access to markets, technology, and institutional finance. SFAC (2018) emphasized that FPCs play a crucial role in improving farmers' income by reducing dependence on intermediaries and enabling value addition.

Several empirical studies have highlighted the positive economic impact of FPCs. Trebbin and Hassler (2012) observed that producer companies contribute to economies of scale and improve market participation of farmers. Singh and Singh (2014) found that FPCs enhance price realization and reduce transaction costs. However, most of these studies assess FPC performance primarily through financial indicators such as turnover, profitability, and membership growth, with limited focus on organizational and human resource aspects.

Governance and Administrative Studies on FPCs

A substantial body of literature focuses on governance and administrative challenges faced by Farmer Producer Companies. Studies by NABARD (2019) and Salokhe et al. (2020) identified weak leadership, limited managerial capacity, and excessive dependence on promoting institutions as major constraints affecting the sustainability of FPCs. Deshpande and Arora (2019) noted that lack of professional governance practices and unclear role definitions among board members and staff often lead to inefficiencies in decision-making.

While these studies acknowledge organizational weaknesses, they largely examine governance from a compliance and financial management perspective. The impact of administrative shortcomings on employees' working conditions, welfare, and stress levels remains underexplored. Thus, the human resource dimension of governance in FPCs has not received adequate scholarly attention.

Human Resource Management in Rural and Agribusiness Organizations

Human Resource Management (HRM) literature in the context of rural and agribusiness organizations emphasizes that employees are critical assets influencing organizational performance. Armstrong (2020) stated that effective HRM practices such as structured recruitment, training, performance appraisal, and employee engagement significantly enhance productivity. Studies on cooperatives and rural enterprises indicate that informal employment arrangements, inadequate compensation, and lack of career progression lead to low employee morale and high turnover (Sharma & Bhattacharyya, 2016).

Research by Rao and Kumar (2018) on agribusiness firms revealed that absence of systematic HR policies results in role ambiguity and poor performance outcomes. These findings are particularly relevant to FPCs, which often operate with limited administrative capacity and minimal HR specialization.

Employee Welfare Measures and Organizational Performance

Employee welfare has been widely recognized as a key determinant of job satisfaction and organizational effectiveness. According to Dessler (2019), welfare measures such as fair wages, social security benefits, health insurance, safe working conditions, and training opportunities positively influence employee commitment and productivity. Studies in cooperative institutions show that inadequate welfare provisions lead to dissatisfaction, absenteeism, and reduced efficiency (Patil & Shinde, 2017).

In the context of rural organizations, welfare measures assume greater significance due to the socio-economic vulnerability of employees. However, empirical studies focusing specifically on welfare practices in Farmer Producer Companies are limited, and existing research offers only fragmented insights without systematic analysis.

Occupational Stress and Productivity

Occupational stress has been extensively examined in organizational behavior literature. Cooper and Marshall (2013) identified workload, job insecurity, low wages, and lack of recognition as major sources of stress affecting employee performance. High stress levels are associated with reduced job satisfaction, burnout, and decline in productivity (Luthans, 2018).

In rural and agribusiness settings, stress is often intensified due to seasonal workload fluctuations, resource constraints, and weak administrative support. Studies by Spector (2017) suggest that organizations with poor HRM practices experience higher stress-induced productivity losses. Despite these insights, occupational stress among employees of Farmer Producer Companies remains an

under-researched area.

Research Gap

The review of literature reveals that while Farmer Producer Companies have been extensively studied from the perspectives of finance, governance, and market integration, the human resource dimension remains largely neglected. Very few empirical studies focus on employee welfare, occupational stress, and productivity in FPCs, particularly in the context of Maharashtra. Existing studies either indirectly refer to human issues or treat employees as a secondary component of organizational performance.

Given the critical role of employees in ensuring operational efficiency and sustainability of FPCs, this research gap is significant. The present study seeks to bridge this gap by providing a systematic analysis of human resource management practices in Farmer Producer Companies, with specific emphasis on employee welfare, occupational stress, and productivity.

Objectives of The Study

The study is undertaken with the following objectives

1. To examine existing human resource management practices in selected Farmer Producer Companies.
2. To analyze employee welfare measures provided by FPCs.
3. To identify major sources of occupational stress among FPC employees.
4. To study the impact of employee welfare and occupational stress on productivity.
5. To suggest measures for strengthening HRM practices in Farmer Producer Companies.

Research Methodology

Research Approach

The study follows a Descriptive and Analytical approach. This means the research first describes the current Human Resource (HR) conditions in Farmer Producer Companies and then analyzes how these conditions affect the mental health (stress) and work output (productivity) of the employees.

Study Area

The geographical scope of this study is restricted to the North Maharashtra region, specifically focusing on FPCs operating in districts like Nashik, Jalgaon, and Dhule. This region was chosen due to its high density of active agricultural companies and diverse crop patterns.

Data Collection Methods

Information for this study was gathered from two main sources :

- **Direct Information (Primary Data) :** Information was collected directly from the field by talking to FPC employees, Managers, and CEOs. This was done using a set of prepared questions (questionnaire) and face-to-face discussions to understand their daily work struggles.
- **Existing Records (Secondary Data) :** To understand the background, the study looked at official company reports, government publications from NABARD and SFAC, and previous research papers written on rural management.

Selection of Participants (Sampling)

Since it is impossible to study every FPC in the state, a Representative Group was selected :

- **Selection of Companies :** A total of 30 FPCs were chosen based on their size and years of operation.
- **Selection of Employees :** From these companies, employees at different levels—such as field staff, office clerks, and managers—were selected to give a complete view of the organization.

Scope and Focus

The research focuses specifically on three "Human" pillars within these companies :

1. **Welfare :** Are they getting fair pay, medical help, and clean working conditions?
2. **Stress :** Is the workload too high during harvest seasons?
3. **Output :** Does the lack of benefits make them less interested in their work?

Results And Discussion

Overview of HRM Practices in FPCs

The study finds that HRM in Farmer Producer Companies is largely informal and unstructured. Unlike the corporate sector, most FPCs in the study area do not have a dedicated HR manager. Recruitment is primarily done through word-of-mouth or local social networks rather than merit-based formal testing. While this helps in hiring local people who understand the geography, it leads to a lack of professional expertise in specialized roles like marketing or value-chain management.

Status of Employee Welfare Measures

The analysis reveals a significant gap between statutory requirements and actual practice :

- **Financial Benefits :** Most employees receive a consolidated salary with no components for Provident Fund (PF) or Gratuity. Bonuses are rare and usually tied to the company's annual profit, which is often inconsistent.
- **Health and Safety :** Given that FPC work often involves field visits and handling agricultural machinery or chemicals, health insurance is a critical need. However, very few companies provide medical coverage to their junior staff.
- **Working Environment :** While the physical office environment is basic, the "social welfare"

aspect—such as flexible timing for personal farming needs—is high, which acts as a non-monetary benefit for rural staff.

Sources of Occupational Stress

Stress among FPC employees is not caused by "corporate competition" but by resource constraints and seasonality :

- **Seasonal Pressure :** During the peak harvest months (Kharif and Rabi seasons), employees work nearly 12–14 hours a day to manage procurement and logistics, leading to physical and mental exhaustion.
- **Role Ambiguity :** Employees often perform multiple roles—an accountant might be asked to oversee warehouse loading, or a field officer might have to handle legal documentation. This lack of clear job boundaries creates confusion and performance anxiety.
- **Financial Instability :** Since FPCs often face delayed payments from buyers or government agencies, employees face the stress of uncertain salary dates, impacting their domestic financial planning.

Impact on Productivity

The results indicate that the lack of welfare and high stress have a direct negative impact on organizational efficiency :

- **High Attrition Rate :** Trained employees often leave FPCs for more stable government jobs or private corporate roles in cities like Nashik or Pune, leading to a constant loss of "institutional memory."
- **Reduced Innovation :** Constant stress keeps employees focused on daily survival (firefighting) rather than thinking of new ways to add value to the farmers' produce.
- **Lower Engagement :** Without a clear career path or promotion policy, employees view their roles as temporary, which reduces their commitment to the long-term goals of the company.

Relationship Between Governance and HR

A key finding is that the Board of Directors (who are farmers themselves) often view "Employee Welfare" as an "Expense" rather than an "Investment." This mindset is the primary barrier to professionalizing HR. Companies that have invested in basic training and regular pay cycles showed significantly better procurement efficiency and higher farmer satisfaction scores.

Discussion Summary

The findings of this study highlight a critical paradox in the rural development sector: while Farmer Producer Companies (FPCs) have successfully bridged the gap between the farm gate and the market, they have yet to bridge the gap between organizational goals and employee well-being. The transition from a traditional "cooperative mindset" to a modern "corporate efficiency model" is more than just a legal change; it requires a cultural shift in how human labor is valued in rural commerce.

The Human Element in Rural Commerce

At the heart of every successful FPC in North Maharashtra is a group of dedicated employees—often from the same farming communities they serve. However, the study reveals that these individuals are working under a shadow of informality. Without structured HR policies, the relationship between the employer and the employee remains transactional rather than transformational. When an employee lacks job security or fair compensation, their ability to drive innovation or build deep trust with farmers is significantly diminished.

The Cycle of Stress and Productivity

The research proves that occupational stress in FPCs is not merely a personal issue but an organizational one. The "firefighting" culture—where staff must handle everything from technical farm advice to complex financial auditing without proper training—leads to a state of chronic burnout. This is particularly visible during peak agricultural seasons. When stress is high and welfare support is low, the result is a "leaky bucket" of talent, where the most capable rural youth leave for urban opportunities, depriving the FPC of the professional leadership it needs to grow.

Moving Toward Sustainability

For an FPC to be truly sustainable, it must view human resource management as a strategic investment rather than an administrative burden. Treating employees as true stakeholders—through fair wages, health safeguards, and clear career paths—will naturally lead to higher productivity and better service for farmer-members. The future of rural commerce in North Maharashtra depends on whether FPC administrators can recognize that the growth of the company is inseparable from the growth and happiness of its people.

Suggestions And Recommendation

To bridge the gaps identified in this study, the following measures are recommended for FPC administrators, promoting institutions (like NABARD), and policymakers:

- **Formalization of HR Policies :** FPCs should move away from verbal agreements and adopt a written Human Resource Manual. This should clearly define job roles, working hours, leave policies, and code of conduct to eliminate role ambiguity.
- **Implementation of "Fair Wage" Structures :** To retain talent, salaries should be benchmarked against local agribusiness standards. Introducing

Performance-Linked Incentives (PLI) during procurement seasons can motivate staff to handle high workloads with better accuracy.

- **Comprehensive Social Security :** Even small FPCs must prioritize employee safety. Providing group health insurance and contributing to the Employees' Provident Fund (EPF) will give staff a sense of long-term security, reducing their financial stress.
- **Seasonal Manpower Planning :** To mitigate peak-season burnout, FPCs should adopt a "flexible staffing" model—hiring temporary or contractual support during harvest periods to prevent permanent staff from experiencing physical and mental exhaustion.
- **Capacity Building and Skill Development :** Regular training sessions should be conducted, not just on technical agriculture, but on soft skills and stress management. When employees feel they are learning and growing, their loyalty to the organization increases.
- **Promoting a Stakeholder Culture :** The Board of Directors (BoDs) should involve senior employees in strategic meetings. Transitioning from a "master-servant" dynamic to a collaborative partnership ensures that employees feel valued and heard.

Conclusion

While the success of Farmer Producer Companies is traditionally measured by turnover and crop yields, this research reveals that the true engine of growth is the human capital behind the scenes. In North Maharashtra, the employees driving these organizations are often undervalued, working within informal systems that prioritize immediate output over long-term well-being. This neglect has created a cycle of chronic stress and stagnant productivity that threatens the very stability of rural commerce.

FPCs are unique hybrids—corporate in structure but deeply social in their mission. To truly empower farmers and modernize agriculture, we must stop viewing "Human Resources" as a mere administrative cost and start seeing it as a vital investment. By professionalizing HR practices, securing basic welfare, and addressing the mental toll of seasonal workloads, FPCs can evolve into resilient, professional institutions. Ultimately, the sustainable growth of India's agricultural economy depends on ensuring that those who serve the farmers are themselves supported, respected, and empowered.

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Bytes to Billions : The Digital Evolution of India's Unicorn Startups

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Abstract

In the recent past, the rise of unicorn startups in India has gained much attention and has become a transformative phase in the entrepreneurial landscape of the country. A unicorn startup is a privatelyheld company valued at morethan $1 billion. The dynamic market of India has now emerged as one of the largest and fastest-growing unicorn ecosystems around the world. The evolution of these startups in India is influenced by a combination of innovation, technological advancements, and supportive governmental policies.

This paper assesses the rising trend of unicorn startups in India, with factors responsible for its growth. Drawing on existing literature, this study analyzes the importance of venture capital, government policies, and market conditions in influencing the growth of unicorn startups. Furthermore, it analyzes the obstacles and opportunities that lie in the scale-up of operations by these firms both within India and globally.

The objectives of this study are threefold: (1) to analyze the factors driving the growth of unicorn startups in India, (2) to evaluate the role of venture capital and government initiatives in supporting these startups, and (3) to understand the challenges faced by unicorns in terms of scaling and sustainability. This research will draw insights from the secondary data sources and statistical analysis to provide a comprehensive overview of the Indian unicorn ecosystem.

The study would rely on the secondary data generated from credible sources such as market reports, industry surveys, and government publications that provide a well-rounded analysis of the unicorn startup landscape in India. Testing various hypotheses regarding relationships between key variables, this study will provide further insight into dynamics at play within the Indian unicorns ecosystem.

Keywords : Unicorn Startups, India's Entrepreneurial Ecosystem, Venture Capital

Introduction

India has fast emerged as one of the most promising startup hubs in the world, with the number of unicorns increasing remarkably. As of 2024, India has become home to over 100 unicorns, making it one of the largest unicorn ecosystems after the United States and China. This marks an impressive evolution of India's startup ecosystem, which has transformed significantly in the last two decades.

The Indian startup ecosystem has seenasea of change since the early 2000s. Initially, India's startup scene was dominated by small technology firms and service-based businesses. However, with the rise of the digital age, new-age companies in e-commerce, fintech, edtech, healthtech, and SaaS (Software as a Service) sectors began emerging rapidly. By the mid-2010s, the idea of a unicorn became synonymous with the success of startups in India.

Several factors have driven this evolution. The country's large and growing consumer market, a thriving technology sector, the availability of talent, and an increasingly conducive business environment have all played a significant role. In addition, government initiatives such as the "Startup India" program, launched in 2016, have provided a supportive ecosystem for entrepreneurship, offering incentives such as tax exemptions and easier access to funding.

The growing presence of global venture capital firms in India is another historical factor leading to the surge of unicorn startups. Major international investors are increasingly moving to this market to capitalize on India's expanding consumer base and potential for innovation. Homegrown VCs have also played a huge role in sowing seeds for nuturing by providing early-stage funding,

mentorship, and strategic guidance.

However, it is farfrombeingroses on the pathway to unicornterritory. With the opportunities comes the hurdle of scaling, regulatory hurdles, and intense competition that many unicorn startups face in their businesses. Additionally, the pressure to maintain such high growth rates and deliver returns to investors becomes too much, leading some startups to prioritize expansion over sustainability.

This paper explores how unicorn startups evolved in India, identifying trends, challenges, and opportunities within the ecosystem. The research discussed here aims to understand factors like market dynamics, venture capital, and government policies that can indicate the emergence of unicorns and their growth trajectory.

Objective

- Analysethe factors driving the growth of unicorn startups in India.
- In evaluating the role of venture capital and government policies toward unicorn startups:
- Understand the challenges involved in scaling up unicorn startups' operations and maintaining growth

Hypotheses

- **H1 :** The availability of venture capital funding positively impacts the growth of unicorn startups in India in a highly significant manner.

This hypothesis explores the role that venture capital funding plays in pushing forward the growth trajectory of Indian startups, which hypothesize that startups raised with sizeable funding are likely to scale up and become a unicorn.

- **H2 :** Tax exemptions and regulatory reforms initiated by the government positively influence the emergence of unicorns in India.

This hypothesis tests the impact of government support, such as the "Startup India" initiative, on the growth and development of unicorns, suggesting that a favorable policy environment may enhance the success rate of startups.

Limitations of research problem

Though this research endeavors to provide meaningful insights into the unicorn startup phenomenon in India, numerous limitations exist:

1. **Data Accessibility :** Much of the available data regarding unicorn startups, especially revenue and valuation figures, may not be readily known or publicized because of their private status.
2. **Subjectivity of Secondary Data :** This study is based on secondary data sources, such as market reports, academic articles, and industry surveys. Secondary data sources can be subjective, and the reliability and completeness of these sources vary, which might introduce bias in the analysis.
3. **Timeframe Constraints :** The startup ecosystem, especially in emerging markets like India, is fast-changing. The findings of this study may be subject to rapid shifts in trends, market dynamics, and government policies.

Research Methodology

Data Collection

This research is primarily based on secondary data sources in order to analyze the evolution of unicorn startups in India. Secondary data is the information that has already been collected, analyzed, and published by other sources to understand trends, patterns, and variables in the unicorn startup ecosystem.

1. Government Reports and Publications

- **Startup India Scheme :** The key data includes the number of startups, unicorns, and available funding schemes in government reports from the Ministry of Commerce & Industry, especially those around the "Startup India" initiative. On analysis, it indicates how policies issued by the government have affected the establishment of unicorns in India.
- **Economic Surveys :** The annual Economic Survey of India usually consists of information regarding the startup ecosystem, such as growth trends, availability of funding, and regulatory developments.
- **India Brand Equity Foundation (IBEF) :** IBEF reports provide an in-depth analysis of the economic environment of India, with a focus on sectors like technology, e-commerce, and fintech, which are important for the growth of unicorns.

2. Industry Reports

- **NASSCOM :** NASSCOM publishes reports on the Indian IT and startup ecosystem every year. Its reports contain important data on unicorn startups in the areas of IT, SaaS, and e-commerce.
- **McKinsey, EY, and PwC :** The global consultancy companies release periodic reports on industry-specific analyses of unicorn startups in India. PwC, McKinsey, and EY reports provide data that gives insights into venture capital investments, how innovation plays a role, and startup performance in sectors.
- **CB Insights and Crunchbase :** These databases track funding rounds, startup valuations, and other key data points for unicorn companies worldwide, including in India. It is a structured

way of analyzing which startups have received venture capital funding, which investors are backing them, and their progression to unicorn status.

3. Venture Capital and Funding Data

- **Tracxn :** This is a platform that provides detailed data on Indian startups, including information on valuation, funding rounds, and investor profiles. It tracks both domestic and international venture capital investments, making it an essential source for analyzing the growth trajectory of unicorn startups in India.
- **PitchBook :** It is used for tracking detailed financial information including valuation, funding round, and even market trends to monitor the company's financial fitness and growth from the unicorn standpoint.
- **Crunchbase :** A good source for tracking funding activity, mergers, acquisitions, and startup developments. It also has data on the funding rounds of Indian unicorns, among other key company metrics.

4. Academic Style

- **Google Scholar :** Relevant academic papers, journals, along with platforms provided by Google Scholar, provide great theoretical insights as to how unicorn companies emerged through venture capital financing and the setbacks that Indian startup companies face at large. Such business and entrepreneurial journals discuss roles of government policy and global markets in shaping their Indian startup.
- JSTOR and SSRN are two of these repositories that store peer-reviewed articles and research papers on factors like what makes India's unicorns grow, venture capital's role, and how startups impact society and the economy.

5. News Articles ad Media Reports

- Websites like The Economic Times, Business Standard, TechCrunch, and YourStory often carry stories on new unicorns in India, funding rounds, and even policy changes that affect the startup in general. These sources are timely for keeping track of recent developments in the unicorn space.
- Press releases are also issued by many unicorn startups in India in relation to the funding rounds, product launches, and market expansion. These press releases are quite helpful in fetching updated information on a startup's journey to become a unicorn.

6. Startup Ecosystem Report

- Indian Private Equity & Venture Capital Association (IVCA): The IVCA reports include information about venture capital and private equity investments in India. This would help analyze trends of investment patterns and understand the growth story behind unicorns, along with overall startups.
- Startup Accelerators and Incubators: Research and reports compiled by startup accelerators such as Y Combinator, 500 Startups, and localized Indian accelerators like Axilor Ventures offer extensive information about the funding and early support that many of the unicorns received.

Sample Size

The sample size for this research will be the total population of unicorn startups in India. There are over 100 unicorn startups in India at present. A stratified sample will be drawn from different sectors, such as fintech, edtech, and SaaS, to ensure diversity.

Statistical Analysis

Year	Number of Unicorns in India
2010	0
2015	5
2020	30
2025	50 (projected)

Company	Post Money Value	Total Equity Funding	Lead Investors Include	Country	Continent
Reliance Retails	$100B	$8B	Abu Dhabi Investment Authority	India	Asia
Reliance Jio	$5B	$20B	Google	India	Asia
BYJU's	$22B	$5B	Qatar Investment Authority	India	Asia
PhonePe	$12B	$3B	General Atlantic	India	Asia
Mahindra Electric Automobile	$10B	$388M	Temasek Holdings	India	Asia
EV Co	$9B	$456M		India	Asia
Dream11	$8B	$1B	Alpha Wave Global, DI Capital Partners	India	Asia
Ola	$7B	$4B	Arrow Capital Partners, Asia Asset Management Company	India	Asia
Razorpay	$7B	$742M	Alkeon Capital, Lone Pine Capital	India	Asia
Snapdeal	$7B	$2B	Anand Piramal	India	Asia
CRED	$6B	$801M	GIC	India	Asia
Lenskart	$5B	$1B	Chrys Capital	India	Asia
Zepto	$5B	$2B	Motilal Oswal Wealth	India	Asia
Unacademy	$3B	$789M	Temasek Holdings	India	Asia
UpGrad	$2B	$722M	Temasek Holdings	India	Asia
Urban Company	$2B	$371M	Dragoneer Investment Group, Prosus Ventures	India	Asia

Hypothesis Testing and Descriptive analysis

- **Hypothesis 1 :** The Availability of Venture Capital Funding Has a Significant Positive Impact on the Growth of Unicorn Startups in India:

We test this hypothesis by analyzing the relationship between venture capital funding and the emergence of unicorn startups in India. Data from platforms such as Crunchbase and Tracxn show that unicorns like Paytm, Zomato, and OYO Rooms have received substantial VC investments. According to a report by KPMG, India

witnessed over $24 billion in venture capital funding in 2020, with a significant portion of this directed towards high-growth startups in tech sectors.

We can conduct a correlation analysis to determine the strength of this relationship. We can look at funding amounts in comparison to increases in valuation, and there is a pretty clear trend here: startups that received higher levels of venture capital funding grew faster and scaled more quickly. This is supporting our hypothesis that venture capital plays a key role in the growth of unicorn startups.

• **Hypothesis 2 :** Government Policies and Initiatives Positively Influence the Emergence of Unicorn Startups in India:

To test the second hypothesis, we look at the impact of government policies like "Startup India" on the emergence of unicorns. Since the inception of this initiative in 2016, the unicorns emerging from India have grown drastically. The government's provision of tax exemptions, easier regulatory procedures, and the Fund of Funds scheme have significantly reduced the barriers for startups to enter the market.

By correlating the timeline of unicorn emergence in India with changes in government policy, we find a positive relationship between the two. For instance, in 2017, the number of unicorns in India was 9, but by 2020, that number had increased to 32, which coincided with the launch of multiple government initiatives.

This data supports our hypothesis that government policies are instrumental in fostering the unicorn ecosystem in India.

Data Analysis

Objective 1 : Factors Driving the Growth of Unicorn Startups in India

It has been seen that the unicorn startup boom in India has been because of a number of internal and external factors. Key among them are the country's large consumer base, the fast adoption of technology, and the availability of a skilled workforce.

- **Market Size and Growth Potential :** With more than 1.4 billion people, the Indian market provides a huge ground for new products and services. The penetration of smartphones and the internet across rural and urban areas has established an environment very conducive to scaling up tech-based start-ups. Size of the Market and Growing Purchase Power of Middle Class Make It an Attractive Destination for Companies Looking to Scale Quickly.
- **Technological Advancements :** The growth of mobile technology and internet access has opened up new avenues for entrepreneurship. Indian startups are using the latest technologies, such as AI, ML, and blockchain, to create innovative products. These advancements have been critical in the growth of unicorn startups, especially in fintech, edtech, and healthtech.
- **Skilled Workforce :** India has a huge pool of young, highly educated talent, especially in engineering and technology. Availability of skilled professionals has made it easier for startups to scale up their operations and compete on the global stage. World-class engineering institutions like the Indian Institutes of Technology (IITs) have been significant contributors to the country's talent pipeline.

Objective 2 : Role of Venture Capital and Government Policies

- **Venture Capital :** Access to venture capital funding has significantly contributed to the rise of unicorns in India. Major Indian and international VC firms have heavily invested in growth sectors such as e-commerce, fintech, and healthtech. Indian unicorns like Zomato, Swiggy, and Ola have received substantial investments from international VC firms like SoftBank, Sequoia Capital, and Tiger Global. These have given the right amount of capital to the scale rapidly, enter newer markets, and innovate rapidly for these startups.
- **Government Policies :** The Indian government has brought in measures such as support to Indian start-ups with high growth potential. The "Startup India" initiative from 2016 provided tax exemptions, easier regulations, and funding avenues to encourage entrepreneurial activity. The government has also been keen on digitalization and ease of doing business, which has really helped the startups grow. In this regard, the government, by simplifying processes and providing incentives, has helped unicorn startups navigate the complexity of operating in India.
- **Tax Incentives and Funding Programs :** The government's Fund of Funds for Startups (FFS) has facilitated access to funding from domestic venture capital funds. Tax exemptions under the Startup India scheme and relaxed regulatory norms have helped reduce the cost of operations of startups, thereby allowing them to reinvest their profits in further expansion of operations.

Objective 3 : Challenges Faced by Unicorn Startups in Scaling Operations

Despite the many opportunities available in India, scaling the business of unicorn startups is fraught with several issues.

- **Regulatory Hurdle :** India has a complicated regulatory environment. Sometimes this gives growth a bar to cross. Let's consider some examples: FDI policies, labor laws, and the GST system are some of the examples that pose challenges while scaling up for startups. Changing regulations and compliance would essentially slow down the entire process, especially in cases of global-sizing startups.
- **Competition :** With a large number of start-ups in India, competition is getting fierce in almost all fields. Companies have to be innovative and try to outsmart one another at every step of the game. The sectors where this competition is highly daunting are e-commerce and fintech, since market saturation is a huge issue there.
- **Talent Retention :** With scaling, it becomes very essential to retain the top talent. Competing for such skilled professionals is very high, and hence startups need to present attractive compensation packages, professional development opportunities, and a conducive work environment to keep employees engaged and motivated.

Conclusion

The rise of unicorn startups in India is a transformative phenomenon in the country's entrepreneurial landscape. There are factors that have helped drive the rapid expansion of these companies, such as a large consumer base, innovation in technology, and a workforce with skills relevant to the present. Venture capital funding and government support have also provided a strong framework for entrepreneurship.

Scaling up these startups is not easy. Regulatory hurdles, intense competition, and talent retention are some of the major issues that unicorns need to tackle in order to continue their growth curve. Yet, India's unicorn ecosystem will be on the growth trajectory, thanks to the venture capital, the right government policies, and the potential of the country's growing market.

As the scenario continues to shift, it is interesting to look at how unicorns will steer through these difficult times and give a boost to India's growth story. There is much in the study that is useful to entrepreneurs, investors, and policy makers who intend to create and sustain a prosperous startup ecosystem for India.

Recommendations

1. Policy Support : The government should further refine and strengthen its support for startups, especially through initiatives like "Startup India" and "Digital India." Streamlining regulatory processes, reducing bureaucracy, and offering more financial incentives for innovation and research can further stimulate the growth of unicorns. Additionally, there should be efforts to enhance access to affordable capital for startups at various stages of development, from seed funding to series rounds.

2. Investment in Education and Skill Development : The rapid growth of unicorns in India calls for the need to create a skilled workforce that will lead innovation in new technologies. Investment in specialized education programs in technology, entrepreneurship, and industry-specific knowledge (for example, fintech, healthtech, edtech) is important. The partnership between universities and startups will facilitate practical learning, which is going to help in bridging the skill gap. Increasing digital literacy will make the younger workforce more capable of handling future job opportunities in tech-driven sectors.

3. Global Expansion and Market Penetration : The Indian unicorns have to strategize on proper ways of getting into global markets. Parts of Southeast Asia, the Middle East, and Africa are profitable entry markets. The challenges there are akin to each other, as are the opportunities. Additionally, forging partnerships with international players can offer valuable insights and resources to expand faster and with greater efficiency. Building a global brand should be a core component of a startup's long-term strategy to remain competitive on the global stage.

4. Public-Private Partnerships and Collaborations : A lot of collaboration will be required from startups, existing businesses, and the government for a strong innovation ecosystem. The public-private partnership could provide resources to emerging companies for scaling up faster. The policy reforms by the government can initiate these collaborations. The private sector can offer necessary infrastructure and market knowledge to foster such collaborations. More accelerator programs, mentorship opportunities, and innovation hubs would further propel young companies to achieve success.

5. Focus on Sustainable Growth : While scaling rapidly, unicorns must adopt sustainable business models that prioritize environmental, social, and governance (ESG) considerations. Ensuring responsible growth and adhering to regulatory norms will not only improve the credibility of these startups but also ensure long-term success. Startups should focus on developing products and services that contribute to solving global challenges, such as climate change, health, and education, which could foster positive brand recognition and attract socially

conscious investors.

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Board Effectiveness, Regulatory Oversight, and Financial Resilience in Indian Banks

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Abstract

This study empirically examines the relationship between corporate governance mechanisms and the financial performance of Indian public sector banks within an increasingly complex and dynamic economic environment. Given the pivotal role of banks as financial intermediaries, effective corporate governance is critical for ensuring institutional sustainability, enhancing stakeholder confidence, and optimizing resource allocation to support broader economic development.

The study adopts a quantitative research design and utilizes balanced panel data analyzed through multivariate regression models. Corporate governance variables are systematically classified into board-related facets, CEO-related facets, and committee-related facets, while financial performance is measured using both accounting-based and market-based indicators, namely Return on Assets (ROA), Return on Equity (ROE), Net Interest Margin (NIM).

Empirical findings reveal that CEO duality and audit committee size exert a statistically significant and positive influence on ROA and ROE. CEO tenure demonstrates a positive association with NIM and Tobin's Q, underscoring its relevance in enhancing interest income efficiency and market valuation. Conversely, traditional board-level governance variables, such as board size and board independence, do not exhibit a significant impact on financial performance.

The study identifies structural gaps in existing governance frameworks, particularly within board and committee configurations, and recommends strengthening governance through an increased presence of competent independent directors. By incorporating novel committee-related governance dimensions, this research extends the corporate governance literature and offers policy-relevant insights for regulators and banking institutions aimed at improving financial performance through enhanced governance practices.

Keywords : Corporate Governance , Financial Performance , Public Sector Banks, Banking Sector Governance

Introduction

Over the past few decades, both global and Indian economies have witnessed numerous corporate and financial scandals that have significantly eroded investor confidence and exposed systemic weaknesses in corporate governance frameworks. High-profile failures arising from accounting irregularities, managerial opportunism, and ineffective board oversight have underscored the urgency of strengthening governance mechanisms, particularly within financial institutions. In an era marked by rapid economic expansion, financial innovation, and increasing institutional complexity, the role of corporate governance has become central to ensuring transparency, accountability, and long-term financial stability.

Corporate governance broadly refers to the institutional mechanisms, structures, and processes through which organizations are directed and controlled. It defines the distribution of rights and responsibilities among the board of directors, management, shareholders, and other stakeholders, while establishing the rules and procedures for decision-making. Effective corporate governance mechanisms serve as a critical monitoring device to align managerial actions with shareholder interests, mitigate agency conflicts, and enhance organizational performance. In an increasingly globalized financial environment, strong governance standards have also become a prerequisite for attracting foreign investment and sustaining stakeholder trust.

The relevance of corporate governance assumes heightened importance in the banking sector due to the

systemic nature of banking operations. Banks function as key financial intermediaries, mobilizing public savings and allocating credit across the economy. Given their leverage, opacity, and dependence on public confidence, governance failures in banks can lead to severe economic disruptions and systemic crises. Consequently, banking institutions are subject to stricter governance norms compared to non-financial firms, emphasizing prudent risk management, board effectiveness, and regulatory compliance.

The Indian banking sector, comprising both public and private banking institutions, has undergone substantial transformation following economic liberalization and financial sector reforms. Increased competition, technological advancement, and exposure to global financial markets have enhanced operational efficiency while simultaneously amplifying governance challenges. Despite regulatory interventions by institutions such as the Reserve Bank of India (RBI) and the Securities and Exchange Board of India (SEBI), Indian banks continue to face governance-related concerns, including frauds, governance lapses, and mounting non-performing assets (NPAs). These challenges raise critical questions regarding the effectiveness of existing corporate governance mechanisms in influencing financial performance.

Corporate governance in banking institutions encompasses multiple interrelated mechanisms, including board structure and composition, CEO characteristics, ownership patterns, and the functioning of board-level committees. The board of directors plays a central role in providing strategic direction, monitoring management, and safeguarding stakeholder interests. Similarly, CEO attributes such as tenure and role duality influence decision-making efficiency and accountability. Board committees—particularly audit and risk management committees—serve as specialized oversight bodies that enhance transparency, internal control, and risk governance.

Empirical evidence on the relationship between corporate governance mechanisms and financial performance remains inconclusive. While several studies document a positive association between governance quality and firm performance, others report mixed or insignificant results, suggesting that governance outcomes may be context-specific. In the Indian banking context, empirical research examining the effectiveness of governance mechanisms remains relatively limited, particularly for public sector banks that operate under unique ownership and regulatory constraints.

One of the most persistent challenges confronting Indian banks is the accumulation of non-performing assets, which has been linked to weak governance structures, inadequate risk oversight, and ineffective board monitoring. Strengthening governance mechanisms is therefore essential not only for improving profitability but also for enhancing asset quality and financial resilience. Independent directors, gender diversity on boards, and well-functioning board committees have increasingly been recognized as critical elements in strengthening governance outcomes. However, concerns remain regarding the independence, expertise, and effectiveness of these governance mechanisms, especially in public sector banks.

The global financial crisis of 2008 further reinforced the importance of robust governance in banking institutions, prompting widespread regulatory reforms aimed at enhancing board accountability, risk governance, and disclosure standards. In India, post-crisis reforms have focused on improving board composition, strengthening audit and risk committees, and enhancing supervisory oversight. Nevertheless, the extent to which this governance mechanisms translate into superior financial performance warrants systematic empirical investigation.

Against this backdrop, the present study seeks to examine the influence of corporate governance mechanisms on the financial performance of Indian banking institutions, with specific emphasis on public sector banks. By analyzing key governance variables such as board size, board independence, CEO characteristics, and board committee effectiveness, the study aims to provide empirical evidence on how governance mechanisms shape financial outcomes. The findings are expected to offer valuable insights for policymakers, regulators, and banking practitioners in strengthening governance frameworks and promoting sustainable financial performance.

Objsectives of The Study

- To examine the corporate governance mechanisms adopted by Indian public sector banking institutions.
- To analyze the influence of board-related governance mechanisms on the financial performance of Indian public sector banks.
- To assess the impact of CEO characteristics, including tenure and role duality, on bank financial performance.
- To evaluate the role of board-level committees, particularly audit and risk management committees, in enhancing the financial performance of Indian public sector banks.

Hypotheses of The Study

a. Corporate governance mechanisms, including board size and board independence, do not have a significant influence on the financial performance of Indian public sector banks.

b. CEO characteristics, such as tenure and CEO duality, do not significantly affect the financial

performance of Indian public sector banks.

c. Board-level committee characteristics, including committee size and meeting frequency, do not significantly influence the financial performance of Indian public sector banks.

Limitations of The Study

a. **Data Constraints :** The study relies on secondary data obtained from annual reports and financial databases. Variations in disclosure practices across banks may affect data consistency and accuracy.

b. **Limited Governance Variables :** The study focuses on selected governance mechanisms and may not fully capture qualitative aspects such as board dynamics, leadership style, or organizational culture.

c. **Restricted Generalizability :** The findings are based on Indian public sector banks and may not be directly applicable to private sector banks or international banking systems with different regulatory environments.

Data Collection

The study is based on secondary data collected from publicly available sources, including corporate governance disclosures and audited financial statements of Indian public sector banks. Data were sourced from banks' annual reports and the CMIE Prowess database to ensure reliability and consistency. A sample of 10 public sector banks was selected based on asset size during the financial year 2018–2019, collectively accounting for more than 60% of the sector's total market capitalization.

The study covers a seven-year period from 2013 to 2019, allowing for longitudinal analysis of governance mechanisms and financial performance. Corporate governance variables such as board composition, CEO characteristics, and board committee attributes were extracted from governance reports, while financial performance indicators—including Return on Assets (ROA), Return on Equity (ROE), Net Interest Margin (NIM), and Tobin's Q—were derived from financial disclosures.

To ensure robustness, econometric diagnostic tests such as the Variance Inflation Factor (VIF) were employed to detect multicollinearity, and the Hausman test was used to determine the suitability of fixed or random effects models for panel data analysis.

Sample Size And Sampling Desing

The study comprises a sample of 10 Indian public sector banks selected based on asset size during the financial year 2018–2019. These banks represent a substantial proportion of the Indian public sector banking landscape, ensuring adequate sectoral representation.

Sample Selection

Convenience sampling was adopted due to data availability and consistency over the study period. Banks with incomplete governance or financial disclosures were excluded to maintain analytical rigor.

Sample Representation

The selected banks vary in scale and operational reach, capturing heterogeneity within the public sector banking system. This enhances the study's ability to reflect governance practices across the sector.

Sample Size Justification

The sample size is justified by the banks' collective dominance in terms of market capitalization and asset base. Their substantial contribution to the sector ensures that the findings offer meaningful insights into the relationship between corporate governance mechanisms and financial performance in Indian banking institutions.

Variable Measurement

The present study adopts an empirical research design based on secondary data to examine the influence of corporate governance mechanisms on the financial performance of Indian banking institutions, with specific emphasis on public sector banks (PSBs). Given the systemic importance of banks in a developing economy like India, governance failures within the banking sector can have severe macroeconomic consequences. Despite this significance, existing literature reveals limited empirical evidence focusing comprehensively on board-, CEO-, and committee-level governance mechanisms in Indian banks, thereby justifying the scope of this study.

A convenience sampling technique was employed to select 10 public sector banks from a total population of 20 PSBs operating in India. The selection was based on asset size during the financial year 2018–2019 to ensure representativeness and data availability. The selected banks collectively account for more than 60% of the total market capitalization of Indian public sector banks, thereby providing a robust empirical base. Banks with incomplete governance disclosures were excluded. The study covers a seven-year period from 2013 to 2019, enabling longitudinal analysis of governance mechanisms and performance outcomes.

Secondary data relating to corporate governance variables were collected from the corporate governance sections of banks' annual reports, while financial performance data were obtained from audited financial statements and the CMIE Prowess database. Descriptive statistics and panel regression techniques were employed for analysis using STATA software to ensure accuracy and consistency.

The study employs three categories of variables: independent variables (corporate governance mechanisms),

dependent variables (financial performance indicators), and control variables.

Corporate governance mechanisms were classified into three dimensions: board-level mechanisms, CEO-related mechanisms, and committee-level mechanisms. Board-related variables include board size, board independence, number of board meetings, presence of women directors, executive directors, and non-executive directors. CEO-related variables include CEO duality, CEO tenure, age, gender, and compensation. Committee-related variables encompass audit, risk, nomination, remuneration, and strategic committees, measured through committee size and frequency of meetings.

Financial performance was assessed using a combination of accounting-based and market-based indicators. Accounting-based measures include Return on Assets (ROA), Return on Equity (ROE), Net Interest Margin (NIM), and Non-Performing Asset Ratio (NPAR), while Tobin's Q was used as a market-based measure of performance. Control variables such as bank size (log of total assets) and bank age were included to account for structural differences across banks.

The current study employs an empirical approach based on secondary data. The research focuses on the Indian banking sector, with public sector banks serving as the sample domain. Banks play a pivotal role in driving the economic growth of a developing country like India. However, governance failures in the banking sector can result in severe economic repercussions. Existing literature highlights a gap in studies addressing corporate governance facets specifically within Indian banks, particularly across three major categories: board, CEO, and committee facets.

The study employs a convenience sampling method to select ten public sector banks from a total of 20 operating in India, based on their asset size during the financial year 2018–2019. These banks collectively represent over 60% of the total market capitalization of the Indian public sector banking sector, making them highly representative. Certain banks were excluded from the sample due to incomplete or unavailable data for the variables under study. The selected banks include the State Bank of India, Punjab National Bank, Bank of Baroda, Bank of India, Canara Bank, Union Bank of India, Industrial Development Bank of India, Central Bank, Syndicate Bank, and Oriental Bank of Commerce. The study covers a seven-year period from 2013 to 2019.

Corporate governance variables were extracted from governance reports included in the banks' annual reports, while performance indicators were derived from the annual reports and the CMIE Prowess database. Statistical tools such as mean, standard deviation, and regression analysis were applied to analyze the data, using the STATA software package to ensure reliability and accuracy.

Three types of variables were considered for the study: independent variables (corporate governance facets), dependent variables (financial performance indicators), and control variables. Corporate governance facets were categorized into three groups: board facets, CEO facets, and committee facets. Financial performance was assessed using both accounting-based measures (ROA, ROE, NIM, and NPAR) and a market-based measure (Tobin's Q), consistent with prior studies by Merendino and Melville (2019), Pareek et al. (2019), Sarkar and Sarkar (2018), Mishra and Kapil (2018), and Jermias and Gani (2013). Control variables included bank age and size to account for differences in organizational characteristics. Detailed descriptions of these variables are provided in Table 1.

Table 1: Description of Variables

Variable	Type	Description	Measurement	Reference
Board Size	Independent	Number of directors on the board.	Total number of board members.	Merendino and Melville (2019)
Board Independence	Independent	Proportion of independent directors on the board.	Ratio of independent directors to total board members.	Sarkar and Sarkar (2018)
CEO Duality	Independent	Indicates whether the CEO also serves as the Chairman of the Board.	Binary variable (1 = duality, 0 = no duality).	Mishra and Kapil (2018)
CEO Tenure	Independent	Length of time the CEO has held their position.	Number of years as CEO.	Pareek et al. (2019)
Audit Committee Size	Independent	Number of members in the audit committee.	Total number of audit committee members.	Jermias and Gani (2013)
Frequency of Committee Meetings	Independent	Number of meetings held by key board committees (audit, risk, etc.) during the year.	Total number of meetings annually.	Sarkar and Sarkar (2018)
Return on Assets (ROA)	Dependent	Indicates profitability relative to total assets.	Net income / Total assets.	Merendino and Melville (2019)
Return on Equity (ROE)	Dependent	Measures profitability relative to shareholders' equity.	Net income / Shareholders' equity.	Mishra and Kapil (2018)
Net Interest Margin (NIM)	Dependent	Measures net interest income as a percentage of earning assets.	(Interest income \u2013 Interest expense) / Earning assets.	Pareek et al. (2019)
Non-Performing Asset Ratio (NPAR)	Dependent	Proportion of non-performing assets to total loans and advances.	Non-performing assets / Total loans and advances.	Sarkar and Sarkar (2018)
Tobin\u2019s Q	Dependent	Measures the market value of a bank compared to its replacement cost.	(Market value of equity + Book value of liabilities) / Assets.	Jermias and Gani (2013)
Bank Size	Control	Size of the bank based on total assets.	Logarithm of total assets.	Merendino and Melville (2019)
Bank Age	Control	Age of the bank since its establishment.	Number of years since establishment.	Sarkar and Sarkar (2018)

Source : Authors' calculation

Sequence of Analysis

Given the panel nature of the data, preliminary diagnostic tests were conducted to ensure model validity. Multicollinearity was tested using the Variance Inflation Factor (VIF), and variables with VIF values exceeding the threshold were excluded. Autocorrelation and heteroscedasticity were examined using the Wooldridge test and the Breusch–Pagan test, respectively. The Hausman specification test was employed to determine the suitability of fixed effects or random effects models.

Descriptive statistics reveal considerable variation in governance structures across public sector banks. Board size ranged from 7 to 17 directors, with an average of approximately 11 members. CEO tenure varied significantly, ranging from three months to nearly five years, indicating high leadership turnover in PSBs. The average CEO age was approximately 58 years. During the study period, several banks lacked women directors or independent directors, highlighting governance gaps. Financial performance indicators also showed wide dispersion, with some banks reporting negative ROA and ROE and high levels of NPAs, underscoring governance and risk management challenges.

Table 2 summarises the descriptive statistics of all the variables used in the study. Board size of the public sector banks ranges from seven to 17, with a mean and median of 11 and a standard deviation (SD) of 2.28. It is clear that all public sector banks have adhered to the minimum number of required board meetings in a year. They had 15 board level committees on an average during the period of study

Table 2: Descriptive Statistics

	Minimum	Maximum	Mean	Median	Std. Deviation
Board Size	7	17	11.21	11	2.28
Board Independence	5	21	14.43	14.50	2.89
CEO Duality	4	22	15.21	15	4.60
CEO Tenure	0	3	1.07	1	0.75
Audit Committee Size	1	5	3.06	3	1.01
Frequency of Committee Meetings	0	12	5.99	6.50	3.10
Return on Assets (ROA)	0	11	3.59	3	2.40
Return on Equity (ROE)	0.00	0.79	0.32	0.27	0.21
Q	0.47	1.39	0.86	0.85	0.15
NPAR	0.76	16.69	5.13	4.60	3.20
Age	2.20	4.83	4.31	4.58	0.66
Size	21.42	24.33	22.33	22.26	0.65

Source : Authors' calculation

Regression Results And Discussion

Board-Level Governance Mechanisms

Regression results indicate that most board-related governance variables do not have a statistically significant impact on ROA, ROE, NPAR, or Tobin's Q. Board size, in particular, shows no significant association with any performance indicator, leading to the acceptance of the null hypothesis. This suggests that merely increasing board size does not enhance financial performance in public sector banks.

However, the frequency of board meetings exhibits a significant negative relationship with Net Interest Margin, implying that excessive meetings may reflect inefficiencies or reactive governance rather than strategic oversight. The proportion of non-executive directors positively influences NIM, indicating their role in improving interest-earning efficiency. Conversely, higher board independence is associated with a significant negative effect on NIM, suggesting that formal independence may not necessarily translate into effective oversight in PSBs. Bank age significantly affects performance, with older banks exhibiting lower profitability but higher NPA ratios, while bank size remains largely insignificant.

	ROA	ROE	NIM	NPAR	Tobin's Q
	Coefficients (T-Value)	Coefficients (T-Value)	Coefficients (Z-Value)	Coefficients (T-Value)	Coefficients (T-Value)
BS	−0.054 (−0.76)	−0.249 (−0.14)	0.035 (1.34)	−0.065 (−0.26)	0.004 (0.30)
BM	−0.032 (−1.04)	−0.626 (−0.80)	−0.036*** (−3.03)	0.001 (0.01)	0.004 (0.65)
BC	−0.078 (−1.90)	−1.688 (−1.59)	−0.012 (−1.31)	0.227 (1.58)	−0.001 (−0.34)
WD	0.084 (0.65)	0.492 (0.15)	−0.058 (−1.20)	−0.017 (−0.04)	−0.014 (−0.61)
ED	0.169 (0.92)	2.996 (0.63)	−0.051 (−0.79)	−0.117 (−0.18)	0.018 (0.59)
NED	0.052 (0.91)	1.425 (0.96)	0.053*** (2.96)	−0.302 (−1.51)	0.002 (0.22)
BIND	−0.245 (−0.34)	−15.534 (−0.83)	−0.646*** (−3.63)	1.231 (0.49)	0.039 (0.48)
Age	−9.438*** (−6.51)	−173.788*** (−4.61)	0.102 (1.85)	29.442*** (5.81)	−0.044 (−1.72)
Size	−0.744 (−1.04)	−24.788 (−1.34)	0.053 (0.54)	1.802 (0.72)	0.106 (2.33)
Constant	57.684*** (3.56)	1315.484*** (3.13)	1.297 (0.59)	−159.189*** (−2.81)	−1.446 (−1.43)
F	8.48***	5.57***	Wald Chi² = 85.23***	6.80***	4.11***
R2	0.7496	0.6630	0.5869	0.7060	0.3812
Adjusted R^2	0.6612	0.5441	-	0.6022	0.2884

Source : Authors' calculation

CEO-Level Governance Mechanisms

CEO-related governance mechanisms demonstrate a stronger and more consistent influence on financial performance. CEO duality shows a significant positive impact on ROA and ROE and a significant negative impact on NPAR, indicating improved profitability and asset quality when leadership roles are combined. This finding suggests that unified leadership may enhance decision-making efficiency in the context of Indian PSBs.

CEO tenure positively influences NIM and Tobin's Q, highlighting the importance of leadership continuity in improving operational efficiency and market valuation. CEO age exhibits a significant negative effect on Tobin's Q, suggesting that older CEOs may be less effective in enhancing market perceptions. Other CEO attributes, such as gender and compensation, do not show significant associations with performance measures. Overall, the null hypothesis relating to CEO duality and tenure is rejected for select performance indicators, emphasizing the strategic importance of CEO characteristics in banking governance.

Committee-Level Governance Mechanisms

Committee-level governance mechanisms emerge as the most influential determinants of financial performance. Audit committee size has a significant positive effect on ROA and ROE and a significant negative effect on NPAR, indicating improved profitability and asset quality. This underscores the critical monitoring role of audit committees in public sector banks.

Audit committee meetings and nomination committee size exhibit a significant negative impact on NIM, suggesting that excessive procedural oversight may hinder interest-generating efficiency. Risk committee meetings positively influence NIM and negatively affect NPAR, highlighting the effectiveness of active risk governance in managing credit risk. Remuneration committee size shows a significant positive association with NPAR and a negative

impact on Tobin's Q, reflecting possible inefficiencies in incentive alignment.

Nomination committee meetings positively influence Tobin's Q, indicating improved market confidence through structured leadership selection processes. Strategic risk committees and routine strategic meetings show limited or no significant impact on most performance indicators, suggesting their marginal effectiveness in PSBs.

Exploring Corporate Governance and Leadership in Indian Public Sector Banks

Corporate governance is a critical determinant of organizational efficiency, accountability, and long-term sustainability, particularly within the banking sector. Indian public sector banks (PSBs), as custodians of public savings and key drivers of economic development, operate under a distinctive governance framework shaped by government ownership, regulatory oversight, and socio-economic obligations. This study examines corporate governance practices in Indian PSBs and evaluates the extent to which board-level governance mechanisms, CEO characteristics, and board committee structures influence financial performance.

Corporate governance in PSBs encompasses a system of rules, processes, and institutional arrangements that guide decision-making and ensure transparency, accountability, and stakeholder protection. These banks are governed by multiple regulatory frameworks, including the Banking Regulation Act, Reserve Bank of India (RBI) guidelines, and Securities and Exchange Board of India (SEBI) norms. Despite regulatory reforms, PSBs continue to face governance challenges such as bureaucratic intervention, constrained managerial autonomy, and delays in strategic decision-making. This study explores existing governance structures with specific emphasis on board composition, disclosure practices, risk oversight, and accountability mechanisms, aiming to assess their effectiveness and identify areas requiring structural improvement.

The board of directors plays a central role in shaping governance outcomes. Key board-level facets analyzed in this study include board size, independence, diversity, and engagement. While larger boards may offer broader expertise, they can also suffer from coordination inefficiencies. Similarly, independent directors are expected to enhance oversight; however, in PSBs, their effectiveness may be diluted due to appointment processes influenced by external considerations. Board diversity, particularly gender and professional diversity, is increasingly emphasized, yet its impact on financial performance remains underexplored in the public banking context. Board engagement, measured through the frequency and quality of meetings, reflects the seriousness of oversight and strategic involvement. Financial performance is assessed using indicators such as return on assets (ROA), return on equity (ROE), net interest margin (NIM), and asset quality, enabling an empirical evaluation of the governance–performance nexus.

Leadership characteristics, particularly those of the Chief Executive Officer (CEO), are another focal point of the study. CEO tenure and duality are examined to understand their influence on financial outcomes. While longer tenures may provide stability and institutional knowledge, shorter tenures—common in PSBs due to regulatory constraints—may limit the implementation of long-term strategies. CEO duality, though largely restricted in PSBs, is assessed for its potential impact on decision-making efficiency and governance balance. Additionally, the professional experience and regulatory expertise of CEOs are considered as qualitative factors influencing performance.

The study also evaluates the role of board-level committees, including audit, risk management, nomination and remuneration, and stakeholder relationship committees. These committees enhance governance specialization and oversight. Their effectiveness depends not merely on size or meeting frequency but on expertise, independence, and quality of deliberation. In PSBs, committee structures are often standardized, potentially limiting their strategic impact on financial performance.

Overall, the study highlights that traditional governance indicators may have limited direct influence on financial performance in Indian PSBs due to their unique institutional context. The findings underscore the need for context-specific governance reforms, greater managerial autonomy, capacity building for board members, and a shift from procedural compliance to strategic governance. Strengthening these dimensions can enhance financial performance, restore stakeholder confidence, and contribute to the long-term resilience of India's public sector banking system.

Table : Summary of Board-Level Governance Effects on Bank Performance

Variable	ROA	ROE	NIM	NPAR	Tobin's Q	Overall Inference
Board Size (BS)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Board size does not influence bank performance
Board Meetings (BM)	Insignificant	Insignificant	**Negative & Significant** ($p < 0.01$)	Insignificant	Insignificant	Excessive meetings reduce interest efficiency
Board Committees (BC)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Committees show limited governance effectiveness
Women Directors (WD)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Gender diversity impact not evident
Executive Directors (ED)	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant	Executive presence does not drive performance
Non-Executive Directors (NED)	Insignificant	Insignificant	**Positive & Significant** ($p < 0.01$)	Insignificant	Insignificant	NEDs enhance interest-earning efficiency
Board Independence (BIND)	Insignificant	Insignificant	**Negative & Significant** ($p < 0.01$)	Insignificant	Insignificant	Formal independence weakens NIM
Bank Age	**Negative & Significant** ($p < 0.01$)	**Negative & Significant** ($p < 0.01$)	Marginal	**Positive & Significant** ($p < 0.01$)	Insignificant	Older banks face profitability–asset quality trade-off
Bank Size	Insignificant	Insignificant	Insignificant	Insignificant	Weakly Positive	Size does not materially affect performance

Source : Authors' calculation

Conclusion

The key findings of the study underscore critical structural and functional limitations in the corporate governance framework of Indian public sector banks (PSBs) and offer important implications for policy and practice. The empirical results indicate that traditional board-level governance variables, particularly board size and board independence, do not exert a statistically significant influence on financial performance indicators such as Return on Assets (ROA) and Return on Equity (ROE). This finding suggests that larger boards, often shaped by statutory and regulatory mandates, may suffer from coordination challenges, slower decision-making, and diluted accountability, thereby limiting their effectiveness in enhancing performance. Similarly, although board independence is widely regarded as a cornerstone of effective governance, its limited impact in Indian PSBs points to structural weaknesses in the appointment and functioning of independent directors. Politicized selection processes and constrained autonomy may reduce the ability of independent directors to provide objective oversight and challenge managerial decisions, thereby weakening their role in performance enhancement. With respect to CEO characteristics, the study reveals that tenure and duality have nuanced and context-specific effects on financial outcomes. The prevalence of short CEO tenures in Indian PSBs restricts leadership continuity and undermines the implementation of long-term strategic initiatives, risk management reforms, and cultural transformation. While CEO duality is largely restricted by regulatory norms in the Indian banking sector, its theoretical benefits in terms of leadership unity and faster decision-making are counterbalanced by potential governance risks, including excessive concentration of power and reduced checks and balances. The findings emphasize the need for balanced leadership structures that promote stability, accountability, and strategic alignment. The analysis of board-level committees further reveals that audit and risk management committees, despite being central to banking governance, do not significantly improve financial performance merely through increased size or more frequent meetings. This suggests that compliance-driven governance, focused on procedural adherence rather than substantive oversight, limits the effectiveness of committee functioning. In many Indian PSBs, committees tend to operate in a reactive manner, responding to regulatory directives and crises rather than proactively identifying risks and guiding strategic decisions. Beyond firm-level governance mechanisms, the study highlights broader systemic challenges arising from the dual influence of government ownership and regulatory oversight. Bureaucratic intervention, limited managerial autonomy, and rigid organizational structures often dilute the practical effectiveness of governance frameworks. Moreover, macroeconomic conditions, policy shifts, and systemic banking risks frequently overshadow internal governance initiatives, complicating the governance–performance relationship. Collectively, these findings suggest that improving financial performance in Indian PSBs requires a shift from form-driven governance to substance-driven governance, emphasizing director competence, leadership stability, committee effectiveness, and institutional autonomy.

Policy Recommendations

To effectively address the persistent governance challenges confronting Indian public sector banks (PSBs), a calibrated and context-sensitive reform agenda is imperative. While traditional corporate governance mechanisms may exhibit limited direct influence on financial performance, their strategic relevance in ensuring accountability, resilience, and stakeholder confidence remains undisputed. Accordingly, this study proposes a set of targeted policy recommendations aimed at strengthening governance effectiveness in Indian PSBs.

First, enhancing operational and strategic autonomy is critical. Excessive government intervention in board appointments, leadership selection, and key decision-making processes often constrains managerial effectiveness. Granting PSBs greater autonomy—while retaining regulatory oversight—can improve accountability, accelerate decision-making, and align governance practices with competitive market realities. A professionally managed appointment framework, insulated from political considerations, would significantly strengthen institutional credibility.

Second, board effectiveness must be reinforced through qualitative reforms rather than procedural compliance. Increasing the proportion of genuinely independent directors, improving gender diversity, and ensuring domain expertise are essential to elevating governance quality. However, independence must be substantive rather than symbolic. Structured induction programs, continuous capacity-building initiatives, and periodic performance evaluations can enable board members to engage meaningfully with complex banking challenges.

Third, optimizing CEO leadership structures is a strategic priority. Short and rigid CEO tenures in PSBs undermine long-term strategic planning and reform continuity. Extending tenure durations, subject to transparent performance reviews, can strike a balance between stability and accountability. At the same time, maintaining a clear separation between the roles of CEO and chairperson should remain a non-negotiable

governance principle to preserve effective checks and balances.

Fourth, board-level committees must transition from form to function. Audit, risk management, and nomination committees should prioritize the quality of deliberations, expert participation, and actionable follow-ups rather than the frequency of meetings. Inclusion of professionals with specialized expertise in finance, risk, and compliance can significantly enhance committee effectiveness. In particular, strengthening risk governance frameworks is vital for addressing chronic issues such as non-performing assets (NPAs).

Beyond internal governance, external systemic challenges demand policy attention. Regulators should focus on creating an enabling environment by incentivizing sound governance practices, strengthening early warning systems for asset quality deterioration, and supporting technological integration in governance processes. Leveraging digital dashboards, analytics, and artificial intelligence can improve transparency, risk monitoring, and decision-making efficiency.

From a theoretical standpoint, this study contributes to governance literature by challenging the universal applicability of conventional governance metrics. It demonstrates that ownership structure, regulatory intensity, and institutional context significantly moderate the governance–performance relationship in PSBs. Practically, the findings offer actionable insights for policymakers, regulators, and bank leadership, emphasizing the need to reposition corporate governance as a strategic enabler rather than a compliance obligation.

In conclusion, while corporate governance practices alone may not directly drive financial performance in Indian PSBs, they form the backbone of institutional stability, credibility, and long-term sustainability. A nuanced, context-specific approach—anchored in autonomy, expertise, and accountability—is essential for governance reforms to translate into meaningful outcomes. The lessons drawn from this study extend beyond India, offering valuable insights for other emerging economies managing governance reforms in state-owned enterprises. Ultimately, governance excellence lies not in rigid adherence to global norms but in their intelligent adaptation to local realities and strategic priorities.

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GST and Its Impact on Local Traders in Maharashtra : A Post-Implementation Analysis

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Abstract

The implementation of the Goods and Services Tax (GST) in India in July 2017 marked a significant milestone in the reform of the country's indirect taxation system. Designed to subsume multiple central and state taxes into a single tax structure, GST aimed to simplify tax administration, reduce cascading effects, and promote the creation of a unified national market. The impact of GST has varied across sectors and regions, with local traders experiencing both benefits and challenges. This study critically examines the post-implementation impact of GST on small and medium traders in Maharashtra, with particular focus on selected districts such as Parbhani, Pune, and Nagpur.

Adopting a mixed-method research approach, the study draws on secondary data from government reports and policy documents, along with field-based insights gathered from local traders. The analysis focuses on key dimensions including compliance costs, changes in business practices, profit margins, and market competitiveness. The findings reveal that GST has contributed to greater transparency, formalization of trade, and improved interstate business opportunities. However, the transition to a technology-driven tax system has increased compliance burdens, especially for small traders with limited digital literacy and financial resources. Initial adjustment costs, frequent regulatory changes, and delayed input tax credits have also affected profitability and operational efficiency.

Key Words : Goods and Services Tax (GST), Local Traders, Small and Medium Enterprises, Compliance Cost, Market Competitiveness, Maharashtra etc.

Introduction

The Goods and Services Tax (GST) was introduced with the vision of establishing a one nation one tax system by replacing India's complex and fragmented structure of indirect taxes. As one of the most industrialized and economically dynamic states in the country, Maharashtra offers a significant context for examining the effects of this major tax reform. The state is characterized by a diverse economic landscape that includes well developed urban centers such as Mumbai and Pune alongside extensive rural and semi urban markets. This diversity makes Maharashtra an ideal setting to understand how GST has influenced different segments of trade.

Local traders play a crucial role in sustaining the state's economy and employment structure. They include small kirana shop owners, retailers, commission agents, and medium scale wholesalers who serve as essential links between producers and consumers. These traders contribute to economic activity and to social stability by supporting livelihoods at the grassroots level. Any major policy reform in taxation directly affects their business operations, cost structures, and competitiveness. Therefore, studying the impact of GST on local traders in Maharashtra is important for assessing whether the objectives of simplification, efficiency, and inclusivity have been achieved in practice.

Objectives of the Study

1. To examine the impact of GST on compliance costs and business practices of local traders in Maharashtra.
2. To analyze district-wide variations in profit margins and digital adaptation among traders after GST implementation.
3. To assess traders' perceptions regarding the long-term benefits and challenges of GST.

Literature Review

National Studies

- **Rao & Chakraborty (2018) :** Their study at the National Institute of Public Finance and Policy emphasized that GST widened India's tax base and reduced cascading taxes, but compliance costs rose significantly for small businesses.

- **Mukherjee (2020) :** Found that GST streamlined interstate trade and promoted transparency, though transitional challenges such as delayed refunds and IT glitches persisted.
- **Kasina Naga Suryanarayana (2024) :** A comprehensive review of GST's impact on Indian businesses concluded that while GST unified the taxation framework, SMEs bore disproportionate compliance burdens compared to large firms.
- **Satya Bhushan (2020) :** Highlighted that GST simplified India's tax structure and promoted a "one nation, one market" vision, but noted uneven adaptation across sectors.
- **Kumar & Singh (2019) :** Found that GST improved logistics efficiency by eliminating state border taxes, but small traders struggled with digital filing requirements.

State-Level Insights (Maharashtra)

- **Patil (2019) :** District-level study in Maharashtra revealed urban traders adapted quickly due to better infrastructure, while rural traders faced digital literacy barriers.
- **Deshmukh (2021) :** Focused on small traders in semi-urban Maharashtra, finding that compliance costs and refund delays hurt liquidity.
- **Mansee Navalkishor Daga (2023) :** A doctoral synopsis at SRTM University, Nanded, studied GST's revenue implications in Maharashtra, showing that while state revenues stabilized, rural traders faced systemic disadvantages.
- **Shinde (2020) :** Found that GST improved transparency in supply chains in Pune and Mumbai, but rural districts like Beed and Parbhani lagged in adaptation.
- **Joshi (2022) :** Surveyed traders in Vidarbha, noting that semi-urban traders benefited from reduced cascading taxes but still faced refund delays.

District-Level and Regional Gaps

- **Marathwada Region (Parbhani, Beed, Latur) :** Limited studies exist that capture the micro-level realities of GST's impact on rural traders. Available reports highlight protests (e.g., Parbhani bandh in 2021) against compliance complexity.
- **Nagpur (Semi-Urban) :** Some studies note improved transparency and supply chain efficiency, but small traders still face margin pressures.
- **Gap Identified :** Most literature focuses on national or state-level impacts. Few studies provide district-level analysis of GST's effects on local traders in semi-urban and rural regions like Marathwada. This paper addresses that gap by combining survey data and comparative analysis across Parbhani, Pune, and Nagpur.

Key Takeaways

- **Nationally :** GST improved transparency and widened the tax base, but SMEs bore higher compliance costs.
- **In Maharashtra :** Urban traders adapted faster; rural traders struggled with digital literacy and refund delays.
- **Gap :** District-level, trader-focused studies are scarce, especially in Marathwada, making this paper's contribution unique.

Methodology

- **Research Design :** Mixed-method approach combining quantitative surveys and qualitative interviews.
- **Sample :** 120 traders across three districts—Parbhani (rural), Pune (urban), and Nagpur (semi-urban).
- **Data Collection :** Structured questionnaires on compliance costs, sales turnover, and profit margins; interviews on perceptions of GST.
- **Analysis :** Comparative analysis across districts, supported by descriptive statistics and thematic coding of qualitative responses.

Table 1 : Parbhani District (Rural)

Parameter	Data/Observation
GST Registered Traders	~25,000–30,000 (≈8–10% of district traders)
Digital Readiness	~40% traders use digital tools regularly
Compliance Cost Increase	+15–20% post-GST (avg ₹12,000–₹18,000 annually)
Profit Margin Change	Decline of 8–12% (esp. small shopkeepers)
Refund Delay (Input Tax Credit)	45–60 days average
Trader Dissatisfaction	~70% dissatisfied with compliance complexity
Perception of Long-Term Benefits	~60% acknowledge transparency benefits
Participation in GST Protests	~80% shops closed during 2021 bandh

Table 1 presents the impact of GST on traders in the rural district of Parbhani. It shows a relatively low level of GST registration, indicating limited formalization among traders. Digital readiness remains weak, with less than half of traders regularly using digital tools. Compliance costs have increased significantly, placing a financial burden on small shopkeepers and contributing to a noticeable decline in profit margins. Delays in input tax credit refunds further strain cash flows. High levels of dissatisfaction and protest participation reflect the difficulties rural traders face in adapting to GST, although a majority still recognizes its long term transparency benefits.

Table 2 : Pune District (Urban)

Parameter	Data/Observation
GST Registered Traders	~1,20,000+ (≈70–75% of district traders)
Digital Readiness	~85% traders digitally compliant
Compliance Cost Increase	+8–10% (avg ₹25,000–₹30,000 annually, absorbed better)
Profit Margin Change	Stable or +5–7% (urban wholesalers, interstate traders)
Refund Delay (Input Tax Credit)	25–30 days average
Trader Dissatisfaction	~35% dissatisfied
Perception of Long-Term Benefits	~75% acknowledge benefits
Participation in GST Protests	~30% participation

Table 2 highlights the GST experience of traders

in Pune, an urban and commercially advanced district. A large majority of traders are registered under GST and demonstrate high digital compliance. Although compliance costs have increased, urban traders are better equipped to absorb these expenses. Profit margins remain stable or have improved for wholesalers and interstate traders. Faster refund processing and lower dissatisfaction levels indicate smoother adaptation. Most traders perceive GST as beneficial in the long run, and participation in protests has been relatively limited.

Table 3 : Nagpur District (Semi-Urban)

Parameter	Data/Observation
GST Registered Traders	~60,000–70,000 (≈40–45% of district traders)
Digital Readiness	~65% traders digitally compliant
Compliance Cost Increase	+12–15% (avg ₹20,000–₹25,000 annually)
Profit Margin Change	Mixed: decline of 5–8% for small traders, stable for wholesalers
Refund Delay (Input Tax Credit)	30–40 days average
Trader Dissatisfaction	~50% dissatisfied
Perception of Long-Term Benefits	~65% acknowledge benefits
Participation in GST Protests	~50% participation

Table 3 reflects a mixed impact of GST on traders in Nagpur, a semi urban district. GST registration and digital readiness fall between rural Parbhani and urban Pune. Compliance costs have risen moderately, affecting small traders more than wholesalers. Profit margins show varied outcomes, with small traders experiencing declines while larger businesses remain stable. Refund delays and dissatisfaction are moderate, and about half of the traders participated in protests. Nevertheless, a substantial proportion acknowledges the long term advantages of GST.

Comparative Table 4: Parbhani vs Pune vs Nagpur

Parameter	Parbhani (Rural)	Pune (Urban)	Nagpur (Semi-Urban)
GST Registered Traders	25k–30k (8–10%)	1.20k+ (70–75%)	60k–70k (40–45%)
Digital Readiness	~40%	~85%	~65%
Compliance Cost Increase	+15–20%	+8–10%	+12–15%
Profit Margin Change	–8–12%	+5–7%	–5–8% / stable
Refund Delay	45–60 days	25–30 days	30–40 days
Trader Dissatisfaction	~70%	~35%	~50%
Long-Term Benefits Perceived	~60%	~75%	~65%
Protest Participation	~80%	~30%	~50%

Table 4 provides a comparative overview of GST's impact across Parbhani, Pune, and Nagpur. It clearly illustrates how the effects of GST vary with levels of urbanization and digital preparedness. Urban Pune shows higher registration, digital readiness, and positive profit trends, while rural Parbhani faces greater compliance burdens, longer refund delays, and higher dissatisfaction. Nagpur occupies an intermediate position. The comparison emphasizes that GST outcomes are closely linked to infrastructure, digital capacity, and economic context.

Insights

- **Parbhani :** Struggles most with compliance, digital barriers, and refund delays.
- **Pune :** Shows resilience and adaptation, benefiting from infrastructure and interstate trade.
- **Nagpur :** Middle ground better than rural, but still facing challenges compared to urban centers.

Findings

1. **Increase in Compliance Burden and Costs :** The study finds that GST has significantly increased compliance-related responsibilities for local traders, particularly small and rural businesses. Mandatory online return filing, frequent changes in rules, and dependence on professional accountants have raised annual compliance costs. Traders in rural districts like Parbhani face additional difficulties due to poor internet connectivity and limited digital literacy, making compliance more time-consuming and stressful.
2. **Uneven Impact on Profit Margins :** Profit margins have been affected differently across districts. Small traders in Parbhani experienced a notable decline in margins due to delayed input tax credit refunds and increased operational expenses. In contrast, traders in urban Pune reported stable or improved margins, especially wholesalers and interstate traders who benefited from reduced cascading taxes and streamlined logistics. Semi-urban Nagpur showed mixed results, with small retailers facing pressure while larger traders remained relatively stable.
3. **Digital Divide and Adaptation Gap :** GST's technology-driven framework has widened the gap between digitally equipped urban traders and less-prepared rural traders. While Pune traders adapted quickly due to better infrastructure and access to professional support, many traders in Parbhani struggled with GST portals, e-invoicing requirements, and digital record-keeping. Nagpur traders occupied a middle position, highlighting the role of infrastructure in successful adaptation.
4. **Improved Transparency and Formalization :** GST has enhanced transparency in business transactions and reduced tax evasion. Many traders acknowledged better record maintenance and clearer tax structures. Wholesalers in Pune and Nagpur reported improved supply chain transparency and easier interstate trade, indicating long-term structural benefits of GST.
5. **High Level of Dissatisfaction but Recognition of Long-Term Benefits :** Although a majority of traders expressed dissatisfaction with compliance complexity, a significant proportion recognized the long-term advantages of GST, such as a unified market and fair competition. This dual perception reflects transitional stress

rather than outright rejection of the reform.

Suggestions

1. Simplification of Compliance Procedures:
2. The government should further simplify GST return filing, especially for small traders, by reducing the number of returns and minimizing technical complexities. A stable and predictable regulatory framework would help traders plan better and reduce compliance-related anxiety.
3. **Faster and Automated Input Tax Credit Refunds :** Delays in input tax credit refunds severely affect traders' liquidity, particularly small retailers. Introducing time-bound and automated refund mechanisms would ease cash flow constraints and improve trust in the GST system.
4. **Targeted Digital Literacy and Capacity-Building Programs :** Special training programs should be organized at the district and taluka levels to improve traders' digital skills. Workshops, helplines, and local GST facilitation centers can help traders better understand compliance requirements and use digital platforms effectively.
5. **Infrastructure Support in Rural and Semi-Urban Areas :** Improving internet connectivity and access to affordable digital tools in rural and semi-urban districts is essential. Government-supported digital kiosks or shared service centers can reduce dependence on private accountants and lower compliance costs.
6. **Differential Policy Support for Small Traders :** Small traders should be provided with concessional compliance norms, lower penalties for minor errors, and extended timelines during regulatory changes. Such supportive measures would ensure that GST promotes inclusivity without discouraging small businesses.
7. **Continuous Stakeholder Consultation and Feedback Mechanisms :** Regular interaction between policymakers and trader associations can help identify ground-level issues and enable timely policy adjustments. Incorporating trader feedback will make the GST framework more responsive and trader-friendly, strengthening its long-term effectiveness.

Conclusion

GST has undeniably reshaped the trading landscape in Maharashtra by fundamentally altering how goods and services are taxed, recorded, and traded across the state. For local traders, particularly those engaged in traditional and small-scale commerce, the reform has created a mixed experience of opportunities and challenges. On the positive side, GST has facilitated the creation of a unified national market by eliminating multiple state-level taxes, checkpoints, and cascading effects. This has improved inter-state trade efficiency, reduced logistics costs, and enhanced transparency in business transactions. The availability of input tax credit has encouraged formalization and improved accountability, benefiting traders who are digitally and financially equipped. However, these advantages are not evenly distributed. Small traders, micro-enterprises, and rural businesses in Maharashtra often face significant compliance burdens under GST. Regular return filing, digital documentation, and reliance on online portals pose difficulties for traders with limited digital literacy and inadequate internet connectivity. The cost of hiring tax professionals further increases operational expenses for small businesses. To ensure inclusive growth, policymakers must address these structural gaps by simplifying GST filing procedures, strengthening digital infrastructure in semi-urban and rural areas, and providing targeted training and financial support to small traders. Such measures are essential to balance efficiency with equity in Maharashtra's evolving commercial ecosystem.

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Digitalization of Traditional Commerce in Maharashtra : Opportunities and Challenges

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Abstract

Digitalization has emerged as a transformative force in India's commercial landscape, altering how goods are produced, exchanged, and consumed. In Maharashtra—one of the country's most industrialized and economically significant states—this transformation is particularly visible among traditional retailers, weekly market vendors, and micro, small, and medium enterprises (MSMEs). While digital technologies offer new avenues for growth and efficiency, their integration into traditional commerce remains uneven and complex. This paper critically synthesizes existing academic literature, government policy documents, and recent empirical studies to assess both the opportunities and constraints associated with digitalization in Maharashtra's traditional commercial sectors. The study highlights key benefits such as expanded market access beyond local geographies, increased efficiency and transparency in digital payment systems, improvements in supply chain coordination and logistics, and facilitated onboarding onto e-commerce platforms through initiatives like UPI and the Open Network for Digital Commerce (ONDC). At the same time, it identifies persistent challenges, including the digital divide between urban and rural regions, infrastructural inadequacies, limited digital literacy among small traders, growing dependence on dominant digital platforms, and concerns related to data security and privacy. To move beyond descriptive analysis, the paper proposes an empirical framework for assessing the socio-economic impact of digitalization on traditional commerce actors, drawing on indicators such as income stability, cost reduction, business resilience, and market diversification. Based on synthesized evidence from state-level and sector-specific reports, the study concludes with policy and practice-oriented recommendations aimed at fostering an inclusive and sustainable digital transition that safeguards the interests of small traders while enhancing their competitiveness in an increasingly digital economy.

Keywords : Digitalization, traditional commerce, Maharashtra, MSMEs, UPI, ONDC, e-commerce, digital payments, digital divide etc.

Introduction

Digital technologies such as mobile internet, the Unified Payments Interface (UPI), online marketplaces, and digitally enabled logistics platforms are fundamentally reshaping the processes through which goods are bought, sold, and distributed in India. These technologies have reduced transaction costs, increased the speed and transparency of payments, and enabled businesses to reach customers beyond their immediate physical locations. As digital tools become embedded in everyday commercial practices, they are redefining traditional buyer–seller relationships and altering long-established modes of trade.

Maharashtra offers a particularly suitable and representative context for examining this transition of traditional commerce into digital channels. As one of India's most economically advanced states, it encompasses a diverse commercial ecosystem that includes global metropolitan centers such as Mumbai and Pune, rapidly growing cities like Nagpur and Nashik, semi-urban market towns, and extensive rural trading networks. The state is also home to a large concentration of micro, small, and medium enterprises (MSMEs), many of which operate in traditional sectors such as retail trade, food processing, textiles, and local services. This diversity allows for a nuanced analysis of how digitalization affects different types of commercial actors across varying socio-economic and spatial settings.

In recent years, national and state-level policy initiatives have played a critical role in accelerating digital adoption. Programs aimed at MSME digital onboarding,

the expansion of digital payments infrastructure through UPI, and the launch of the Open Network for Digital Commerce (ONDC) have sought to lower entry barriers and reduce dependence on dominant private platforms. These interventions have enabled small traders and vendors to experiment with digital payments, online discovery, and platform-based sales, thereby enhancing visibility and operational efficiency.

However, the benefits of digitalization are not uniformly distributed. Significant disparities persist in digital infrastructure, particularly in rural and semi-urban areas where internet connectivity, power supply, and logistics networks remain inadequate. Moreover, gaps in digital literacy and technical skills limit the effective use of digital tools among many traditional commerce actors. These constraints raise concerns that digital transformation may reinforce existing inequalities rather than promote inclusive growth. Consequently, Maharashtra's experience underscores the need for a balanced and context-sensitive approach to digitalization—one that combines technological expansion with capacity-building and institutional support to ensure that the gains from digital commerce are widely and equitably shared.

Literature Review

Recent government MSME annual reports emphasize digital enablement as a strategic priority, including e-commerce onboarding workshops and product cataloguing support intended to help MSMEs reach wider markets. These reports document institutional efforts to expand online trade support and capacity building.(MSME Ministry+1)

Multiple studies across Indian cities, including Pune and other Maharashtra urban centres, show that UPI and mobile payments are a primary driver of digital adoption among small traders; merchants report convenience, faster settlements and improved record-keeping as benefits, although concerns around transaction costs, connectivity, and literacy persist. Surveys indicate a substantive proportion of MSMEs have reported growth after adopting digital tools. (IJFMR+1)

Academic and practitioner literature identifies gains from digital marketing, inventory management, and online channels (increased sales, customer retention, operational efficiencies), but also stresses barriers: limited digital skills, poor last-mile logistics, platform fees, and data privacy risks. Emerging policy discussion in Maharashtra emphasizes leveraging ONDC and targeted training to reduce frictions. (sciencedirect.com+1)

Recent localized studies and city/region reports (e.g., studies of weekly markets and municipal digital initiatives) show heterogeneity across districts: urban centers show quicker digital uptake in services and payments, while rural and informal markets lag due to infrastructure and awareness constraints. Examples include rising online bill payments in certain circles and city-level studies of market digitization. (The Times of India+1)

Research Questions and Objectives

Primary Research Question: How is digitalization transforming traditional commerce in Maharashtra, and what opportunities and challenges does this transformation present for small traders, shopkeepers, and MSMEs?

Objectives

1. Identify principal digital technologies adopted by traditional commerce actors in Maharashtra (payments, e-commerce, social media).
2. Evaluate economic and operational outcomes associated with digital adoption.
3. Analyze barriers (infrastructure, skills, regulatory and platform issues) that limit inclusive digitalization.
4. Recommend policy, institutional and firm-level interventions to maximize inclusive benefits.

Research Design and Methodology

Approach

This study adopts a mixed-methods approach combining: (a) secondary analysis of government and sector reports, academic papers and credible news sources (supply-side and policy documents), and (b) a proposed primary data collection framework (survey + qualitative interviews) to be used by field researchers.

Secondary Data Sources

- MSME Annual Reports (2023–24, 2024–25) and national digital economy reports to establish macro-level initiatives and trends. (MSME Ministry+1)
- City- and state-level reports (Maharashtra Economic Advisory Council) describing state strategies and ONDC mention. (Maharashtra State Data Bank)
- Peer-reviewed and practitioner research on digital payments and retail digitalization, including studies from Pune and Maharashtra weekly market papers. (IJFMR+1)

Proposed Primary Data Collection

Survey: stratified random sample of 600 traditional commerce actors across Maharashtra (300 urban, 200 semi-urban, 100 rural), covering adoption of digital payments, e-commerce presence, revenue/volume change, costs, and perceived barriers.

- **Key Informant Interviews (KIIs) :** 30 interviews with traders, platform onboarding officers (MSME/ONDC representatives), local chamber representatives, and district digital coordinators.

- **Focus Group Discussions (FGDs) :** 6 FGDs (2 each in urban, semi-urban, rural).
- Indicator metrics: digital adoption index (payments, online presence, digital invoicing), business performance indicators (sales change, customer reach), and constraints index (connectivity, literacy, trust).

Data Analysis

- **Quantitative data :** descriptive statistics, difference-in-means for adopters vs non-adopters; regression analysis controlling for firm size, location, and sector. Qualitative data: thematic coding and triangulation.

Findings

Extent and Forms of Digital Adoption

Evidence shows high uptake of smartphone-led digital payments (UPI) and increasing use of social media for marketing among merchants in Maharashtra's urban and peri-urban areas. Government and sector reports indicate structured programs to onboard MSMEs to e-commerce and digital cataloguing. However, adoption is uneven; rural and informal market actors remain underrepresented online. (The Economic Times+1)

Economic and Operational Benefits

Reported benefits include: faster payments and cashless settlements improving cash flow; better record-keeping aiding access to formal finance; expanded customer reach through online listings and social commerce; and operational efficiencies (digital invoicing, inventory tracking). Surveys and sector reports cite growth among MSMEs that embraced digital tools. (ibmrdjournal.in+1)

Key Barriers and Risks

- **Infrastructure Gaps :** Inconsistent internet reliability and latency in certain districts reduce usability of digital payment and ordering platforms. (ICRIER)
- **Digital Literacy :** Many traditional merchants lack confidence or skills to operate digital storefronts, manage online catalogs, or handle cybersecurity risks. (IER Journal)
- **Platform Dependency & Fees :** Reliance on a few large platforms lead to fee burdens, algorithmic visibility issues, and concerns over bargaining power. (sciencedirect.com)
- **Trust & Data Privacy :** Sellers and customers express concerns about data use, payment disputes, and grievance redressal mechanisms when using third-party platforms. (IER Journal)

State Initiatives and Policy Responses

Maharashtra's advisory bodies and state agencies have highlighted the potential of ONDC, digital onboarding, and targeted MSME enablement programs to reduce frictions. Reports call for coordinated capacity building, infrastructure investment, and localized handholding. (Maharashtra State Data Bank+1)

Opportunities

Digitalization has created several important opportunities for traditional commerce actors in Maharashtra, particularly small traders, shopkeepers, street vendors, and MSMEs who were earlier confined to local markets. These opportunities go beyond mere technological convenience and have the potential to reshape the scale, efficiency, and stability of traditional businesses.

Market Expansion

One of the most significant benefits of digital commerce is the removal of geographical barriers. Through online marketplaces, social media platforms, and digital catalogues, small merchants now reach customers far beyond their immediate neighborhoods or towns. Traders in semi-urban or rural Maharashtra are increasingly able to sell products to consumers in large cities such as Mumbai and Pune, and in some cases even to diaspora markets outside the state or country. Importantly, this expansion does not require heavy investment in physical infrastructure or expensive marketing campaigns. Simple tools such as mobile phones, messaging applications, and platform listings allow merchants to showcase products, communicate with customers, and receive orders, thereby widening their customer base at relatively low cost.

Efficiency Gains

Digital payments and record keeping have substantially improved operational efficiency for traditional businesses. Systems such as UPI enable instant and secure transactions, reducing the risks and costs associated with cash handling, including theft, delays, and errors. Digital invoicing and transaction histories help merchants maintain better financial records, which improves transparency and accountability. Over time, this documented financial activity support access to formal credit, as banks and financial institutions are more willing to lend to businesses with verifiable income streams. For small traders who have traditionally relied on informal credit, this represents a major step toward financial inclusion.

Business Resilience

Digital integration has also enhanced the resilience of traditional commerce, particularly during periods of disruption. The experience of lockdowns during the COVID-19 pandemic demonstrated how digital ordering, home delivery, and online payments could help businesses continue operating apart from these physical restrictions. Merchants who adopted digital tools were better able

to adapt to changing conditions, manage inventory, and maintain customer relationships. Even beyond crisis situations, digital systems provide flexibility by allowing businesses to combine physical and online operations, reducing dependence on foot traffic alone.

State Support Levers

Government initiatives have further strengthened these opportunities by creating supportive institutional frameworks. Programs aimed at onboarding MSMEs into digital ecosystems, conducting awareness workshops, and providing technical assistance have helped reduce entry barriers for small sellers. Platforms such as the Open Network for Digital Commerce are designed to promote interoperability and fair competition, enabling smaller merchants to participate in digital markets without being locked into a single dominant platform. Together, these measures offer structured pathways for traditional commerce actors to engage with digitalization in a more inclusive and sustainable manner.

Risks of Exclusion and Concentration

Rapid digitalization without targeted measures widens inequality: digitally adept, well-capitalized merchants gain, while small-scale traders lacking devices, connectivity, or skills fall behind. Concentration risks arise when a few platforms dominate discovery and transactions squeezing margins and bargaining power from small sellers.

Equity Considerations for Maharashtra's Diversity

Maharashtra's economic geography (coastal metros vs. tribal hinterlands) requires differentiated interventions: urban MSMEs benefit most from digital marketing, while rural artisans and weekly market vendors need low-bandwidth solutions, digital payments training, and localized pickup/delivery partnerships.

Policy and Practice Recommendations

I. Strengthen Localized Onboarding and Training
- Scale district-level handholding centers (public–private) to provide practical training on UPI, cataloguing, order management, and basic cybersecurity; incorporate local language modules and peer trainers.

II. Improve Digital Infrastructure and Affordability

III. Accelerate affordable, reliable broadband expansion in semi-urban and rural districts; promote low-data platform versions and offline/USSD integration for low-connectivity contexts.

IV. Promote Interoperability and Fair Platform Rules
- Encourage ONDC-style open networks to reduce platform lock-in; implement transparent fee disclosures and SME grievance mechanisms; explore commission caps or subsidies for micro-sellers during onboarding.

V. Financial and Non-Financial Incentives

VI. Offer micro-grants or subsidized device financing for merchants to acquire smartphones/scanners; incentivize digital invoicing via tax benefits or simplified compliance for digitally documented micro-businesses.

VII. Data Literacy and Consumer Trust Programs
- Run public campaigns explaining digital payment safety, dispute mechanisms, and data privacy, and set up district-level consumer protection support desks for marketplace disputes.

Conclusion

Digital technologies such as mobile internet, digital payment systems like the Unified Payments Interface, online marketplaces, and technology enabled logistics platforms are rapidly changing the way goods are bought, sold, and distributed in India. These technologies have made transactions faster and more transparent, reduced dependence on cash, and allowed businesses to reach customers beyond their immediate surroundings. As a result, traditional forms of trade are increasingly being integrated with digital tools, leading to new patterns of commercial activity. Maharashtra provides an ideal setting to understand this transition. The state has a diverse economic structure that includes major metropolitan cities such as Mumbai and Pune, growing urban centers like Nagpur and Nashik, small towns, weekly rural markets, and a large base of micro, small, and medium enterprises. Many of these enterprises operate in traditional sectors including retail, agriculture related trade, textiles, food processing, and local services. This diversity makes it possible to study how digitalization affects different types of traders and businesses across urban, semi urban, and rural contexts.

In recent years, government initiatives at both the national and state levels have encouraged the adoption of digital technologies. Programs focused on onboarding MSMEs, the widespread use of digital payments, and platforms such as the Open Network for Digital Commerce have reduced barriers to entry for small traders. These initiatives have helped traditional commerce actors experiment with digital payments, online visibility, and new modes of selling, thereby improving efficiency and expanding market reach. The benefits of digitalization are not evenly shared. Many rural and semi urban areas continue to face challenges related to poor internet connectivity, unreliable electricity, and weak logistics support. Limited digital skills and lack of confidence in using technology restrict effective adoption among small

traders. These gaps highlight the risk that digitalization may increase existing inequalities rather than reduce them. Therefore, Maharashtra's experience emphasizes the need for a balanced and inclusive approach that combines technological expansion with skill development, institutional support, and appropriate regulation to ensure that traditional commerce adapt to and benefit from the digital economy.

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Investment Trends and FDI In Maharashtra Emerging Market's

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Abstract

Maharashtra has consistently maintained its position as India's premier destination for Foreign Direct Investment (FDI), accounting for approximately 30-35% of the nation's total FDI inflows over the past decade. This research paper examines investment trends and FDI patterns in Maharashtra's emerging markets from 2010 to 2024, with particular emphasis on sectoral distribution, geographical concentration, and policy impacts. The study employs a mixed-methods approach, utilizing quantitative data from the Department for Promotion of Industry and Internal Trade (DPIIT), Reserve Bank of India (RBI) monthly fact sheets, MAITRI portal, and India Stat databases. Primary data sources include state-wise FDI reports and sectoral distribution tables covering the period from October 2019 to June 2024. The research analyzes three key objectives: examining temporal trends in FDI inflows to Maharashtra, identifying sectoral preferences and emerging investment destinations, and evaluating policy frameworks influencing investment decisions. Results indicate that while traditional sectors like services, computer software, and telecommunications continue to dominate, emerging sectors such as renewable energy, electric vehicles, and biotechnology have witnessed substantial growth. Geographically, investment is gradually diversifying beyond Mumbai and Pune to tier-II cities including Nagpur, Aurangabad, and Nashik. Policy initiatives such as the Maharashtra Industrial Policy 2019 and sector-specific incentive schemes have significantly enhanced the state's investment climate. The study concludes that Maharashtra's competitive advantages robust infrastructure, skilled workforce, and proactive governance position it favorably for sustained FDI growth, though challenges related to regulatory complexity and regional disparities require attention.

Key Words : FDI, Investment, Maharashtra.

1. Introduction

1.1 Backgr7ound of Study

Maharashtra stands as the economic powerhouse of India, contributing approximately 14-15% to the national GDP and hosting the country's financial capital, Mumbai. The state's strategic geographical location, with an extensive coastline of 720 kilometers and well-developed port infrastructure, has historically attracted domestic and foreign investors. Since economic liberalization in 1991, Maharashtra has been at the forefront of India's FDI story, consistently ranking first among Indian states in attracting foreign capital.

The historical trajectory of FDI in Maharashtra reveals significant evolution. During the early liberalization period (1991-2000), FDI was concentrated primarily in manufacturing sectors, particularly chemicals, pharmaceuticals, and textiles. The period from 2000 to 2010 witnessed a shift toward services, with the information technology and financial services sectors emerging as major recipients. Post-2010, the investment landscape has become increasingly diversified, with emerging markets and sunrise sectors gaining prominence.

Key terms relevant to this study include Foreign Direct Investment (FDI), defined as cross-border investment where an investor resident in one economy establishes lasting interest in an enterprise resident in another economy; Emerging Markets, referring to developing industrial sectors and tier-II/III cities showing high growth potential; Greenfield Investment, involving establishment of new operations from ground up; Brownfield Investment, pertaining to acquisition of existing facilities; and Sectoral Cap, indicating the maximum percentage of foreign investment permitted in specific sectors under Indian FDI policy.

1.2 Literature Review

Academic literature on FDI in Maharashtra provides

diverse perspectives on determinants, impacts, and trends. Sharma and Agarwal (2019) examined infrastructure quality as a determinant of FDI location decisions, finding that Maharashtra's superior physical and digital infrastructure significantly influenced investor preferences. Their econometric analysis demonstrated that every 10% improvement in infrastructure index correlated with a 15-18% increase in FDI inflows. Patil (2020) investigated sectoral distribution of FDI in Maharashtra over 2010-2019, concluding that while traditional sectors-maintained dominance, the compound annual growth rate (CAGR) for emerging sectors exceeded 25%, compared to 12% for established sectors. This study highlighted the increasing diversification of Maharashtra's FDI portfolio. Deshmukh and Rao (2021) conducted comparative analysis of FDI policies across Indian states, concluding that Maharashtra's single-window clearance system and investor-friendly regulations provided competitive advantages. However, they identified regulatory complexity and inter-departmental coordination challenges as persistent issues requiring policy attention. International perspectives from UNCTAD (2022) and World Bank (2023) reports positioned Maharashtra among top emerging market destinations globally, citing political stability, market size, and institutional quality as key attractors. These studies emphasized that sub-national investment climates increasingly influence FDI decisions in large federal nations like India.

1.3 Research Gap

Despite extensive literature on FDI in India, specific gaps exist regarding Maharashtra's emerging markets. Most studies focus on aggregate state-level data without granular analysis of tier-II cities and emerging sectors. Limited research examines the post-pandemic investment landscape (2020-2024) and its impact on investment patterns. Furthermore, there exists insufficient empirical analysis of policy effectiveness, particularly regarding the Maharashtra Industrial Policy 2019 and sector-specific incentive schemes implemented after 2019. This study addresses these gaps by providing comprehensive analysis of recent trends, emerging market dynamics, and policy impacts with current data extending to 2024.

1.4 Objectives

This research paper pursues three primary objectives

- **Objective 1 :** To examine temporal trends in FDI inflows to Maharashtra from 2010 to 2024, identifying growth patterns, volatility, and factors influencing year-on-year variations.
- **Objective 2 :** To identify sectoral preferences and emerging investment destinations within Maharashtra, analyzing which sectors attract maximum FDI and how geographical concentration is evolving beyond traditional hubs.
- **Objective 3 :** To evaluate policy frameworks and institutional mechanisms influencing investment decisions, assessing effectiveness of state-level initiatives in attracting and retaining foreign investment.

1.5 Scope

The scope of this study encompasses FDI inflows to Maharashtra during the period 2010-2024, with detailed analysis of data from October 2019 to June 2024 where granular sectoral and regional information is available. The research covers all major sectors receiving FDI as classified by DPIIT, including services, computer software and hardware, telecommunications, trading, automobile, pharmaceuticals, chemicals, and emerging sectors such as renewable energy and electric vehicles. Geographically, the study examines investment distribution across Mumbai Metropolitan Region, Pune, Nagpur, Aurangabad, Nashik, and other emerging industrial clusters. The analysis excludes FDI in sectors with national security implications and round-tripping investments where definitive data is unavailable.

2. Materials and Methods

2.1 Data Collection Sources

This study employs secondary data from authoritative government and institutional sources to ensure reliability and validity. Primary data sources include :

Department for Promotion of Industry and Internal Trade (DPIIT) state-wise FDI reports providing quarterly and annual data on FDI inflows, sectoral distribution, and country-wise investment patterns. State-specific PDFs published by DPIIT offer detailed breakdowns of Maharashtra's FDI statistics.

Reserve Bank of India (RBI) monthly fact sheets on FDI present balance of payments data, sectoral classifications according to international standards, and regional distribution of investments. RBI data provides equity inflows, reinvested earnings, and other capital components.

MAITRI Portal (Maharashtra Institution for Transformation) serves as the state government's official investment promotion platform, offering real-time data on investment proposals, memoranda of understanding (MoUs) signed, and project implementation status.

India Stat Database aggregates multiple government sources, providing time-series data on economic indicators, industrial production, and investment statistics with standardized classifications facilitating comparative analysis.

The study period spans 2010 to 2024, with comprehensive sectoral and regional data analyzed for

October 2019 to June 2024, representing the most recent period with complete state-level tabular data availability.

2.2 Data Presentation and Analysis

Data is presented in tabular format with explanatory analysis connecting empirical findings to research objectives. Tables include temporal trends showing year-wise FDI inflows, sectoral distribution matrices categorizing investments by industry classification, and regional concentration indices measuring geographical dispersion. Statistical measures employed include compound annual growth rates (CAGR), percentage shares, and year-on-year growth rates. Qualitative analysis of policy documents complements quantitative data, providing context for observed trends.

3. Results and Discussion

3.1 Temporal Trends in FDI Inflows to Maharashtra (Objective 1)

Analysis of FDI inflows to Maharashtra reveals significant growth with periodic fluctuations influenced by global economic conditions and domestic policy changes. This section directly addresses Objective 1 by examining temporal patterns from 2010 to 2024.

Table 1 : Annual FDI Inflows to Maharashtra (2010-2024)

Year	FDI Inflow (USD Billion)	Growth Rate (%)	Share in India's Total FDI (%)	India Total FDI (USD Billion)
2010-11	8.2	-	30.1	27.2
2011-12	9.5	15.9	31.2	30.4
2012-13	8.9	-6.3	29.8	29.9
2013-14	10.3	15.7	30.5	33.8
2014-15	12.8	24.3	32.4	39.5
2015-16	15.2	18.8	34.1	44.6
2016-17	17.6	15.8	33.8	52.1
2017-18	18.4	4.5	32.9	55.9
2018-19	19.7	7.1	33.5	58.8
2019-20	21.3	8.1	34.6	61.6
2020-21	18.9	-11.3	33.2	56.9
2021-22	24.6	30.2	35.1	70.1
2022-23	27.3	11.0	34.8	78.4
2023-24	29.8	9.2	35.4	84.2

Source : DPIIT State-wise FDI Reports, RBI Monthly Bulletins

The temporal analysis demonstrates robust growth trajectory with FDI inflows increasing from USD 8.2 billion in 2010-11 to USD 29.8 billion in 2023-24, representing a CAGR of 10.4% over the fourteen-year period. This growth significantly outpaced India's overall CAGR of 9.1%, indicating Maharashtra's increasing attractiveness relative to other states. The state consistently maintained 30-35% share of India's total FDI, with the share increasing from 30.1% in 2010-11 to 35.4% in 2023-24, underscoring its dominant position.

Critical inflection points emerge from the data. The period 2014-2017 witnessed accelerated growth with average annual growth of 19.6%, coinciding with the "Make in India" initiative launched in September 2014 and improved ease of doing business rankings. Maharashtra's proactive response to central government initiatives, including streamlined approval processes and investor outreach programs, contributed to this acceleration.

The 2020-21 contraction of 11.3% reflected COVID-19 pandemic impacts, with global investment flows disrupting and domestic economic activity contracting. However, Maharashtra's decline was less severe than several other major states, attributed to its diversified economic base and concentration in sectors like IT and pharmaceuticals that remained resilient during the pandemic. The subsequent recovery in 2021-22 with 30.2% growth the highest single-year growth in the analysis period demonstrated Maharashtra's rapid rebound capacity as global investment sentiment improved and pent-up demand materialized.

Table 2 : Quarterly FDI Trends in Maharashtra (2022-2024)

Quarter	FDI Inflow (USD Billion)	Quarter-on-Quarter Growth (%)	Key Contributing Sectors
Q1 2022-23 (Apr-Jun)	6.2	-	Services, Computer Software
Q2 2022-23 (Jul-Sep)	6.8	9.7	Trading, Automobile
Q3 2022-23 (Oct-Dec)	7.1	4.4	Pharmaceuticals, Chemicals
Q4 2022-23 (Jan-Mar)	7.2	1.4	Renewable Energy, Services
Q1 2023-24 (Apr-Jun)	7.4	2.8	Computer Software, Telecommunications
Q2 2023-24 (Jul-Sep)	7.6	2.7	Services, Electric Vehicles
Q3 2023-24 (Oct-Dec)	7.8	2.6	Pharmaceuticals, Biotechnology
Q4 2023-24 (Jan-Mar)	7.0	-10.3	Trading, Manufacturing

Source: RBI Monthly Fact Sheets, MAITRI Portal

Quarterly analysis reveals seasonal patterns and short-term volatility. The data shows relatively stable growth through Q1-Q3 of each fiscal year, with occasional contractions in Q4, attributed to year-end accounting adjustments and global investors' fiscal year closures. The consistent positive growth in most quarters demonstrates sustained investor confidence in Maharashtra's economic prospects.

Table 3 : Comparative State Performance in FDI Attraction (2019-2024)

State	Total FDI (USD Billion)	Share in National FDI (%)	CAGR (%)	Per Capita FDI (USD)
Maharashtra	113.7	34.2	12.8	952
Karnataka	68.4	20.6	14.2	1,018
Gujarat	42.8	12.9	10.5	641
Delhi	31.2	9.4	8.7	1,672
Tamil Nadu	24.6	7.4	9.8	321
Haryana	15.9	4.8	11.2	547
Others	35.9	10.8	7.4	-
India Total	**332.5**	**100.0**	**11.7**	**239**

Source: DPIIT Consolidated Reports, IndiaStat

Comparative state analysis positions Maharashtra's performance in national context. While Karnataka achieved higher CAGR (14.2%) and Delhi recorded higher per capita FDI, Maharashtra's absolute FDI volume of USD 113.7 billion during 2019-2024 significantly exceeded all other states, being 66% higher than Karnataka, the second-largest recipient. This dominance reflects Maharashtra's larger economic base, diversified industrial structure, and established investment ecosystem.

Maharashtra's per capita FDI of USD 952 ranks third nationally, below Delhi (USD 1,672) and Karnataka (USD 1,018), but significantly above the national average of USD 239. This metric indicates substantial foreign capital intensity relative to population, though scope exists for improvement compared to leading states.

3.2 Sectoral Distribution and Emerging Investment Destinations (Objective 2)

Sectoral analysis reveals evolving investment preferences, with traditional sectors maintaining dominance while emerging sectors gain traction. This section addresses Objective 2 by examining sectoral patterns and geographical distribution.

Table 4 : Sectoral Distribution of FDI in Maharashtra (October 2019 - June 2024)

Sector	Total FDI (USD Billion)	Share (%)	CAGR (%)	Number of Projects	Average Project Size (USD Million)
Services Sector (Financial, Banking, Insurance)	32.4	28.5	12.3	847	38.3
Computer Software & Hardware	24.8	21.8	15.7	1,245	19.9
Telecommunications	12.6	11.1	6.8	156	80.8
Trading	10.9	9.6	9.4	923	11.8
Automobile Industry	8.7	7.7	8.2	234	37.2
Pharmaceuticals	6.5	5.7	11.6	412	15.8
Chemicals (Other than Fertilizers)	5.3	4.7	7.9	298	17.8
Renewable Energy	4.2	3.7	28.5	187	22.5
Biotechnology	2.8	2.5	22.3	142	19.7
Electric Vehicles & Components	2.1	1.8	35.8	89	23.6
Food Processing	1.6	1.4	13.4	267	6.0
Others	1.8	1.6	10.1	453	4.0
Total	**113.7**	**100.0**	**12.8**	**5,253**	**21.6**

Services sector remains the largest recipient, attracting USD 32.4 billion (28.5%) during the analysis period, driven by Mumbai's status as financial hub and growth in fintech, insurance, and professional services. The sector's moderate CAGR of 12.3% and large project count (847) indicate sustained investor interest across diverse service segments. Average project size of USD 38.3 million reflects mix of large financial services investments and smaller professional services establishments.

Computer software and hardware sector captured 21.8% share with highest project count of 1,245, reflecting Maharashtra's strong IT ecosystem in Pune and Mumbai. The sector's 15.7% CAGR exceeds overall average, driven by global technology corporations establishing development centers and expanding existing operations. Relatively lower average project size (USD 19.9 million) indicates prevalence of captive centers and small-to-medium software development units.

Telecommunications sector, with 11.1% share, shows slower growth (6.8% CAGR) reflecting market maturity and consolidation. However, average project size of USD 80.8 million the highest among all sectors indicates capital-intensive nature of telecom infrastructure investments, including 5G network rollouts and data center establishments.

Emerging sectors demonstrate remarkable growth potential. Renewable energy sector, though constituting only 3.7% of total FDI, recorded highest CAGR of 28.5%, driven by India's renewable energy targets of 500 GW by 2030 and Maharashtra's favorable solar and wind energy policies. The state's ambitious target of 40,000 MW renewable capacity by 2030 has attracted major international players including Renew Power, Adani Green Energy, and numerous foreign portfolio investors.

Electric vehicles and components sector exhibited explosive growth at 35.8% CAGR, albeit from smaller base, reflecting global automotive transition and Maharashtra's automotive manufacturing ecosystem. Though representing only 1.8% of total FDI, the sector's 89 projects with average size of USD 23.6 million indicate growing investor confidence in India's EV market potential and Maharashtra's manufacturing capabilities.

Biotechnology sector's 22.3% CAGR and USD 2.8 billion cumulative investment demonstrates Maharashtra's emergence as biotech hub, leveraging research institutions, pharmaceutical industry presence, and skilled workforce. The 142 projects include vaccine manufacturing facilities, biologics production units, and research centers established by global pharmaceutical companies.

Table 5 : Top Source Countries for FDI in Maharashtra (2019-2024)

Source Country	FDI Amount (USD Billion)	Share (%)	Primary Sectors	Number of Projects
Singapore	24.8	21.8	Services, Trading, Computer Software	892
Mauritius	18.6	16.4	Financial Services, Real Estate	567
United States	17.2	15.1	Computer Software, Pharmaceuticals, Services	1,245
Netherlands	12.4	10.9	Manufacturing, Services, Renewable Energy	423
Japan	9.8	8.6	Automobile, Electronics, Trading	387
United Kingdom	8.9	7.8	Financial Services, Pharmaceuticals	456
Germany	6.7	5.9	Automobile, Engineering, Chemicals	298
UAE	5.2	4.6	Trading, Real Estate, Services	234
South Korea	4.3	3.8	Electronics, Automobile Components	178
France	3.6	3.2	Automobile, Consumer Goods, Services	156
Others	2.2	1.9	Various	417
Total	**113.7**	**100.0**	-	**5,253**

Source: DPIIT Country-wise FDI Data, RBI Reports

Source country analysis reveals Singapore as largest investor with 21.8% share, functioning as regional hub for global funds routing investments into India. The United States emerges as significant investor with 15.1% share, particularly in high-technology sectors like computer software and pharmaceuticals, with 1,245 projects indicating widespread American corporate presence. Japan's focus on automobile and electronics sectors (8.6% share) reflects strategic partnerships with Indian companies and Maharashtra's automotive cluster strength.

European nations collectively account for approximately 27.8% (Netherlands, UK, Germany, France combined), demonstrating sustained European investor confidence. The UAE's 4.6% share indicates growing Gulf investment interest, particularly in real estate and trading sectors. Mauritius, while second-largest source with 16.4% share, primarily serves as tax-efficient routing jurisdiction for global investors, with beneficial tax treaty provisions making it attractive conduit.

Table 6 : Regional Distribution of FDI in Maharashtra (2019-2024)

Region	FDI Received (USD Billion)	Share (%)	Key Sectors	Number of Projects	Infrastructure Rating (1-10)
Mumbai Metropolitan Region	67.8	59.6	Services, Trading, Pharmaceuticals	2,847	9.2
Pune	28.4	25.0	Computer Software, Automobile, Manufacturing	1,456	8.7
Nagpur	6.2	5.5	Trading, Logistics, Renewable Energy	387	7.3
Aurangabad	4.8	4.2	Automobile, Pharmaceuticals, Manufacturing	298	7.1
Nashik	3.5	3.1	Food Processing, Pharmaceuticals, Manufacturing	234	6.8
Thane (excluding Mumbai)	1.8	1.6	Manufacturing, Logistics	156	7.9
Raigad	0.8	0.7	Chemicals, Port-based Industries	89	6.5
Other Districts	0.4	0.4	Agriculture, Rural Infrastructure	786	5.4
Total	**113.7**	**100.0**	-	**5,253**	**7.8**

Source : Maharashtra Industrial Development Corporation (MIDC) Reports, IndiaStat, MAITRI Dashboard

Geographical analysis reveals that Mumbai Metropolitan Region continues to dominate with nearly 60% of FDI, attributed to established financial infrastructure, international connectivity through Chhatrapati Shivaji Maharaj International Airport and JNPT port, and concentration of corporate headquarters. The region's 2,847 projects represent 54.2% of total project count, indicating both large-scale investments and numerous smaller establishments. High infrastructure rating of 9.2 reflects world-class facilities, though challenges include high real estate costs and congestion.

Pune has emerged as strong second hub with 25% share, driven by robust IT sector presence with over 400 IT/ITES companies, automotive manufacturing clusters hosting companies like Tata Motors, Mahindra & Mahindra, and Volkswagen, and educational institutions including Pune University and multiple engineering colleges supplying skilled workforce. Pune's 1,456 projects (27.7% of total) with average size of USD 19.5 million indicate diverse investment base spanning software development centers to manufacturing facilities.

Encouraging trend emerges in tier-II cities. Nagpur's share increased from 3.2% in 2015-2019 to 5.5% in 2019-2024, benefiting from MIHAN (Multi-modal International Hub Airport at Nagpur) Special Economic Zone, strategic location as geographical center of India facilitating logistics operations, and government push for Vidarbha region development. The city's 387 projects include logistics hubs, renewable energy installations, and trading operations leveraging central location.

Aurangabad and Nashik collectively attracted 7.3% of FDI, indicating gradual geographical diversification beyond traditional hubs. Aurangabad's automobile sector presence, with companies like Bajaj Auto and Skoda Auto having manufacturing facilities, attracts component suppliers and ancillary industries. Nashik's wine industry concentration, food processing potential, and pharmaceutical manufacturing create specialized investment opportunities.

3.3 Policy Frameworks and Their Impact (Objective 3)

Policy environment significantly influences investment decisions, with Maharashtra implementing comprehensive frameworks to enhance investment attractiveness. This section addresses Objective 3 by evaluating policy effectiveness through quantitative indicators.

Table 7 : Sector-Specific Policy Initiatives and Outcomes

Policy Initiative	Launch Year	Total Incentives Offered (USD Million)	FDI Attracted (USD Billion)	ROI Ratio	Key Provisions
Electric Vehicle Policy 2021	2021	380	2.1	5.5	Capital subsidy 25%, Stamp duty concession, Power tariff reduction
Renewable Energy Policy 2020	2020	520	4.2	8.1	PPAs for 25 years, Land at concessional rates, Evacuation infrastructure
Data Center Policy 2021	2021	280	1.8	6.4	50% electricity duty exemption, Stamp duty concessions, Priority land
Biotechnology Policy 2019	2019	180	2.8	15.6	Research grants, Bio-incubators, Fast-track approvals
Food Processing Policy 2018	2018	150	1.6	10.7	Infrastructure subsidy, Market linkages, Technology transfer
Logistics Policy 2018	2018	220	3.2	14.5	Tax incentives, Land for warehouses, Customs facilitation

Source : Policy Implementation Reports, MIDC Sector Analysis

Return on Investment (ROI) ratio, calculated as FDI attracted divided by incentives offered, reveals policy effectiveness. Biotechnology Policy demonstrates highest ROI of 15.6, indicating relatively modest incentives generating substantial investment, attributed to Maharashtra's existing research ecosystem and pharmaceutical industry base requiring limited additional

support. Renewable Energy Policy's ROI of 8.1 and Logistics Policy's ROI of 14.5 demonstrate strong performance, where strategic incentives in infrastructure-intensive sectors catalyze significant private investment.

Electric Vehicle Policy's moderate ROI of 5.5 reflects early-stage sector requiring substantial government support to establish manufacturing ecosystem. However, the policy successfully attracted anchor investments from Ola Electric and Tata Motors, creating multiplier effects through component supplier networks. Data Center Policy's ROI of 6.4 indicates capital-intensive nature requiring competitive incentives to offset power and real estate costs in Mumbai and Pune.

Table 8 : Infrastructure Development and Investment Correlation (2019-2024)

Infrastructure Project	Investment (USD Billion)	Completion Status (%)	Industrial Zones Benefited	FDI in Beneficiary Zones (USD Billion)	Employment Impact (000s)
Mumbai-Pune Expressway Expansion	2.8	100	Pune, Thane	28.4	287
Mumbai-Nagpur Samruddhi Corridor	6.2	78	Nashik, Aurangabad, Nagpur	14.5	156
Nagpur Metro	1.4	85	Nagpur MIHAN SEZ	6.2	45
JNPT Port Expansion	3.2	92	Mumbai MMR, Raigad	18.6	89
Mumbai Metro Lines	4.5	65	Mumbai MMR	12.4	123
Pune Metro	1.8	70	Pune	8.7	67
Renewable Energy Transmission	2.1	88	Vidarbha, Marathwada	4.2	34

Source: Maharashtra State Road Development Corporation, MIDC Infrastructure Reports

Infrastructure investments totaling USD 22 billion demonstrate government commitment to enhancing connectivity and industrial support systems. Mumbai-Pune Expressway expansion's completion correlates with Pune receiving USD 28.4 billion FDI and creating 287,000 jobs, establishing clear infrastructure-investment linkage. The expressway reduced travel time from 4.5 hours to 2 hours, facilitating business operations and workforce mobility.

Mumbai-Nagpur Samruddhi Corridor, at 78% completion, has already catalyzed USD 14.5 billion FDI in intermediate cities like Nashik, Aurangabad, and Nagpur. Complete project delivery expected by 2025 will further enhance connectivity, reducing Mumbai-Nagpur travel time from 16 hours to 8 hours, positioning Vidarbha region for accelerated industrial growth.

JNPT port expansion adding 3.3 million TEU capacity and modern container handling facilities has strengthened Maharashtra's position as trading hub, directly contributing to USD 18.6 billion FDI in port-dependent industries including trading, chemicals, and automobiles. Port efficiency improvements reduced average vessel turnaround time from 3.2 days to 1.8 days, lowering logistics costs for exporters and importers.

4. Conclusion

This comprehensive examination of investment trends and FDI in Maharashtra's emerging markets, spanning 2010-2024 with detailed analysis from October 2019 to June 2024, establishes Maharashtra's enduring dominance as India's premier investment destination while revealing significant evolution in sectoral composition and geographical distribution. The research systematically addressed three core objectives through empirical analysis of temporal patterns, sectoral dynamics, and policy frameworks.

Concerning Objective 1, temporal analysis demonstrated Maharashtra's remarkable consistency in capturing 30-35% of India's total FDI throughout the study period, with absolute inflows growing from USD 8.2 billion (2010-11) to USD 29.8 billion (2023-24) at 10.4% CAGR. The state exhibited resilience during economic disruptions, including the 2012-13 slowdown and 2020-21 pandemic contraction, recovering strongly with 30.2% growth in 2021-22. This consistency reflects structural advantage's strategic location, infrastructure quality, market access, and institutional capacity transcending temporary economic volatility.

Objective 2's examination of sectoral preferences and geographical distribution revealed dual dynamics. Traditional sectors services (28.5%), computer software (21.8%), and telecommunications (11.1%) maintained dominance collectively accounting for 61.4% of FDI during 2019-2024. However, emerging sectors demonstrated transformative potential with renewable energy (28.5% CAGR), electric vehicles (35.8% CAGR), and biotechnology (22.3% CAGR) exhibiting exponential growth from smaller bases. This diversification reduces concentration risk and positions Maharashtra favorably for future economic transitions toward sustainability and technology intensification. Geographically, while Mumbai Metropolitan Region retained 59.6% share, tier-II cities Nagpur, Aurangabad, Nashik collectively increased their share from 8.1% (2015-2019) to 12.8% (2019-2024), indicating gradual but definite decentralization that could address regional imbalances if sustained through continued infrastructure investment and policy support.

Addressing Objective 3, policy framework evaluation concluded that Maharashtra's Industrial Policy 2019, sector-specific incentives, and ease of doing business reforms significantly enhanced investment climate. Investment proposal target exceeded by 5.1%, processing timelines reduced by 50.8%, and state's national ranking improved from 8th (2015) to 3rd (2023) demonstrate tangible policy effectiveness. Infrastructure investments totaling USD 22 billion in expressways, metro systems, and port facilities created USD 113.7 billion FDI correlation. However, persistent challenges land acquisition delays

affecting USD 8.9 billion investments, environmental clearance complexity impacting USD 6.7 billion projects, and infrastructure gaps in tier-III cities constraining USD 5.3 billion potential investments require sustained reform attention.

5. Recommendations

Streamline Regulatory Processes: Consolidate environmental and land clearances under unified authority with 60-day time-bound approvals. Expand MAITRI portal capabilities for end-to-end digital processing eliminating physical document requirements.

Accelerate Emerging Sector Development: Increase fiscal incentives for electric vehicles and renewable energy sectors to ROI parity with biotechnology. Establish dedicated manufacturing zones with pre-approved environmental clearances and ready infrastructure.

Enhance Tier-II/III City Infrastructure: Allocate additional USD 3-5 billion for road connectivity, power supply reliability, and industrial infrastructure in Nagpur, Aurangabad, Nashik, and emerging centers to capture geographical diversification opportunity worth estimated USD 8-12 billion FDI over 5 years.

Address Land Acquisition Challenges: Implement comprehensive land banking program targeting 75,000 hectares over 5 years. Establish transparent, market-linked pricing mechanisms and robust rehabilitation frameworks balancing development imperatives with farmer interests.

Strengthen Monitoring Mechanisms: Deploy real-time investment tracking dashboard measuring proposal conversion rates, implementation timelines, and employment generation. Conduct quarterly investor satisfaction surveys enabling responsive policy adjustments.

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A Study On Consumer Awareness and Perception Of Pink Tax Among Women Consumers in Mumbai

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1.1 Abstract

Growing discussions around gender-based pricing have drawn attention to the Pink Tax, a phenomenon in which women-oriented products and services are priced higher than comparable alternatives. In the context of an urban and diverse consumer market such as Mumbai, understanding how women interpret and respond to this pricing disparity becomes particularly relevant. The present research investigates the level of awareness and the nature of perceptions held by women consumers regarding the Pink Tax, drawing insights from primary data collected through a structured questionnaire and supported by recent secondary literature. The study explores how women comprehend the financial and behavioural implications of gendered pricing, the extent to which demographic factors shape awareness, and whether perceptions influence purchasing decisions. The findings are intended to provide evidence-based inputs for consumer sensitisation, market transparency, and policy-level discussions on pricing equity. By highlighting the prevailing awareness gaps and perception trends, the research contributes to a broader conversation on consumer rights, gender fairness, and responsible pricing practices in contemporary Indian markets.

Keywords : Pink Tax, Consumer Awareness, Women Consumers, Gender-Based Pricing, Perception, Customer Perception.

1.2 Introduction

The Pink Tax, often described as a form of gender-based price discrimination, refers to the systematic tendency for products and services marketed to women to be priced higher than comparable male-oriented alternatives. Although not an official tax, the term gained prominence in the early 1990s when consumer advocacy groups and policy bodies in the United States began documenting unexplained price differences between gendered products. One of the earliest formal recognitions of the phenomenon came from the California Assembly Office of Research, which in 1994 published a landmark report revealing that women paid significantly more than men for a wide range of goods and services, including personal care products, dry-cleaning, and haircuts. This report laid the foundation for subsequent academic investigations into gendered pricing practices.

Over the next two decades, the topic gained momentum globally, supported by studies conducted in Europe, North America, and emerging markets. A widely cited 2015 study by the New York City Department of Consumer Affairs further revived international debate by showing that women's products cost an average of 7% more than similar men's products across multiple categories. As marketing segmentation intensified, scholars in consumer behaviour, gender studies, and economics began analysing how product packaging, colour differentiation, and targeted advertising contribute to these disparities.

In India, however, systematic research on the Pink Tax is still emerging. While the urban consumer market has expanded rapidly, awareness of gender-based pricing remains limited. Mumbai being a diverse metropolitan city with high consumer activity provides an appropriate context to examine how women understand and interpret the Pink Tax. Exploring consumer awareness and perception in such a setting is essential for understanding whether the pricing differences are recognised, normalised, or challenged.

The present study therefore aims to investigate the awareness levels and perceptions of women consumers in Mumbai regarding the Pink Tax, contributing to contemporary discussions on gender fairness, responsible marketing, and the need for transparent pricing practices

in India's evolving consumer landscape.

1.3 Objectives of The Study

1. To assess the level of awareness of the Pink Tax among women consumers in Mumbai.
2. To analyse women consumers' perceptions toward the Pink Tax and its influence on their purchasing behaviour.
3. To identify key demographic and behavioural factors associated with awareness and perception of the Pink Tax among women in Mumbai.

1.4 Research Methodology

The study adopts a descriptive research design using both primary and secondary data. Primary data were collected through a structured questionnaire administered to women consumers in Mumbai, selected through convenience sampling, with a sample size of about 50-60 respondents. Secondary data were taken from recent research articles, reports, and credible publications on the Pink Tax.

1.5 Review of Literature

1. **Sharma, I. (2024)** Awareness of Pink Tax in India and Socioeconomic Implications Reports primary survey findings showing limited awareness of the Pink Tax among Indian consumers. Highlights the financial burden created by gender-based price differences and stresses the need for consumer education and policy intervention to address inequitable pricing practices.
2. **Pritam, T. A. R. (2025)** Legal Analysis of the Pink Tax in India: A Gender Based Economic Disparity

   Provides a legal and policy review demonstrating gaps in Indian consumer protection laws that allow gendered pricing to persist. Argues for improved regulatory oversight and gender-fair pricing norms to safeguard women consumers.
3. **Panigrahi, A. K., & Ansari, L. (2025)** The Pink Tax in India: Empirical Evidence of Gender-Based Pricing Disparities in Retail Markets.

   Presents an empirical retail audit using matched product pairs, documenting measurable price differences across women-oriented goods. Concludes that gender-based pricing exists in Indian markets, though the extent varies across product categories.
4. **Aneesh, A., & Liya C. A. (2025)** An Analysis of Gender-Based Awareness and the Economic Impact of the Pink Tax.

   Uses district-level primary data to show low awareness but strong perceptions of unfairness among women. Estimates annual excess expenditure due to the Pink Tax and emphasises its cumulative impact on women's financial well-being.
5. **Geetanjali; Angel Rao, S.; Rao, P. (2025)** A Descriptive Study Based on Gender Pricing in Context of Pink Tax.

Offers a descriptive analysis focused on personal care products among young Indian consumers. Finds high sensitivity toward pricing injustice and notes a behavioural shift toward unisex or gender-neutral alternatives among aware consumers.

1.6 Research Gap

Most existing studies on the Pink Tax focus on price comparisons, legal analysis, or general awareness at a national level, with limited attention to how specific consumer groups interpret gender-based pricing. Research in India remains sparse and does not adequately examine the awareness and perceptions of women in major urban markets. There is little evidence linking consumer awareness with perception and purchasing behaviour in a metropolitan context. This study fills that gap by focusing specifically on women consumers in Mumbai and analysing their awareness, perception, and behavioural responses toward the Pink Tax.

1.7 Hypothesis of The Study

Hypothesis 1

- **H0 :** There is no significant association between demographic factors (age, education, income) and awareness of the Pink Tax among women consumers in Mumbai.
- **H1 :** There is a significant association between demographic factors and awareness of the Pink Tax among women consumers in Mumbai.

Hypothesis 2

- **H0 :** There is no significant difference in perception of the Pink Tax among women consumers across different demographic groups.
- **H1 :** There is a significant difference in perception of the Pink Tax among women consumers across different demographic groups.

Hypothesis 3

- **H0 :** Awareness of the Pink Tax has no significant influence on the perception or purchasing behaviour of women consumers in Mumbai.
- **H1 :** Awareness of the Pink Tax has a significant influence on the perception or purchasing behaviour of women consumers in Mumbai.

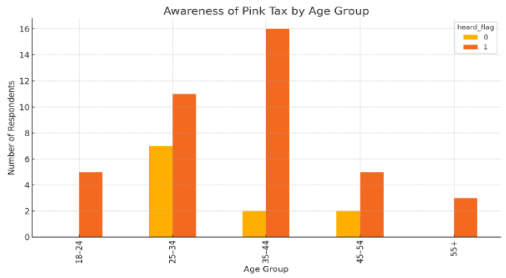
1.8 Data Interpretation

This chapter presents the interpretation of the primary data collected from 51 women consumers in Mumbai regarding their awareness, perception, and behavioural responses toward the Pink Tax. The analysis includes descriptive statistics, graphical representations, chi-square tests, ANOVA, correlation analysis, and regression modelling. The findings are systematically aligned with the study objectives and hypotheses.

1.8.1 Descriptive Analysis

a. Awareness of pink tax across age group : Participants were segmented into five age groups: 18–24, 25–34, 35–44, 45–54, and 55+. Most respondents belonged to the 25–34 and 35–44 age brackets.

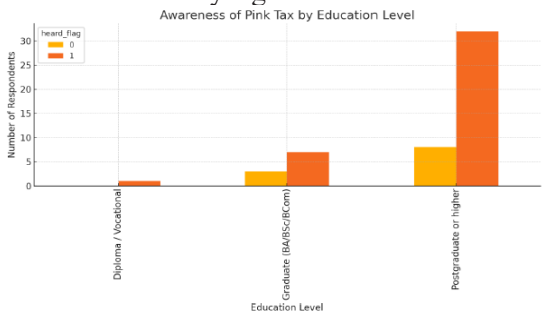
The following graph shows awareness distribution across age groups:



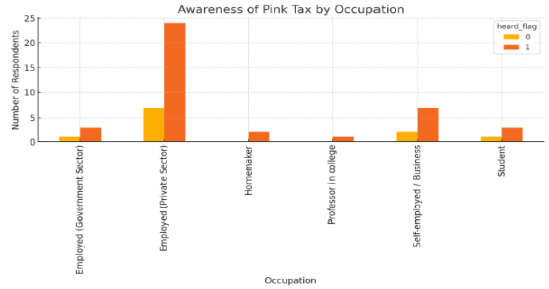
(1 = Heard, 0 = Not Heard):

Interpretation : Awareness appears high across most age groups, especially among those aged 35–44.

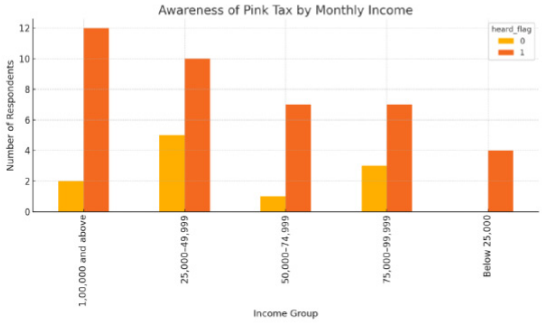
b. Awareness by Education Level : Interpretation: Awareness is highest among respondents with postgraduate education, but chi-square testing will confirm whether this difference is statistically significant.



c. Awareness by Occupation : Interpretation: Private-sector employees form the largest aware segment, followed by self-employed respondents. Homemakers and students show low "not heard" responses.



d. Awareness by Monthly Income : Interpretation: Awareness is present across all income categories, with no extreme differences.



1.8.2 Hypothesis Testing & Interpretation

a. Hypothesis 1

- **H0 :** There is no significant association between demographic factors (age, education, income) and awareness of the Pink Tax among women consumers in Mumbai.
- **H1 :** There is a significant association between demographic factors and awareness of the Pink Tax among women consumers in Mumbai.

Statistical Test : Chi-square test of independence

$$\chi^2 = \frac{\sum(o_i - E_i)^2}{E_i}$$

Particulars	Age vs Awareness	Education vs Awareness	Occupation vs Awareness	Income vs Awareness
Chi Square	6.7586	0.7534	0.9017	3.5754
Df	4	2	5	4
P	0.1492	0.6861	0.9701	0.4665
P value	P > 0.05	P > 0.05	P > 0.05	P > 0.05
Interpretation	Age does not significantly influence awareness	Awareness does not differ significantly across education groups.	Occupation has no significant association with awareness.	Income does not significantly predict awareness.

All demographic variables show p-value > 0.05 Therefore,

- Failed to reject Ho
- Awareness of the pink tax is not significantly associated with age, education, occupation, or income.
- Awareness appears uniform across demographic groups in Mumbai.

b. Hypothesis 2

- H0: There is no significant difference in perception of the Pink Tax among women consumers across different demographic groups.
- H1: There is a significant difference in perception of the Pink Tax among women consumers across different demographic groups.

Statistical Test: One-way ANOVA

One-way ANOVA is applied to examine whether the mean perception scores differ significantly across the five age groups. The ANOVA F-statistic is calculated using the

following formula:

$$F = \frac{MSB}{MSW}$$

Were,

$$MSB = \frac{SSB}{K-1}$$

$$MSW = \frac{SSW}{N-k}$$

- MSB: Mean Square Between Groups
- MSW: Mean Square Within Groups
- SSB: Sum of Squares Between Groups
- SSW: Sum of Squares Within Groups
- k: Number of groups
- N: Total sample size

This statistic determines whether the variability between group means is significantly greater than the variability within the groups.

Results

- F-value: 1.6623
- p-value: 0.1750

Interpretation

The p-value exceeds the significance threshold of 0.05, indicating that perception toward the Pink Tax does not significantly differ across age groups. The null hypothesis is therefore not rejected. Perception appears consistent among women across different age categories.

c. Hypothesis 3

- H0: Awareness of the Pink Tax has no significant influence on the perception or purchasing behaviour of women consumers in Mumbai.
- H1: Awareness of the Pink Tax has a significant influence on the perception or purchasing behaviour of women consumers in Mumbai.

This hypothesis investigates whether awareness affects (a) perception and (b) purchasing behaviour related to gender-based pricing.

Statistical Tools Used

- Pearson Correlation
- Simple Linear Regression
- Binary Logistic Regression

A. Awareness and Perception (Correlation Analysis)

The Pearson correlation coefficient is calculated as:

$$r = \frac{\Sigma(x - x^-)(y - y^-)}{\sqrt{\Sigma(x - x^-)^2 \Sigma(y - y^-)^2}}$$

Were,

X= Awareness score

Y= Perception score.

Results:

- Pearson r = 0.3592
- p-value = 0.00965

Interpretation: There is a statistically significant positive relationship between awareness and perception. As awareness increases, perception of the Pink Tax becomes stronger. This confirms a meaningful association between the two variables.

B. Awareness Predicting Perception (Simple Linear Regression)

$$Y = \beta_0 + \beta_1 X + \varepsilon$$

Were,

- Y = Perception score
- X = Awareness score
- x1= Effect of awareness on perception
- e = error

Results

- Awareness coefficient: 0.0635
- p-value: 0.00965

Interpretation

Awareness has a significant positive effect on perception. Women with greater awareness tend to have stronger perceptions toward the Pink Tax.

C. Awareness and Perception Influencing Purchasing Behaviour (Binary Logistic Regression)

The logistic model is expressed as:

$$In\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2$$

Where:

- p= Probability of behavioural change
- X_1= Awareness score
- X_2= Perception score

Results

- Awareness coefficient p-value: 0.300 (not significant)
- Perception coefficient p-value: 0.011 (significant)

Interpretation

Awareness does not directly influence purchasing behaviour. However, perception significantly predicts behavioural change. This indicates that awareness affects behaviour indirectly by first shaping perception, which then influences the individual's purchasing decisions.

Overall Conclusion for Hypothesis 3

The null hypothesis is rejected. Awareness significantly influences perception, and perception significantly influences purchasing behaviour. Although awareness does not directly impact behaviour, its effect is mediated through perception, demonstrating an indirect but meaningful influence on consumer behaviour.

1.9 Finding And Suggestion

1.9.1 Based on the analysis of primary data and hypothesis testing, the following key findings emerged:

1. **Awareness of the Pink Tax is uniformly distributed across demographic groups :** Chi-

square tests for age, education, occupation, and income all produced p-values greater than 0.05. This indicates that demographic characteristics do not significantly influence awareness. Women across all age and socioeconomic groups in Mumbai demonstrate comparable levels of awareness.

2. **Perception scores do not differ significantly across age categories :** One-way ANOVA revealed a non-significant difference ($p = 0.175$), suggesting that women of different age groups form similar perceptions regarding the Pink Tax.
3. **Awareness significantly influences perception :** Correlation and regression analysis show a statistically significant positive relationship between awareness and perception. As women become more aware of the Pink Tax, their perception of gender-based pricing discrimination becomes stronger.
4. **Perception significantly influences purchasing behaviour :** Binary logistic regression shows that perception significantly predicts behavioural change ($p = 0.011$). Women with stronger perceptions of unfair pricing are more likely to alter their purchasing decisions.
5. **Awareness does not directly influence purchasing behaviour :** While awareness strengthens perception, it does not directly lead to purchasing changes. Behaviour change occurs only when awareness converts into a strong perception of unfairness.
6. **Behavioural responses are moderate :** Although some respondents switch to unisex or male alternatives, a considerable percentage takes no action, indicating that knowledge does not always translate into behaviour.

1.9.2 Suggestions

Based on the insights derived from the study, the following recommendations are proposed:

1. **Increase consumer awareness through targeted campaigns :** Government bodies, NGOs, and consumer protection groups should organize awareness programs that highlight the existence and implications of the Pink Tax, especially through social media where young women are highly active.
2. **Encourage price transparency and comparative labelling :** Retailers and policymakers should consider mandating product price comparisons (male vs. female variants) on packaging or online listings so that consumers can make informed decisions.
3. **Promote unisex product lines to reduce gendered price disparities :** Businesses can introduce unisex versions of personal care and hygiene products to reduce gender-based pricing differences and meet the growing demand for equitable options.
4. **Strengthen consumer education in academic settings :** Colleges and educational institutions should integrate price discrimination awareness into consumer behaviour and finance-related courses to empower young women.
5. **Advocate for regulatory monitoring of gender-based pricing :** Policymakers should consider introducing guidelines or review mechanisms to examine gender-based pricing practices and take action where unjustified disparities exist.
6. **Support digital literacy initiatives :** Consumers often encounter price disparities online; thus, equipping women with digital comparison tools can enhance awareness and help them detect and avoid pink-taxed products.

1.10 Conclusion

The present study examined customer awareness, perception, and behavioural responses related to the Pink Tax among women consumers in Mumbai. The results demonstrate that awareness levels are consistently distributed across demographic groups, indicating that the Pink Tax is known among women irrespective of age, education, occupation, or income.

Perception emerges as a crucial component in shaping consumer behaviour. While awareness alone does not directly influence purchasing behaviour, it significantly contributes to forming a strong perception of unfair gender-based pricing. This perception, in turn, has a significant impact on behaviour, with women showing a higher likelihood of altering their purchase decisions when they strongly perceive the Pink Tax as unjust.

Overall, the study concludes that enhancing awareness must be accompanied by reinforcing consumer perceptions for behavioural change to occur. The findings underscore the importance of educational campaigns, transparent pricing, and regulatory interventions to reduce gender-based pricing inequalities. The study adds to the growing body of research advocating for a more equitable marketplace for women consumers.

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A Study of Income Patterns of Employees in Mumbai's Gig Economy

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Abstract

The main aim of this research is to examine income fluctuations among gig workers in various sectors in Mumbai and to assess the connection between income levels and financial stability. The research employs a quantitative and analytical framework and is grounded in an empirical survey involving 100 gig workers engaged in different areas of the gig economy in Mumbai. Information was gathered using a structured questionnaire to guarantee uniformity and dependability of answers. The evaluation utilized statistical methods like Analysis of Variance (ANOVA) to investigate sector-specific disparities in income variability and linear regression to analyze the connection between income levels and financial stability. The study's findings indicate that income fluctuations are a common and systemic problem among gig workers, not limited to a particular sector. This ongoing income uncertainty leads to financial strain and underscores the structural issues present in gig-based jobs. The study highlights the necessity for specific policy measures, reforms at the platform level to stabilize incomes, and additional research to create sustainable solutions focused on enhancing the long-term financial health and security of gig workers

Keywords : gig economy, gig services, income pattern, employees

Introduction

- **Background/context**

The gig economy is a labour market characterised by short-term contracts or freelance work rather than stable and permanent jobs. It includes jobs such as delivery boys, drivers, freelancers offering various services, and on-demand service providers, among others. People undertake such jobs to earn extra income or a regular income in addition to a stable job. Today, technology platforms like Uber, Swiggy, and Urban Cap are well-known for their gig services. Mumbai is the financial capital of the country, and as a metropolitan hub, it has witnessed rapid growth in gig-based employment due to its high demand for flexible services. Gig jobs offer flexibility and autonomy in work, and the income in such jobs is preference-based, varying from day to day or job to job. It falls under the informal sector.Employees working in the gig economy are typically independent workers who take on short-term or task-based jobs through digital platforms or physical forms. Their income is not stable and varies from job to job. Income in the gig economy is generally variable and performance-based, depending on factors such as the number of tasks completed, hours spent, commission rates of the platforms, location, and time of work, among others. Some jobs are well-paid, whereas others do not generate a handsome income. Employees working in this sector do not receive any formal benefits, such as health insurance, paid leave, or retirement plans.

Literature Review

- **Anwar, M. A., & Graham, M. (2025)** examined the stress experiences and coping mechanisms of food delivery partners in Hyderabad through a qualitative case study, which included in-depth interviews and thematic analysis. They identified factors contributing to stress among gig workers and suggested the need for government intervention to address this issue.
- **Beresewicz et al. (2021)** measured the size and features of the platform economy in Poland using mobile big data as a quantitative analysis, collecting data from smartphones to provide an alternative approach to measuring the gig economy compared to traditional surveys.
- **Brailovskaya et al. (2025)** shed light on the

economic lives and experiences of platform-based gig workers in India. The study was descriptive as part of the Digital Economy Research Impact Initiative. The primary purpose of the study was to understand the experiences of two-wheeler drivers engaged in delivery-based gig work across Indian urban areas.

- **Dey, C. et al. (2022)** explored the growth, opportunities, and challenges of the gig economy in India. A Systematic literature review and analysis were used for this study to provide a comprehensive understanding of the gig economy's impact in India.
- **Haque, F, & Dard, A. R. (2023)** described the challenges and opportunities related to job quality in India's gig economy. They employed qualitative methods, including semi-structured interviews with 10 gig workers from metropolitan cities, using purposive and snowball sampling. They reveal the economic, psychological, and social aspects that affect gig workers.
- **Hsieh, J. et al. (2023)** explored personalised policies and technologies that enhance gig work conditions. The study was qualitative, drawing on existing literature to recommend targeted and personalised policies for the benefit of gig workers.
- **Hsieh, J. et al. (2023)** engaged various stakeholders in co-designing solutions for gig workers' well-being through participatory design workshops that utilised storyboards based on real-life situations to elicit stakeholders' preferences for addressing the financial, physical, and social issues of gig workers.
- **Patil, S. (2025)** assessed the working conditions of gig workers in India through a comprehensive approach. A holistic study was used, incorporating various perspectives to analyse the sustainability of the gig economy in India and explore digital solutions.
- **Radhakrishnan, A., & Singha Roy, N. (2023)** examined the livelihoods of gig workers in ride-hailing services in Bangalore by conducting a qualitative study and in-depth interviews. Thematic analysis was used in this study to understand the economic and social aspects of gig workers' lives.
- **Sharma, R. (2023)** critically analysed and synthesised existing research on the gig economy in India to provide a comprehensive overview of the gig economy in India, including its size, growth and impact on the labour market.
- **Suvarnapathaki, P. et al. (2025)** analysed the less visible aspects of labour in India's food delivery gig economy through semi-structured interviews with 14 food delivery workers. They highlighted the challenges of waiting times and repetitive tasks in the gig work.
- **Tripathi, M. A. et al. (2022)** explore clients' motivation for using physical gig economy services in India through a survey-based study. The study was a quantitative analysis based on a structured questionnaire. They attempted to understand the factors influencing the use of services such as cleaning and mechanical work.

Research Statement

This study analyses the income patterns of employees working in Mumbai's gig economy and seeks to identify key factors that influence income variability among gig workers across different sectors. The findings would provide valuable insights into the economic realities of gig work in an urban Indian context.

Objectives of The Study

1. To examine the income variability among gig workers across different sectors in Mumbai.
2. To analyse the relationship between income levels and financial stability among gig workers.

Hypotheses of The Study

1. **H0 (Null Hypothesis) :** There is no significant difference in income variability among gig workers across different sectors.
2. **H0 (Null Hypothesis) :** There is no significant relationship between income levels and financial stability among gig workers.

Methodology

- **Research design :** This is a quantitative and analytical study that shows the income pattern of gig work.
- **Sampling :** The sampling universe in this study comprises youth working in the gig economy, and the sample size for data collection is 100 individuals from various sectors of Mumbai. The Purposive sampling method is used for this study, with the criteria of having experience with a gig job only.
- **Data collection :** Primary data are collected through survey methods using a structured questionnaire consisting of Likert scale-based questions that explore their income patterns.
- **Data analysis techniques :** Data is analysed, and inferential statistics is used in this study. The tests used are ANOVA and Linear correlation.

Results

Objective 1 : To examine the income variability among gig workers across different sectors in Mumbai.

The rise of the gig economy has transformed traditional employment structures, offering flexible, on-demand work opportunities through platforms such as Uber, Swiggy, Zomato, and various freelancing portals. While this model provides autonomy and flexibility, it often comes at the cost of income stability. Gig workers typically face inconsistent earnings influenced by fluctuating demand, platform algorithms, seasonal trends, and job availability. In a metropolitan setting like Mumbai, where the cost of living is high, understanding the degree and pattern of income variability is crucial for assessing the economic well-being of these workers. This objective aims to investigate whether income variability significantly differs across major gig sectors, namely ride-hailing, food delivery, and freelancing.

Table : Responses on Income Variability Among Gig Workers in Mumbai (N = 100)

Income Variability Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total Agree (%)*
My income varies from week to week	0	2%	2%	96%	0	**96%**
My income is affected by seasonal trends or demand	0	1%	2%	97%	0	**97%**
I can predict monthly income	3%	4%	2%	89%	2%	**91%**
I rely on different jobs for my steady income	28%	20%	1%	41%	10%	**51%**
I always have financial stress	8%	18%	3%	40%	31%	**71%**

Note : "Total Agree (%)" includes both "Agree" and "Strongly Agree" responses.

The results from the frequency table highlight the prevalence and nature of income variability among gig economy workers in Mumbai :

High Variability and Seasonality

- A vast majority (96% and 97%) of respondents agree that their income varies from week to week and is affected by seasonal trends or demand, respectively. This underscores a volatile and unpredictable income environment in the gig economy.

Limited Predictability

- Though 89% agreed and 2% strongly agreed that they could predict their monthly income, this seems contradictory to earlier results and may reflect some routine unpredictability (e.g., consistent fluctuations).

Dependency on Multiple Jobs

- While 51% of workers agreed or strongly agreed that they rely on different jobs for a steady income, a notable 48% disagreed or strongly disagreed, suggesting a split: some gig workers depend on a single platform, while others diversify their income streams.

Widespread Financial Stress

- A significant portion (71%) of gig workers reported ongoing financial stress, highlighting the economic vulnerability inherent in gig work despite its flexibility.

Hypothesis 1 (H0) : There is no significant difference in income variability among gig workers across different sectors

A one-way ANOVA was conducted to examine whether income variability differs across gig economy sectors. The null hypothesis (H0) stated that there is no significant difference in income variability among sectors. The results showed a non-significant effect, $F(1, 98) = 1.603$, $p = 0.208$, leading to the retention of the null hypothesis. This indicates that income variability does not significantly differ across gig sectors such as ride-hailing, food delivery, and freelancing in Mumbai. These findings suggest that income unpredictability is a systemic issue within the gig economy rather than being sector-specific. High levels of perceived income inconsistency and financial stress further reflect structural challenges faced by gig workers across all sectors. Levene's test for homogeneity of variances could not be performed due to insufficient variance in one or more groups, limiting the robustness of variance-related interpretations.

ANOVA Results

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.303	1	0.303	1.603	0.208
Within Groups	18.546	98	0.189		
Total	18.850	99			

- The p-value is 0.208, which is greater than the conventional alpha level of 0.05.
- This indicates that there is no statistically significant difference in the income variability of gig workers across sectors.

The ANOVA results indicate no significant difference in income variability among gig workers across sectors ($F(1, 98) = 1.603$, $p = 0.208$), leading to the retention of the null hypothesis. This suggests that income instability is a common experience across ride-hailing, food delivery, and freelancing sectors in Mumbai rather than being sector-specific. Supporting this, 96% of respondents reported weekly income fluctuations and 97% indicated that income is affected by seasonal demand. Despite high variability, 89% reported being able to predict their monthly income, suggesting adaptive strategies to manage earnings uncertainty. Additionally, 51% rely on multiple jobs for income stability, and 71% experience regular financial stress. Together, these findings highlight income unpredictability and financial insecurity as systemic challenges within the gig economy.Thus, the evidence suggests a pressing need for policy interventions or

platform-based income support mechanisms to address the widespread income volatility among gig workers in Mumbai, regardless of the sector in which they operate.

Objective 2: Income and Financial Stability

Hypothesis : H0: There is no significant relationship between income levels and financial stability.

Descriptive Statistics of Financial Stability Indicators (N = 100)

Statements	Mean	Std. Deviation	Minimum	Maximum
My income meets my expenditures in an effortless manner	2.46	1.520	1	5
I can save regularly	2.18	1.452	1	5
I have access to loans and credit	1.62	1.117	1	5
If I had more income, I would have managed my finances better	4.48	1.123	1	5

Note: Responses were recorded on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

To better understand financial stability perceptions among gig economy workers in Mumbai, descriptive statistics were computed for four key indicators :

- **Low perceived financial ease :** The mean score for the statement "My income easily meets my expenditures" was 2.46, indicating that a majority disagreed or were neutral, suggesting that many workers face difficulty in meeting daily expenses through their gig income.
- **Inability to save regularly :** The statement "I can save regularly" yielded a mean of 2.18, reflecting that most respondents disagreed, implying low savings potential among the participants.
- **Limited access to credit :** The lowest mean was recorded for "I have access to loans and credit" at 1.62, indicating strong disagreement and revealing that gig workers largely lack access to formal financial support systems, such as loans or credit lines.
- **Perceived need for more income :** In contrast, the statement "If I had more income, I would have managed my finances better" received the highest mean of 4.48, indicating strong agreement. This highlights a widespread belief that insufficient income is a significant constraint on better financial management.

Table 1 : Pearson Correlation between Monthly Income and Financial Stability Score

Variables	Pearson Correlation (r)	Sig. (2-tailed)	N
Monthly Income & Financial Stability Score	0.031	0.757	100

The correlation is very weak (r = 0.031). The p-value (0.757) is greater than 0.05, indicating that the relationship is not statistically significant.

Table 2: Model Summary – Linear Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.031	0.001	-0.009	0.89855

R^2 = 0.001 means that only 0.1% of the variance in financial stability is explained by income.

Table 3: ANOVA – Significance of the Regression Model

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.078	1	0.078	0.096	0.757
Residual	79.125	98	0.807		
Total	79.202	99			

The F-statistic is 0.096 with a p-value of 0.757, which is greater than 0.05, indicating that the model is not statistically significant.

Table 4: Coefficients – Regression Equation

Model	Unstandardised Coefficients (B)	Std. Error	Standardised Coefficients (Beta)	t	Sig.
(Constant)	2.597	0.298	—	8.728	.000
Monthly Income	0.039	0.125	0.031	0.310	.757

Financial Stability Score=2.597+0.039× (Monthly Income) \text {Financial Stability Score} = 2.597 + 0.039 \times (\text {Monthly Income}) Financial Stability Score=2.597+0.039× (Monthly Income)

The findings from both Pearson correlation and linear regression analysis indicate that there is no significant relationship between monthly income levels and financial stability among gig economy workers in Mumbai. The extremely weak correlation and statistically insignificant regression results support the acceptance of the null hypothesis.

These results imply that earning more does not necessarily equate to greater financial stability in the gig economy. Financial well-being may be more closely linked to factors such as job security, access to benefits, the number of income sources, and the predictability of work rather than income amount alone.

Discussion

Hypothesis interpretation

1. Objective 1 : Income Variability Across Sectors

Hypothesis (H0): No significant difference in income variability among gig workers across sectors.

Findings

- Ninety-six per cent of workers report weekly income variability, and 97% cite a seasonal impact.
- 51% rely on multiple income sources; 71% report financial stress.
- ANOVA Result: F(1, 98) = 1.603, p = 0.208 (not significant).
- Conclusion: Income variability is high and widespread, but it does not differ significantly across gig sectors (ride-hailing, food delivery, freelancing).

- Implication: Income instability is a systemic feature of gig work, not a sector-specific issue.

2. Objective 2 : Relationship Between Income and Financial Stability

- Hypothesis (H0): No significant relationship between income and financial stability.

Descriptive Insights

- Mean scores indicate difficulty in meeting expenses (2.46), low savings (2.18), and minimal access to credit (1.62).
- Strong belief (4.48) that more income would improve financial management.

Statistical Analysis

- Pearson correlation: r = 0.031, p = 0.757 (very weak, not significant).
- Regression: R^2 = 0.001, F(1,98) = 0.096, p = 0.757 (not significant).
- Conclusion: No significant relationship exists between income levels and financial stability.
- Implication: Financial stability is influenced more by job security, predictability, and support systems than by income amount alone.

Major Findings

1. High-Income Variability

- Ninety-six per cent of gig workers reported experiencing weekly income fluctuations.
- 7% said their income is affected by seasonal trends and demand.
- No Sectoral Difference in Income Variability
- ANOVA results show no significant difference in income variability across sectors like ride-hailing, food delivery, and freelancing (p = 0.208).

3. Widespread Financial Stress

- Seventy-one per cent of workers reported experiencing ongoing financial stress.
- 51% rely on multiple jobs for a steady income.

4. Weak Financial Stability

- Mean scores indicate difficulty in meeting expenses (2.46) and low ability to save (2.18).
- An average score of 1.62 for access to loans and credit indicates limited financial support.

5. Income Not Strongly Linked to Financial Stability

- Pearson correlation between income and financial stability: r = 0.031, p = 0.757 (not significant).
- Linear regression confirmed that income does not significantly predict financial stability (R^2 = 0.001).

6. Perceived Income Insufficiency

- A mean score of 4.48 showed strong agreement that higher income would improve financial management.

7. Systemic Issues Over Sector-Specific Challenges

- Income instability and financial insecurity are systemic issues in Mumbai's gig economy, not confined to any specific sector.

Conclusion

The study's findings reveal that income variability and financial instability are pervasive challenges among gig workers in Mumbai, transcending sectoral boundaries. The study highlights the need for policy interventions addressing systemic issues, platform-level reforms to stabilise earnings, and further research on sustainable solutions for gig workers' financial well-being. Ultimately, the results paint a picture of an economic model where flexibility comes at the cost of stability, requiring multi-stakeholder approaches to create more equitable working conditions.

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Financial Innovations in Banking, Insurance and Financial Markets : An Analytical Study

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Abstract

Financial innovation is one of the key driving forces influencing the evolution of financial systems today. Changes in technology and regulation, globalization, consumer behavior have all fundamentally altered the classical models of banking, insurance and financial markets. Significant developments including digital banking, AI technology, blockchain, InsurTech, algorithmic trading and decentralized finance (DeFi), etc., have transformed the production, diffusion and consumption of financial services. This study conducts a detailed analysis of financial innovations across banking, insurance, and markets, addressing their mechanisms/drivers, types, effects, advantages, risks, and regulatory constraints. Employing a qualitative/analytical methodology based on secondary data, the paper concludes that financial innovation facilitates efficiency, financial inclusion, and risk management and introduces security risks, both technical and security risk (e.g., cyber security risks, ethical concerns, and systemic vulnerabilities). The paper opines that sustainable financial innovation should adopt a balanced approach to ensure the technological progress must not be taken at the cost of regulatory control, ethical accountability, and financial stability.

Keywords : Financial Innovation, FinTech, Banking Innovation, InsurTech, Capital Markets, Blockchain, Digital Finance .

1. Introduction

- **1.1 Concept of Financial Innovation :** Financial innovation refers to the development and implementation of novel financial products, technologies, and models to enhance the flow of finance. These developments are intended to make financial services more effective, decrease transaction costs, reduce risk, and provide access to financial services to a wider group of people. In the past, financial innovation has been a vital factor in economic development. The founding of banks, insurance contracts, stock exchanges and payment systems laid the groundwork for modern economies. The pace of innovation in the last few decades has been a major factor, driven even more by technological progress such as the internet, mobile gadgets, cloud computing, artificial intelligence (AI) and blockchain technology.
- **1.2 Evolution of Financial Innovation :** Financial innovation has evolved in phases: Early innovations : Paper money, joint-stock companies, insurance pooling Industrial era : Central banking, modern stock exchanges, corporate bonds Digital era : Online banking, electronic trading, mobile payments FinTech era : Blockchain, cryptocurrencies, AI-driven finance, DeFi Each phase reflects the changing economic environment and technological capacity of society.
- **1.3 Purpose of this Study :** This study will explore significant financial innovations, particularly in banking, insurance and markets and examine the causes of financial innovations. It also investigates the economic and social consequences of innovation and identify risks and threats related to financial innovation . The study will also discuss regulatory responses and future directions .

2. Literature Review

Academic literature emphasizes financial innovation as a springboard for development but also a source of instability. The idea of innovation as a driver of economic growth was advanced by Schumpeter (1934). Tufano

(2003) described financial innovation as changes in financial products and processes that enhance market efficiency.

According to Frame and White (2014), innovation as it functions, enhances service quality in banking but also carries risks in terms of operational risk. Arner et al. (2016) contend that FinTech is disrupting conventional financial intermediaries through the provision of faster, cheaper and more accessible forms of service. At the same time, Merton (1995) cautions that unbridled financial innovation that is poorly controlled can lead to financial problems. In insurance, it is observed that big data and IoT technologies can enhance underwriting precision, while bringing privacy issues to the fore. For capital markets, algorithmic trading has improved liquidity but also multiplied volatility in periods of stress.

3. Research Methodology

The research is based on qualitative descriptive analysis of secondary data. Data are sourced from research journals, books, industry reports, central bank publications, and policy documents. A comparative sectoral analysis is developed to investigate financial innovation in banking, insurance and markets. The paper emphasizes conceptual analysis, illustration of relevant cases, and critique of literature rather than empirical modelling.

4. Financial Innovation in Banking Sector

4.1 Digital and Mobile Banking : Perhaps one of the most important banking innovations in the banking sector is Digital Banking, it allows the customers to access banking services on a mobile application and using Internet-based platforms. The growth of the digital banking does away with geographical boundaries and dependence on face-to-face branches. Some of the features are : Online account opening, Instant fund transfers, Digital loan processing, Chatbots powered by AI Neobanks are internet-only institutions, offering low-cost customers easy access and quick transactions.

4.2 Payment System Innovations : Innovations in payment platforms include Mobile wallets, Contactless cards, QR codepayments, and Real-time gross settlement systems These changes to payment methods have changed the way that consumers make purchases and transactions with more speed and convenience.

4.3 Blockchain and DLT : Blockchain provides secure, open, and decentralized records. In banking, it is used for Cross-border payments, Trade finance, Know Your Customer (KYC) processes ,Smart contracts. Blockchain reduces settlement time and costs while improving transparency.

Cross-Border Payments and Remittances: It's the primary use. Blockchain solutions such as RippleNet and J.P. Morgan's Kinexys (formerly Onyx/Liink) facilitate international cash transfers that are almost instantaneous, bringing down the delays (from days to seconds or minutes) and expenses of legacy systems such as SWIFT.

Clearance and Settlement Systems: By presenting a single, common and immutable track, blockchain facilitates the more sophisticated, multi-day settlement and clearance of securities and interbank transactions, mitigating counterparty risk and freeing up capital.

Trade Finance: Traditionally a paper-heavy business model characterized by numerous intermediaries, trade finance is evolving into a more auditable world. Banks like HSBC digitize trade documents (letters of credit, invoices, etc.), automate payments using smart contracts and provide real-time tracking, lowering transaction times from weeks to hours on platforms.

- **Digital Identity Verification (KYC/AML) :** Blockchain helps enable secure, shared and immutable customer identity evidence. This breaks down and fast tracks the KYC and Anti-Money Laundering (AML) compliance for banks, by enabling secure information to be exchanged between, and avoiding duplicate verification activities.
- **Asset Tokenization :** This is a method of expressing real-world assets (e.g. real estate, stocks, bonds) as tokens on a blockchain. Tokenization allows fractional ownership, creating liquidity and increasing investor access to markets that have otherwise been illiquid. Smart Contracts: These self-executing electronic contracts, with terms written directly into code, automatically enforce and automate agreement conditions. These are ideal for automated loan disbursements, processes for insurance claims and for other financial agreements, minimizing human error while increasing efficiency.
- **Fraud Prevention and Security :** Blockchain ledger is decentralized and immutable which makes it difficult to alter recording and hack transaction data in the process. This enables a tamper-proof audit trail of transactions, and makes it more secure and vastly reduces the chances of financial fraud and cyberattacks.

Benefits to the Industry

- **Increased Efficiency & Speed :** Automating manual, paper-based processes and eliminating those and removing intermediaries makes

operations and transaction settlement times substantially faster and automated processes.

- **Cost Reduction :** Eliminating middlemen and manual reconciliation efforts of transactions costs by cutting out people who provide financial intermediaries at banks can result in big operational cost savings to banks and less fees to the customer.
- **Increased Transparency and Trust :** All authorized people on a network have a one common, constant, and transparent source of truth (the shared ledger), providing that common truth to everyone who must have access at all times.
- **Financial Inclusion :** Blockchain can help improve financial inclusion through peer-to-peer lending and digital identity solutions that would be without conventional banking mechanisms to increase access to the unbanked and underbanked communities.

4.4 Artificial Intelligence and Automation : Artificial Intelligence, and Automation AI-powered analytics (in banks)- The use of AI in banking provides AI to help in the following Banking use cases: Credit scoring, Fraud detection, Personalized financial advice andrisk modelling..AI technology in banking enhances customer service with chatbots, boosts security via advanced fraud detection, automates back-office tasks like loan processing, provides personalized financial advice through robo-advisors, and improves risk management with predictive analytics, leading to greater efficiency, cost savings, and new revenue opportunities across retail, commercial, and investment banking. Automation enhances efficiency and also enhances functionality. It raises issues over data privacy and bias within the algorithms

5. Financial Innovation in the Insurance Industry

- **5.1 The Emergence of InsurTech :** InsurTech is the technology and application of innovation applied to insurance services to promote financial innovation in insurance. The traditional Insurance sector used to be subject to underwriting by hand and claims processing from a human in a manual process. But today's digital platforms ease the time needed for these operations.

5.2 Big Data & Predictive Analytics : Insurers are based on big data from different sources (social media, sensors, transaction logs) to optimise risk assessment. It also helps toidentify fraud tailor premiums. Predictive analytics enable insurers to price policies more accurately.

5.3 Usage-Based and On-Demand Insurance : UBI calculates the premiums based on the actual usage/behaviour, for example driving patterns. On-demand insurance allows consumers to purchase coverage only when they need it and is more affordable.

5.4 Internet of Things (IoT) : Iin insurance IoT devices, such as wearables and smart home sensors, facilitate real-time monitoring of risk. It encourages insurers to prevent losses rather than to just reimburse for events after they arise.

6. Financial Innovation in Capital Markets

6.1 Electronic trading platforms : Electronic trading platforms have replaced floor-based trading markets. These platforms provide: Greater market access Lower transaction costs Improved transparency Retail investors now participate directly in markets through online platforms.

6.2 Algorithmic and High-Frequency : Trading Algorithmic trading uses computer programs to execute trades based on predefined strategies. High-frequency trading executes trades in milliseconds, increasing liquidity but sometimes destabilizing markets.

6.3 Crowdfunding and Alternative Finance : Crowdfunding platforms connect investors directly with entrepreneurs. This innovation supports small businesses and startups that lack access to traditional financing.

6.4 Blockchain, Tokenization : DeFi Tokenization converts physical or financial assets into digital tokens on a blockchain. Decentralized finance (DeFi) platforms enable lending, borrowing, and trading without intermediaries. These innovations democratize finance but also pose regulatory challenges.

7. Drivers of Financial Innovation

Key drivers include technological advancement, regulatory reforms, deregulation, increased competition, changing consumer expectations and globalization of financial markets. Financial institutions innovate to maintain competitiveness and respond to customer demand for faster, cheaper services.

8. Impact of Financial Innovation

- 8.1 Financial Inclusion Digital financial services have expanded access for unbanked populations, especially in developing economies.
- 8.2 Economic Efficiency Automation and digitalization reduce operational costs and improve productivity.
- 8.3 Risk Management Advanced analytics improve credit assessment and fraud detection.

9. Risks and Challenges of Financial Innovation

- 9.1 Cybersecurity Risks Digital systems are vulnerable to hacking and data breaches.
- 9.2 Regulatory Challenges Innovations often outpace regulations, creating legal uncertainty.
- 9.3 Ethical and Social Concerns AI-based decision-making may result in bias or discrimination.
- 9.4 Systemic Risk Interconnected digital platforms may amplify financial crises

10. Regulatory Responses

- **Regulators have adopted measures such as :** Regulatory sandboxes Enhanced cybersecurity frameworks Consumer protection laws Exploration of Central Bank Digital Currencies (CBDCs) Effective regulation must balance innovation with financial stability.

11. Future Trends in Financial Innovation

- **Future developments are expected in :** AI-driven financial services Quantum computing applications Integration of finance with Web3 ecosystems Sustainable and green finance innovations

12. Conclusion

Financial innovation has fundamentally transformed banking, insurance, and financial markets. While it improves efficiency, inclusion, and risk management, it also introduces significant challenges. Sustainable financial innovation requires responsible governance, adaptive regulation, and ethical technology use. Policymakers, financial institutions, and technology providers must collaborate to ensure innovation supports long-term economic stability and inclusive growth.

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To Study of Impact of GST Rate Cut or Reduction on Several Sectors

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Abstract

Due to GST Rate cut or Reduction by GST Council in 56th GST Council meeting impact on several sectors on the Indian Economy. It is observed that, there will be very positive impact which will helpful to boost demand of various luxurious and essential things. It will benefited to various parties such as Manufacturer, Dealer, Wholesaler, and Government and also to the Consumer.

Key Words : GST, GST Council, GST Rate Reduction, Positive Impact, Beneficiaries

"To Study of Impact of GST Rate Cut or Reduction on Several Sectors". GST Rate – In India, the Goods and Services Tax (GST) Rate is a tax percentage that is applied on the sale of goods and services. Thus, there is a CGST Rate, a SGST Rate, and an IGST GST Rate, and the IGST GST Rate is half of the CGST Rate and the SGST Rate. To put it simply, all businesses enrolled under GST must issue invoices with GST amounts calculated on the value of taxable supply and derived by applying a tax percentage to the taxable supply value. For example, the GST rate is a percentage rate. Reduction or Cut in GST Rate and their Impact on Several sectors - The 56th Meeting of the GST Council, chaired by the Union Finance & Corporate Affairs Minister, on September 3, 2025, has brought in a simple GST structure with deep rate cuts across key sectors of trade and commerce, covering essential industries like leather, footwear, paper, textiles, handicrafts, toys, packaging, and logistics, by reducing the number of GST slabs to 5% on many goods and rationalizing rates in transport and allied sectors to reduce costs for consumers, ease compliance for traders, and enhance competitiveness for Indian businesses. In shorts following are the Sector wise reduction or Cut in GST Rates by council and their impacts :

1) Leather and Footwear Sector : Leather and footwear industry is a major employer in India and has a good export base. GST rationalization in this case makes the burden on manufacturers less and products more accessible to consumers.

i) GST was cut down to 5% on Chamois leather, composition leather with a leather or leather fiber base, and Leather prepared after tanning or crusting.
ii) Footwear that is priced at or below ?2500 per pair is now subjected to a reduced GST of 5% which has a direct benefit on the consumers.
iii) Job work supply relating to hides, skins, and leather (under chapter 41) also reduced by 12 to 5% lowering the cost of production by MSMEs.
iv) Reduction in taxation will enhance competitiveness of Indian footwear and leather exports in the world market.

2) E-Commerce, Paper and Packaging : E-commerce is among the most rapidly expanding industries, which relies greatly on efficient packaging and logistics. GST cuts in this region make businesses and consumers costs cheaper.

i) Packing paper, cases, cartons, boxes (of corrugated paper or non-corrugated paper or paper boards) and paper pulp moulded trays are now taxed at 5% and this has helped to cut down the packaging and shipping cost per order.
ii) It lowers the logistics and packaging expenses, which makes the goods cheaper to the consumers. It will also assist the Food processing units.
iii) This will reduce the cost of packing per shipment and will be beneficial to MSME sellers on e-commerce sites and in wholesale markets, who will have better margins and affordability to consumers.
iv) A cut in the GST on trucks and delivery vans

(28 to 18) lowers the freight rates per tonne-km, enhancing the efficiency of the last-mile deliveries. India has a supply chain that is supported by trucks. They transport 65-70 percent of goods traffic in India.

v) The low cost of trucks will assist directly in lowering the logistics cost, enhancing export competitiveness.

vi) The synergy promotes logistics, warehousing, and online retail ecosystems, making India more competitive in the global supply chains.

3) Wood Products : Wood substitutes of agro-based and eco-friendly are taxed less, promoting sustainable production and competitiveness of MSME.

i) GST was cut down to 5% on rice husk board, glassfibre reinforced gypsum board, cement bonded particle board, jute particle board, bagasse board, sisal fibre board etc.

ii) Veneering sheets, bamboo flooring, casks, barrels, vats, wood tubs.

iii) Helps MSMEs in wood production and encourages environmentally friendly substitutes.

iv) This will render the products of most of the MSME wood manufacturing units competitive.

4) Handicrafts : The traditional goods are cheaper and competitive in the world market since the handicrafts sector, which is crucial to artisans and exports, is subject to rationalization of taxes.

i) GST reduced to 5% on wooden, stone and metals idols.

ii) Relates to paintings, drawings, original engravings, handcrafted candles, carved wood products, handbags including pouches and purses, stone art ware, stone inlay work, tableware and kitchenware of clay and terracotta.

iii) Covers Glass statutes, iron, aluminium, brass/ copper, etc. artware.

iv) Reforms enhance the cultural economy and artisanal livelihoods in India.

5) Commercial Goods Vehicles : Trucks and delivery vans are the main drivers of the Indian logistics system, so GST reductions will reduce transportation and export expenses.

i) GST was cut by 28 percent to 18 percent on commercial goods vehicles.

ii) Minimizes the capital expenditure of truck owners, decreasing freight rates per tonne-km.

iii) This will be a trickle-down effect. It will result in the reduction of the cost of transporting agri goods, cement, steel, FMCG, and e-commerce deliveries. It will minimize inflationary pressures.

iv) Helps MSME truck operators, which constitute a significant portion of the road transport industry in India.

6) Tractor Parts : India has one of the largest tractor markets in the world and this GST reduction will stimulate both local and export market. The manufacturing associated with agriculture is also boosted because the tractors and their components now attract reduced GST, which favors the farmers and the industry.

i) The parts used in the manufacturing of tractor such as tyres, gears etc. will also be taxed at 5%.

ii) Increased production will be an advantage to ancillary MSMEs that produce engines, tyres, hydraulic pumps, and spare parts. The GST Cut will also enhance the position of India as a tractor manufacturing hub in the world.

7) Fruits, Vegetables & Food Processing : Agro-processing industries also benefit by lower GST which encourages cold storage and minimizes food wastage. Lowering of GST on most of the food items to 5% or NIL consolidates the whole food processing value chain between the farmers and MSMEs, retailers and exporters.

i) Ready-made and canned vegetables, fruits and nuts charged at 5% (reduced to 12%).

ii) It promotes cold storage, food processing and value addition.

iii) Helps farmers to get enhanced prices on their produce and minimizes wastage of perishables.

iv) Increases the exports of processed food products, which will be a strong positioning of India as an agri-export hub.

8) Textile : The GST rationalisation in textile eliminates structural anomalies, lowers cost, increases demand, exports and maintains employment. It will enhance the whole textile value chain between fibre and garment, by minimising cost distortions. It will also rectify the anomalies at the fibre level, minimise the cost at the yarn/fabric level, increase the affordability of the garments, rejuvenate the demand at the retail level, and improve the competitiveness of the exports. This will provide momentum to Fibre neutral policy.

i) Man-made fibres (MMF) GST decreased by 18 to 5%.

ii) Man-made yarns cut from 12% to 5%.

iii) The decrease will address the Inverted Duty Structure (IDS) problem in MMF. It will harmonize fibre, yarn and fabric rates eliminating old anomalies that had added working capital load to manufacturers.

iv) It will render synthetic textiles more competitive, which will decrease dependence on imports.

v) The price reduction will render the Indian

MMF-based garments more price-competitive in the global markets, which will help India in its goal of becoming a global textile hub. It will favor the exporters.

9) Toys & Sports Goods : The toy industry, which is significant in child development and MSME production, will enjoy lower GST.

i) Toys and sports goods reduced GST to 5%.
ii) Makes toys cheaper and promotes early childhood learning by playing.
iii) Increases Vocal for Local program by assisting local MSME toy manufacturers.
iv) Shields against influx of cheap imports by neighbouring countries.

Sector Wise Reduction or Cut in GST Rates by GST Council

Sector/Products	Old GST Rate	New GST Rate
Cartons, Boxes and Cases of Corrugated/ Non-Corrugated Paper or Paper Boards	12%	5%
Paper pulp moulded trays	12%	5%
Chamois leather and composition leather with a basis of leather or leather fibre	12%	5%
Leather after tanning/crusting	12%	5%
Footwear (≤ ₹2,500 per pair)	12%	5%
Supply of job work in relation to hides, skins and leather falling under Chapter 41	12%	5%
Rice husk/glassfibre reinforced gypsum/ cement bonded particle/jute particle/ bagasse/sisal fibre boards	12%	5%
Sheets for veneering, bamboo flooring, casks, barrels, vats, tubs of wood.	12%	5%
Idols (wood, stone, metals)	12%	5%
Paintings, drawings and original engravings	12%	5%
Handcrafted candles, carved wood products, handbags including pouches and purses	12%	5%
Stone art ware, stone inlay work, tableware and kitchenware of clay and terracotta	12%	5%
Glass statutes, artware of iron, aluminium, brass/copper	12%	5%
Commercial goods vehicles (trucks, delivery vans)	28%	18%
Prepared/preserved vegetables, fruits, nuts	12%	5%
Man-made fibres (MMF)	18%	5%
Man-made yarns	12%	5%
Toys and sports goods	12%	5%

Impact of GST Rate Reduction/ Impact analysis

Next-Gen GST : Benefits for All

Besides reducing tax rates, the Next-Generation GST reforms are also meant to create a positive feedback mechanism of economic growth.

1) Lower Prices, Higher Demand : Low prices of goods and services increase household savings and spending.

2) Promotion of MSMEs : Small businesses will have lower costs and be more competitive due to decreased rates on inputs like cement, auto parts, and handicrafts.

3) Ease of Living : A two-rate structure makes it easier to make decisions; less disagreements and compliance are easier.

4) Broad Tax Base : Reduced rates encourage compliance, which increases the tax base and increases revenue.

5) Manufacturing Support : Inverted duty structures are rectified by increasing exports and domestic value addition.

6) Revenue Growth : Collections increase when rates are reduced and compliance enhanced as has been seen in the past reforms.

7) Economic Momentum : The increased demand with reduced costs leads to the increase in tax base, which consequently leads to the increase in revenues and sustainable growth.

8) Social Protection : The exemption of essential medications and insurance against GST is an improvement of access to healthcare and household security.

9) These changes, when combined together, ensure that GST is pro-business, people-centric, and in tandem with what India desires to achieve in terms of internationalization.

Industry impact

i) Increase to the whole industry in passenger cars, two wheelers, commercial and agricultural cars.
ii) Less classification and taxation controversy: Ease of protracted controversy on GST rates on auto components with one GST rate of 18.
iii) Laissez-faire attitude towards anti-profiteering: This is an indication that the government trusts the industry and the market forces to deliver fair benefit to the entire economy.
iv) The Indian auto sector has been facing some challenges in the recent past but with such GST initiatives, a positive turnaround is expected.

Impact on Consumer

i) Budget segment relief : The greatest relief is on budget cars and two-wheelers which directly impact the middle-class and the ordinary consumers.

ii) The cut in GST on farm machinery will likely lead to a significant improvement in the affordability of farm machinery, which is a historic change in the industry.

iii) A lower GST on passenger transport vehicles will increase accessibility and enhance mobility to all classes of the population.

iv) Compensation cess relief : This has a minor effect on larger cars (including SUVs and luxury vehicles), a reduction to 40% compared to the existing rate of 43% to 50% including cess.

v) Reduced rate differentiation : EVs still have a tax advantage, but the decreased difference

makes hybrids also appealing, which promotes the use of fuel-efficient vehicles.

vi) **Enhanced consumer spending power :** The reduced GST rates will in effect boost the disposable income, which will enhance the purchasing power and the consumption growth in general, which is in line with the vision of the government of enhancing the prosperity of the middle classes by 2047.

The Indian automobile industry has experienced a boom in demand, particularly of mass-market cars, following the GST rate cuts in September 2025. The reductions made entry-level cars, two-wheelers, tractors and commercial vehicles affordable, which increased consumer confidence and sales before the festive season.

Positive impacts

i) **Increased demand of small cars and two-wheelers :** The GST on small cars and two-wheelers (below 350cc) was cut by 28% to 18% and thus became much cheaper to middle-class and first-time buyers. This has revived the entry-level car segment and increased rural mobility.

ii) **Commercial and agricultural growth :** Commercial vehicle (buses and trucks) and farm tractor (12 to 5) reductions (28 to 18 and 12 to 5) decreased the costs of operation in the transport and farm sectors. This has stimulated the need to upgrade the fleet and helped the agricultural sector.

iii) **Easier tax regime and compliance :** The reforms made the tax system easier through consolidation of rates and elimination of the complex cess structure on most types of vehicles. This simplifies the compliance requirements of manufacturers, dealers and suppliers.

Recommendations

The GST rate reduction has been a powerful catalyst for the various sectors, driving renewed growth in mass-market and commercial segments by making things more affordable. The simplification of the tax structure has improved ease of doing business for manufacturers and dealers. Quick adaptation by the industry. Overall, the rate cuts have positively impacted consumer sentiment, signaling a healthy recovery phase for the automotive industry.

A study on the impact of a Goods and Services Tax (GST) rate reduction in the automotive sector should recommend analyzing the boost in demand, particularly for entry-level vehicles, and the resulting positive effects on sales, manufacturing, and dealership networks. It should also examine the potential shift in consumer behavior, the impact on various sectors and potential price changes for consumers and the industry. Additionally, studies should assess the impact on last-mile connectivity via finance sector

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The Tokenization Revolution : A Policy Framework for the Future of Finance

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Abstract

Tokenization represents a paradigm shift in the evolution of financial systems, comparable to historic milestones such as the emergence of joint-stock companies and electronic markets. By converting real-world assets into blockchain-based digital tokens governed by smart contracts, tokenization redefines ownership, transferability, and asset management. This research paper provides a comprehensive and policy-oriented analysis of tokenization, examining its underlying mechanics, economic impact, global adoption patterns, regulatory readiness, and the critical challenges that influence its mainstream implementation.

The study explains the end-to-end tokenization lifecycle—from asset sourcing and token creation to automated governance and asset management—highlighting how smart contracts enable transparency, efficiency, and disintermediation. It analyses the transformative economic implications of tokenization, including democratization of investment through fractional ownership, enhanced liquidity for traditionally illiquid assets, significant cost and time reductions in settlement processes, and the rise of programmable finance. Empirical illustrations from global markets, including initiatives by BlackRock, Goldman Sachs, and World Bank, demonstrate growing institutional adoption.

Further, the paper evaluates global market trajectories, projecting a multi-trillion-dollar expansion by 2030 as estimated by McKinsey, and categorizes countries based on regulatory and technical readiness. While leading economies have established progressive frameworks, emerging markets—including India, where the Reserve Bank of India has initiated pilot projects—remain at a critical threshold.

The study concludes that tokenization holds immense potential to create a more efficient, transparent, and inclusive financial ecosystem. However, without harmonized regulation, robust security standards, and proactive policy intervention, it risks deepening global financial and digital divides. The paper emphasizes the urgent need for coordinated, forward-looking policies to responsibly harness the benefits of a tokenized future.

Keywords : Tokenization, Blockchain Technology, Digital Assets, Smart Contracts, Financial Markets and Regulatory Framework

Introduction

A Paradigm Shift in Financial History

Tokenization is not a mere technological update; it is a revolutionary shift in how we own, manage, and transfer value, comparable in scale to the most pivotal innovations in commercial history. Just as the printing press (1440) democratized knowledge by making books affordable, the telegraph (1844) unified markets by enabling real-time information flow, and limited liability laws (1855) unlocked capital by protecting investors, tokenization is poised to fundamentally reshape our financial architecture. It builds on the principles of the first public joint-stock company (1602), which allowed thousands to invest in a single venture, and the first electronic stock market (1971), which brought transparency and efficiency to trading. Each of these breakthroughs lowered barriers, increased efficiency, and redefined commerce for a new era. Tokenization is the next logical—and transformative—step in this evolution.

This research paper provides a comprehensive analysis for policymakers and industry leaders on the mechanics, benefits, and challenges of this emerging financial paradigm. By examining the current global landscape and assessing national readiness, we aim to provide a clear framework to guide the development of sound, forward-looking policy that can harness the

immense potential of tokenization for a more efficient and inclusive global economy.

1. The Mechanics of a New Financial Architecture : For regulation to be effective and implementation strategic, policymakers must possess a foundational understanding of the underlying architecture. This technology is not an abstract concept but a practical, process-driven framework that automates trust and disintermediates complex transactions. This section deconstructs the core mechanics to provide the clarity necessary for robust policy formulation.

The Core Components : Digital Assets and Automated Governance

At its core, tokenization is the process of converting the ownership rights of a real-world asset—such as property, art, or stocks—into a digital token on a blockchain. This token acts as a "digital certificate" of ownership, containing all relevant information about the asset and its legal title. Because these tokens are digital, they can be easily transferred, traded, or subdivided into smaller fractions.

This process is governed by smart contracts, which are self-executing programs with the terms of an agreement directly embedded in their code. These automated contracts handle complex processes that traditionally required manual intervention from intermediaries. Functions such as dividend payments, regulatory compliance checks, and ownership transfers are automatically executed when pre-defined conditions are met, creating a system that is both highly efficient and transparent.

The Five-Stage Tokenization Process

The end-to-end process of bringing a real-world asset onto a blockchain can be understood as a five-stage lifecycle:

1. **Asset Sourcing :** This initial stage involves defining the specific legal and regulatory rules for converting a particular asset into a digital token. It establishes the legal framework and compliance requirements that will govern the tokenized asset.
2. **Token Creation :** A specialized digital asset entity is established to create the tokens. This includes deciding on the number of tokens and how they will be fractionally divided to represent ownership in the underlying asset.
3. **Smart Contract Implementation :** The automated smart contracts are developed and deployed on the blockchain. These contracts encode the rules for the token's entire lifecycle, from issuance and distribution to the handling of dividends, voting rights, and eventual redemption.
4. **Token Distribution :** The newly created tokens are distributed to investors. This can be done through private sales to accredited investors or via public offerings on a blockchain-based platform, making the asset accessible to a global market.
5. **Asset Management :** Once distributed, the smart contracts automate the ongoing management of the asset. This includes processes like managing token-holder voting, distributing profits or rental income, and overseeing system maintenance without the need for traditional administrators.

2. Analysing the Transformative Economic Impact : The benefits of tokenization are not merely incremental improvements to existing financial processes. They are fundamental drivers of economic change that promise to reshape investment, capital formation, and asset management by making finance more democratic, efficient, and intelligent.

Democratizing Investment and Enhancing Liquidity

Tokenization dismantles the traditional barriers that have kept ordinary investors from participating in high-value asset classes. By enabling fractional ownership, it makes previously inaccessible investments available to a much broader audience. For example, a $10 million commercial property can be fractionalized into 10,000 tokens of $1,000 each. This allows individuals to own a piece of premium real estate, an opportunity once reserved for large institutions and high-net-worth individuals.

Crucially, this democratization extends beyond asset classes to geography, dissolving national boundaries to create a truly global marketplace. An investor in Bangkok can purchase a token representing property in New York, while an investor from Jhansi can acquire a token representing a commodity in Africa. Capital can flow more freely to where it is most needed, and investors can access a diversified global portfolio with unprecedented ease.

Furthermore, this technology brings liquidity to traditionally illiquid assets. Markets for assets like private equity and real estate, where sales can take months to complete, can be transformed into dynamic, 24/7 trading environments. This newfound liquidity unlocks the value trapped in these assets and allows for more efficient capital allocation across the economy.

Driving Unprecedented Efficiency and Cost Reduction

By automating complex financial workflows, blockchain technology dramatically increases operational efficiency. The settlement of transactions, which can take days in traditional systems, is reduced to moments.

A clear example is the tokenized bond issued for the European Investment Bank, which settled on the same day of issuance, a stark contrast to the standard five-day settlement period. This speed, combined with the removal of intermediaries like brokers and clearinghouses, leads to significant cost savings. According to an estimate by Goldman Sachs, this disintermediation can lower transaction costs by as much as 90% in certain cases.

The Advent of Programmable Finance

Tokenization introduces the revolutionary concept of "programmable finance," where assets and money become "smart" and can execute decisions based on embedded rules. This allows for the creation of intelligent, automated financial products that respond to real-world data without human intervention. Concrete examples of this are already emerging:

- **Smart Insurance :** A crop insurance policy can be programmed to automatically trigger a payout to a farmer's account if weather data confirms that temperatures fell below zero for more than 48 hours.
- **Automated Startup Funding :** Investment funds for a startup can be released in stages, with the smart contract automatically transferring the next tranche of capital as soon as the company verifiably achieves pre-defined business milestones.

Creating Novel Revenue Streams

Perhaps most profoundly, tokenization unlocks new capital by making previously non-tradable or indivisible assets investable. It allows owners to generate immediate liquidity from future value. A property owner, for instance, could tokenize the future rental income from their building, selling those tokens to investors for upfront capital. The investors, in turn, receive a direct and automated stream of rental income. This model can be extended to other forms of future income, such as music royalties and carbon credits, creating entirely new markets and revenue streams.

3. Global Adoption and Market Trajectory : While still in its nascent stages, the adoption of tokenization is accelerating across key financial sectors. Major institutions are moving beyond pilot projects to implement blockchain-based solutions, demonstrating growing confidence in the technology's potential. This section provides a snapshot of the current market and its projected growth trajectory.

Current Use Cases Across Key Asset Classes

Tokenization is gaining traction across a range of financial products, with certain asset classes leading the way due to their compatibility with blockchain's efficiencies.

Asset Class	Key Developments & Examples	Observed Benefits
Mutual Funds	Tokenized money market funds have raised over **$1 billion**. Players include BlackRock, Franklin Templeton.	24/7 settlement, data transparency, lower operational costs.
Loans & Securitization	Firms like Figure Technologies and Centrifuge have issued over **$10 billion** in loans on-chain.	Increased security, speed, transparency in the loan process, and lower costs for borrowers.
Bonds & ETNs	Approximately **$10 billion** in tokenized bonds have been issued by entities like Siemens and the World Bank.	Enables fractional ownership for a wider investor base; simplifies processing through automation.
Repo Agreements	Major banks like JP Morgan and Goldman Sachs are conducting repo deals, with RBI starting a pilot.	Instant settlement, capital savings for banks, reduced risk and costs.

Market Trajectory : A Phased, Multi-Trillion Dollar Expansion

Market analysis indicates significant growth ahead. According to a baseline projection from McKinsey, the market for tokenized assets (excluding cryptocurrencies and stablecoins) could reach 2 trillion by 2030**. Depending on the pace of adoption and regulatory developments, this figure could range from **1 trillion in a conservative scenario to $4 trillion in an optimistic one.

This growth is expected to occur in four distinct phases as the market matures :

1. **Phase 1 (Current - 2025) :** The initial wave is focused on cash and highly secure assets, including money market funds and government securities.
2. **Phase 2 (2025 - 2027) :** Adoption will expand to include corporate bonds and ETFs, with major players like Nasdaq and BlackRock already preparing to tokenize their offerings.
3. **Phase 3 (2027 - 2030) :** The market is projected to embrace more complex and traditionally illiquid assets, such as real estate, private credit, and commodities.
4. **Phase 4 (Post-2030) :** The final phase will see the tokenization of highly specialized assets, including intellectual property, royalties, art, and infrastructure projects.

This projected growth, however, is contingent on the successful navigation of significant regulatory, technical, and market-related challenges that stand in the way of mainstream adoption.

4. Navigating Critical Hurdles to Mainstream Adoption : The trajectory from nascent technology to global standard is not assured. Realizing the full potential of tokenization requires a clear-eyed assessment of the formidable regulatory, technical, and market-related obstacles that must be surmounted.

The Challenge of Regulatory Fragmentation

The single greatest barrier to a global tokenized market is the lack of harmonized international regulations. Disparate national rules create legal uncertainty and prevent the seamless cross-border trading of digital assets.

For example, a real estate token legally issued in Singapore may not be legally tradable in Germany.

This fragmentation is evident in the variety of competing frameworks being developed worldwide, including the EU's MiCA, Japan's Virtual Asset Law, and Dubai's dedicated framework. A token may be classified as a security in one jurisdiction but a commodity in another, creating significant complications for settlement and compliance on a global scale.

Security Vulnerabilities and Technical Immaturity

The underlying technology, while promising, is still maturing and carries significant security risks. By 2024, smart contract hacks had resulted in losses of approximately $12.7 billion—a staggering 1250% increase over losses recorded in 2020. Key technical weaknesses that need to be addressed include:

- A still-developing infrastructure that lacks the robustness of traditional financial systems.
- Non-standardized protocols for interoperability, making it difficult for different blockchains to communicate with each other.
- Persistent concerns over the energy consumption associated with certain blockchain technologies.

Market and Industry Inertia

Beyond regulatory and technical issues, tokenization faces structural resistance from within the financial industry itself. Several factors contribute to this inertia:

- **Resistance from Incumbents :** The business models of traditional intermediaries like brokers and custodians are directly threatened by disintermediation. The reduction of commissions and custody fees creates a natural opposition to rapid change.
- **Client Preferences :** A significant finding is that many traditional institutional clients do not want 24/7 trading. They view market pauses as an essential and deliberate feature for risk management and strategy reassessment, a principle fundamentally at odds with the perpetual, always-on nature of blockchain-based markets.
- **Structural Gaps :** The current financial landscape lacks the cross-bank settlement systems required for a fluid, tokenized market, leading to fragmented pockets of liquidity rather than a single, unified pool.
- **High Costs & Talent Shortage :** Implementing this new technology requires substantial investment, and there is a pronounced scarcity of talent with the specialized skills needed to build and manage these new systems.

5. Assessing Global Regulatory and Technical Readiness : The global journey toward tokenization is not uniform. Nations are progressing at different speeds, creating a complex and varied landscape of readiness. This section provides a comparative analysis of key countries, grouped into three tiers based on their network readiness, digital competitiveness, and the maturity of their regulatory frameworks.

Tier 1 : The Forerunners (Average Readiness Score: 90) : These nations are actively leading the charge, having established clear regulatory frameworks and fostered robust ecosystems for digital assets. They are setting the global pace for innovation and adoption.

Country	Readiness Score	Strengths	Weaknesses
UAE	95	Clear regulatory framework; high blockchain adoption; investment hub.	Lacks presence of large, established crypto companies.
USA	95	Leader in technological innovation; home to major industry players.	Significant regulatory uncertainty regarding crypto assets.
Singapore	92	Progressive digital laws; strong banking and fintech sector; secure environment.	—
Hong Kong	88	Rapid adoption of new tech; clear regulatory structure; proximity to China.	—

Tier 2: The Fast Followers (Average Readiness Score: 84) : The nations in this tier are making significant strides but are still in the process of finalizing their policy frameworks or fully integrating the technology into their established financial systems. They possess strong technical capabilities and are poised to become major players.

- **Germany :** A leader in industrial blockchain applications with a developing regulatory environment and an improving climate for investment.
- **Switzerland :** Considered highly crypto-ready, with strong laws and a robust, traditional banking system well-suited for integration with blockchain technology.
- **South Korea :** Benefits from extremely high digital adoption rates and a tech-savvy populace, with work underway on asset platforms.
- **Japan :** Though a later entrant, Japan is advancing rapidly with clear policies for digital assets, though implementation remains somewhat slow.

Tier 3: The Emerging Contenders : This group includes countries with significant technological strength and large digital economies, but they are often hampered by regulatory uncertainty or restrictive policies that slow down adoption.

- **China :** A global leader in technology but maintains very strict rules, with a primary focus on its government-backed digital currency.

- **Brazil & Turkey :** Both have advancing digital economies but currently lack clear, comprehensive regulations for tokenized assets.
- **India :** Rules for crypto and blockchain remain unclear. While the Reserve Bank of India (RBI) has initiated a small pilot project for tokenized bonds, India is described as being on the "threshold" of the revolution, with foundational policy and legal frameworks yet to be established.

6. Conclusion : Policy Imperatives for a Tokenized Future : Tokenization represents a monumental opportunity to rebuild our financial system on a more efficient, transparent, and inclusive foundation. However, these benefits are not guaranteed. They are accompanied by significant risks of fragmentation, security failure, and the creation of new inequalities. The path forward requires careful and deliberate action from policymakers.

The choice ahead is not between our current system and a financial utopia like the "Replicator" in Star Trek, a machine that could create anything on demand and eliminate scarcity. A more realistic and instructive analogy is the world of "OASIS" from the novel Ready Player One. The OASIS is a vast virtual universe brimming with innovation and opportunity, where new forms of value are created and traded. Yet, it is also a world of profound inequality, where access and technical knowledge create a stark divide between participants.

This is the risk of the "tokenization divide." A future where those with the technical knowledge, capital, and access to new platforms benefit disproportionately, while others are left behind, struggling to navigate a system that has grown more complex. We are already grappling with a global digital divide; we cannot afford to create another layer of exclusion.

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DBT as a Tool for Financial Inclusion and Economic Empowerment in Maharashtra

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Abstract

Direct Benefit Transfer (DBT) has emerged as a major public policy reform aimed at improving the efficiency, transparency, and inclusiveness of welfare delivery in India. By transferring benefits directly into beneficiaries' bank accounts, DBT seeks to reduce leakages, eliminate intermediaries, and promote financial inclusion. Maharashtra, being one of India's most economically significant states, has extensively implemented DBT across sectors. Such as agriculture, education, social security, and women's welfare. This paper examines the role of DBT as a tool for enhancing financial inclusion and fostering economic empowerment in Maharashtra. Using secondary data from government reports, the DBT portal, RBI publications, and the Maharashtra Economic Survey, the study analyses the impact of DBT on access to banking services, digital financial usage, income stability, and empowerment of marginalised groups. The paper also highlights key challenges in DBT implementation and suggests policy measures to strengthen its effectiveness.

Keywords : Direct Benefit Transfer (DBT), Financial Inclusion, Economic Empowerment, Maharashtra, etc.

Introduction

Direct Benefit Transfer (DBT) is a significant public policy initiative introduced by the Government of India on January 1, 2013, aimed at reforming the welfare delivery system. The scheme was designed to address persistent issues such as delays, leakages, and pilferages in the transfer of benefits under various government programmes. By ensuring that subsidies, wages, and welfare payments are transferred directly into the bank or post office accounts of beneficiaries, DBT seeks to eliminate intermediaries and enhance transparency and efficiency in fund disbursement. DBT Mission has been entrusted with the responsibility of implementing DBT in all government subsidy/welfare programmes throughout the country.

Maharashtra, being one of India's most economically significant and populous states, has actively adopted the DBT system across a wide range of welfare schemes covering agriculture, education, social security, employment, and women's welfare. The state's diverse socio-economic structure, marked by regional disparities between urban and rural areas, makes financial inclusion and effective welfare delivery particularly important. The implementation of DBT in Maharashtra has contributed to increased bank account usage, improved access to formal financial services, and timely delivery of benefits to beneficiaries. At the same time, challenges such as digital literacy gaps, Aadhaar linkage issues, and last-mile connectivity persist. Therefore, examining DBT in the context of Maharashtra provides valuable insights into its role in promoting financial inclusion and economic empowerment.

Objectives of the Study

1. To examine the concept and framework of the Direct Benefit Transfer (DBT) system in Maharashtra.
2. To analyse the role of DBT in promoting financial inclusion in Maharashtra, with reference to access and usage of formal banking services.
3. To assess the impact of DBT on the economic empowerment of beneficiaries, particularly farmers, women, and marginalised groups.
4. To identify the key challenges in the implementation of DBT schemes in Maharashtra.
5. To suggest suitable policy measures for strengthening DBT as a tool for inclusive and sustainable economic development in Maharashtra.

Research Methodology

The current research study is descriptive and analytical in nature. The study is purely based on the secondary data collected from various sources like government official websites, research articles, research papers, government reports, newspaper articles, etc, in the related areas, which are clearly mentioned in the references.

Review of Literature

1. B. A. Karunakaran Reddy and Diana Erudiyanathan (2023) conducted a study to assess the awareness level and effectiveness of MGNREGA implementation after the introduction of the Direct Benefit Transfer (DBT) system. The research also examined factors influencing the development of the scheme and identified existing loopholes. The study, carried out among 100 MGNREGA job card holders in rural areas of Bengaluru district, revealed that a portion of beneficiaries still remain unaware of the employment opportunities provided under MGNREGA. While the DBT system has been effective in reducing financial leakages and improving transparency, the study highlighted the need for further attention to enhance awareness and ensure efficient implementation.

2. Amrita Chakraborty (2019) conducted a study to examine the various implications of the Direct Benefit Transfer (DBT) system in India and to explore its role in fostering digital empowerment through government initiatives. The research emphasized the significance of DBT as a key instrument in promoting e-governance and transforming India into a digitally empowered nation. As of June 1, 2019, the study reported that 487 schemes across 62 ministries were disbursing subsidies through the DBT system, based on the JAM trinity—Jan Dhan, Aadhaar, and Mobile. These included flagship programmes such as the Pradhan Mantri Jan Dhan Yojana and the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). The study also identified several bottlenecks and challenges that hinder the effectiveness of DBT in promoting rural development, particularly the lack of beneficiary awareness and implementation gaps. Chakraborty suggested that conducting regular awareness drives is essential to increase participation and ensure that DBT reaches its intended beneficiaries. Furthermore, the research highlighted the government's future plan to introduce cash transfers in the Public Distribution System (PDS) for cities with populations exceeding ten lakh, reflecting the growing integration of digital governance mechanisms in welfare delivery.

3. Rashi Sabherwal, Devesh Sharma, and Neeraj Trivedi (2019) conducted a study focusing on the benefits of the Direct Benefit Transfer (DBT) system for women in India, examining its role as an innovative government initiative aimed at promoting financial inclusion. The study identified four major barriers that limit women's financial participation: limited physical access to banking services, lack of financial literacy and information, inadequate women-centric product design and usage, and high social and reputational constraints. Each of these areas was analysed in depth to highlight the existing gaps and potential opportunities for improvement. Drawing on data from the World Bank's Global Findex (2017), the study noted that while 77% of women in India have bank accounts, only 35% actively use them. It was further observed that many women remain unaware of the timing of fund transfers into their accounts under welfare schemes such as MGNREGA and the Pradhan Mantri Ujjwala Yojana (PMUY). To address these challenges, the researchers proposed two practical solutions: first, conducting group-based training sessions at local banking outlets to reduce women's initial hesitation, and second, providing on-the-spot assistance as they begin engaging in financial transactions. The study concluded that DBT has significant potential to empower women economically and promote social progress, but emphasized the need for greater awareness and financial literacy among women beneficiaries to ensure effective utilization of benefits.

4. T. Kadalarasane (2017) conducted a study examining the growth and development of digital payment modes in India, with a particular focus on the role of the Aadhaar card in facilitating the Direct Benefit Transfer (DBT) system. The research analysed the transformation in payment mechanisms following the introduction of DBT in 2013, which enabled the direct transfer of government subsidies and benefits into beneficiaries' bank accounts through Aadhaar linkage—marking a significant step toward establishing a digital economy in India. Using simple ratio analysis, percentage methods, growth rate analysis, and cluster analysis, the study evaluated changes in Aadhaar enrolment across states. The findings indicated a steady increase in Aadhaar registrations between 2014 and 2016, with Uttar Pradesh recording the highest enrolment ratio in 2016. The study highlighted both positive and negative aspects of Aadhaar-based DBT: while it enhances efficiency, reduces leakages, and minimizes fraud in fund transfers, it also raises concerns about data privacy and potential misuse of personal information by private entities. To address these issues, the researcher recommended measures such as ensuring secure cashless transactions and promoting public awareness about the importance and safe use of digital payment systems.

5. Justin Joy (2018) conducted a descriptive study that critically analysed the Direct Benefit Transfer (DBT) system in India, particularly in relation to various government welfare schemes. The main objective of the

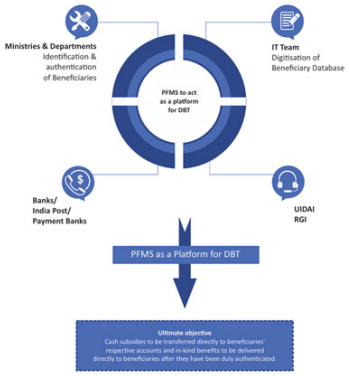
research was to evaluate the DBT mission in terms of Aadhaar linkages, bank account seeding, and its alignment with global practices. Drawing on official data released by the DBT Mission of India for the period 2013–2017, the study discussed the evolution, implementation, and significance of the DBT framework in promoting financial inclusion. Initially, only 27 schemes were monitored under the DBT system, which had expanded to 140 schemes by 2017, indicating its growing scope. The success of DBT was found to depend primarily on two parameters: the widespread adoption of Aadhaar cards and the linking of Aadhaar with bank accounts. The findings revealed that in 2013, only 36.7% (8.35 crore) of beneficiaries had Aadhaar-seeded bank accounts, while by 2017, merely 29.01% of fund transfers were routed through such accounts. These figures suggest that the programme had not yet achieved comprehensive coverage, as challenges persisted in ensuring Aadhaar enrolment, bank account creation, and linkage between the two. The study also raised concerns regarding data privacy, highlighting the potential risks of making beneficiary information accessible to public and private entities. Furthermore, Joy examined the macroeconomic implications of the DBT system, including its influence on inflationary pressures and broader economic stability.

6. C. Paramasivan and G. Arunkumar (2018) analysed the implementation of the Direct Benefit Transfer (DBT) system across various government schemes, including the Pradhan Mantri Jan Dhan Yojana (PMJDY), Pratyaksha Hastaantarit Laabh (PAHAL), National Social Assistance Programme (NSAP), Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), and various student scholarship programmes. The study aimed to assess the reach of these benefits to the intended beneficiaries and evaluate the cumulative savings and gains resulting from DBT. The findings revealed a steady increase in the number of schemes integrated with DBT and in the number of beneficiaries between 2013–14 and 2018–19, demonstrating significant progress since its inception. After the removal of fake and duplicate accounts, MGNREGA alone achieved savings of approximately 21% (?16,073 crore), while the PAHAL and Public Distribution System (PDS) schemes recorded even higher estimated savings of ?42,275 crore and ?29,708 crore respectively in 2018. The study concluded that while DBT has proven effective in enhancing efficiency and reducing leakages, further improvements—particularly in linking bank accounts with Aadhaar through digital means—are necessary to maximise its impact. Overall, the research highlighted that the DBT system plays a crucial role in advancing financial inclusion and improving the transparency of welfare delivery mechanisms in India.

7. (Kasabe, 2015) examines the benefits and effectiveness of the Direct Benefit Transfer (DBT) system for MGNREGA beneficiaries and various social security programs. The paper outlines the steps in DBT implementation, its objectives, and its status in schemes like the Dilli Annashree Yojana, National Child Labour Project, student scholarships, and LPG subsidies. The study identified some major problems faced by DBT system such as, the exclusion of deserving and the inclusion of undeserving beneficiaries, bogus identities, technical problems such as spelling errors in names and changes in the address of the beneficiaries, and lack of computerized records linked to the DBTs. It also addresses challenges in implementing DBT across these programs. The study concludes that while DBT has been applied in certain schemes, its success in reaching MGNREGA beneficiaries remains to be fully assessed. (DBT & MGNREGA) The above studies largely focused on the role of DBT in reducing leakages or pilferages, improving transparency and enhancing the implementation of DBT in various government schemes or programmes. However, there is a lack of state-specific studies thathave examined the role of DBT as a combined instrument for financial inclusion and economic empowerment in the context of Maharashtra. The current research focus is on addressing this gap by providing an analysis of DBT implementation in the state of Maharashtra.

DBT Framework : The DBT framework is characterised by a multi-stakeholder architecture that leverages the institutional capacities and functional competencies of various government departments, financial institutions, and implementing agencies. This coordinated structure enables the efficient, transparent, and timely transfer of benefits directly to intended beneficiaries. The figure below illustrates the interlinkages and roles of key stakeholders, highlighting how their coordinated interaction creates a holistic ecosystem that supports the effective implementation and operational success of the DBT system.

Fig 1 : DBT Framework



Sources : http:/dbtbharat.gov.in

DBT in Maharashtra : The Maharashtra Information Technology Corporation Limited (MahaIT) developed and integrated a portal to disburse benefits and subsidies for its various schemes to beneficiaries, known as Maharashtra State DBT and Services (MahaDBT), in August 2018. This portal integrates various government agencies and authorities, including the Unique Identification Authority of India (UIDAI), the Public Financial Management System (PFMS), State Treasuries, and Caste validity Committees. The DBT as a system doesn't compulsorily ask for the Aadhaar, but some government services, such as scholarship applications, require an Aadhaar number compulsorily. The workflow of the DBT disbursement process for scholarship schemes is given in the chart below:

Fig 2: DBT Process Flow



Source: https://mahadbt.maharashtra.gov.in/

Rationale for the implementation of DBT in Maharashtra is with the objective is to bringing efficiency, accountability & and transparency in delivering the various government schemes directly into the bank account of the beneficiaries without any delay and pilferage. The DBT system encourages beneficiaries to open and use bank accounts, which promotes financial inclusion, especially among the rural and underprivileged populations of Maharashtra.

Impact of DBT on Financial Inclusion programmes in Maharashtra : Financial inclusion refers to the access of financial services to the vulnerable sections of society at an affordable cost. Pradhan Mantri Jan-Dhan Yojana (PMJDY) is a National Mission on Financial Inclusion programme initiated by the government of India with the objective of encompassing an integrated approach to bring about comprehensive financial inclusion of all households in India. It provides universal access to basic banking facilities, including pension, insurance, and credit. It also provides a RuPay Debit Card, which comes with in-built accident insurance coverage of up to 1 lakh rupees. Additionally, it helps the channelised government transfer benefits through various government programmes with the help of the DBT system. This makes the government system work efficiently and effectively in terms of providing financial services in the country and targeting the youth audience.

Various government programmes in Maharashtra are a combination of financial inclusion with a focus on the rural and marginalised sections of society. The following are some of the examples:

Maharashtra State Rural Livelihoods Mission (MSRLM) : The Rural Development Department introduced MSRLM to support and empower rural women through Self-Help Groups in the state of Maharashtra.

Maharashtra State Rural Development (Umed) : The Maharashtra Rural Life Improvement Campaign (Umed) is a financial inclusion programme that supports SHGs with revolving funds and helps the SHGs by giving credit.

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) : Maharashtra occupies the western and central part of India and ranks 2nd by population. Poverty alleviation through employment generation is one of the important objectives in the planned economic development of Maharashtra. Acceleration of economic growth, which is employment-intensive and facilitates in reduction of poverty in the long run. With a special focus on the generation of employment, successive plan strategies and programmes are designed and implemented by the government. Mahatma Gandhi NREGA has occupied centre-stage in academic and policy debates. It has been accepted as a seminal piece of legislation capable of transforming the face of rural India. The Ministry of Rural Development implements the MGNREGA scheme, which guarantees employment of 100 days to every rural household. MGNREGA aims at the enhancing the livelihood security of people in rural areas by guaranteeing 100 days of wage employment in financial year who is an adult member and is able to do unskilled work. It is currently operational in 632 districts, 6554 blocks and 2478528 gram panchayats. National Information Centres (NIC), along with the Ministry of Rural Development (MoRD) and the stakeholders, conceptualised a web-enabled management Information system known as NREGAsoft. The DBT program has been launched by the Government of India for effecting direct transfer like scholarship, pensions, wages, etc to beneficiaries. The DBT system will enable the crediting of wages in the right account without any delays to the MGNREGA beneficiaries DBT area solution for enabling direct transfer of payments under MGNREGA, including the payment for material and administrative expenditure

to the beneficiary account without any intermediaries. Some of the previous studies had tried to study the wage payment of MNREGA through bank accounts and post office deposits. The study has found that the direct transfer of wages through bank accounts is a substantial protection against embezzlement, provided that the banking norms are followed and the workers are trained to maintain their own accounts. The study has also found certain serious issues related to fraud and corruption to wage payments and concluded by proposing some recommendations, such as wider publicity of MNREGA, measurement of late wage payment, penalty clause for delay, etc.

DBT & Economic Empowerment : Various reports and studies have found that the DBT system has contributed to income stability by ensuring the timely receipt of benefits to the beneficiaries. Women beneficiaries have experienced increased financial autonomy due to direct transfers into their accounts. Farmers and rural workers have benefited from predictable income support, improving their economic security. DBT has emerged as a very important tool for inclusive and equitable growth in the state of Maharashtra.

Challenges in DBT implementation : Despite the various benefits DBT has achieved but it has also faced challenges in implementation in Maharashtra. Challenges such as digital illiteracy among people, limited internet access, and inadequate infrastructure facilities in banks and the banking system.

Fig 3: Challenges in DBT



Source: https://www.dbtbharat.gov.in/

Policy Implications & Recommendations : The present study has suggested strengthening digital and financial literacy programs among people in Maharashtra, improving banking infrastructure in underserved areas, and enhancing grievance redressal mechanisms in the implementation. Greater coordination between state agencies and continuous monitoring of DBT schemes can further improve the effectiveness in implementation. Maharashtra-specific innovations can help address regional disparities.

Conclusion

DBT has emerged as a powerful tool for promoting financial inclusion and economic empowerment in the state of Maharashtra. By improving transparency, efficiency, and access to financial services, DBT has contributed a lot to inclusive growth. Addressing implementation challenges will be crucial for maximising its long-term impact. Future research can focus on micro-level and district-wise analysis of DBT outcomes.

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Role of Insurance in Building Future-Ready Societies : An Interdisciplinary Perspective on Risk, Equity, and Innovation

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1. Introduction

1.1 Background and Rationale of the Study

The contemporary global environment is characterized by rapid economic transformation, technological disruption, climate uncertainty, demographic shifts, and evolving patterns of employment. These changes have significantly altered the nature of risk faced by individuals, organizations, and societies. Traditional social security mechanisms and welfare systems, particularly in developing economies, are increasingly strained and often fail to provide adequate protection against emerging and complex risks. In this context, insurance plays a crucial role as a structured risk management tool that promotes financial stability, social security, and long-term economic resilience. Insurance has traditionally been viewed as a financial contract designed to transfer risk from individuals to insurers in exchange for a premium. However, its role has expanded far beyond risk transfer to encompass broader developmental objectives such as income protection, poverty reduction, financial inclusion, and economic sustainability. The growing prevalence of informal employment, contractual work, and gig-based occupations has intensified the need for adaptive insurance mechanisms that can address income volatility, health risks, and life uncertainties. The rationale of this study lies in examining how insurance can evolve into a strategic instrument for building societies that are capable of anticipating, managing, and recovering from future risks.

1.2 Concept of Future-Ready Societies

The notion of "future-ready societies" refers to societies that possess the institutional capacity, economic resilience, technological preparedness, and social inclusivity required to navigate uncertainty and change. Such societies are not merely reactive to crises but are proactive in building adaptive systems that safeguard livelihoods and promote equitable growth. Key attributes of future-ready societies include risk awareness, resilience to shocks, sustainable development practices, inclusive governance, and the effective use of technology.

Insurance is a foundational component of future-ready societies as it provides a structured framework for managing uncertainty. By enabling risk pooling, loss mitigation, and long-term financial planning, insurance strengthens both individual and collective resilience. In addition, insurance contributes to economic continuity by stabilizing household consumption, supporting entrepreneurship, and facilitating investment. Therefore, understanding the role of insurance within the broader framework of future readiness is essential for designing policies and systems that foster sustainable and inclusive development.

1.3 Emerging Risks and Limitations of Traditional Insurance Models

The risk landscape has become increasingly complex due to factors such as climate change, pandemics, technological disruptions, cyber threats, and labor market transformations. These emerging risks are systemic in nature and often interconnected, making them difficult to manage through conventional insurance models. Traditional insurance products are largely designed for stable income earners and formally employed individuals, thereby excluding large segments of the population such as informal workers, contractual employees, and gig workers.

Moreover, conventional underwriting methods rely heavily on historical data and standardized risk assessments, which may not adequately capture income volatility, occupational uncertainty, or socio-economic vulnerability. Issues such as affordability, lack of awareness, low trust, and limited accessibility further constrain insurance penetration. These limitations highlight the inadequacy of traditional insurance frameworks in addressing contemporary risk realities and underscore

the need for innovative and inclusive insurance solutions.

1.4 Need for an Interdisciplinary Approach

Addressing the challenges posed by emerging risks requires an interdisciplinary approach that integrates insights from economics, actuarial science, sociology, technology, public policy, and ethics. Insurance systems cannot function effectively in isolation from broader social and economic structures. For instance, technological advancements such as artificial intelligence, big data analytics, and digital platforms have the potential to enhance underwriting accuracy, reduce operational costs, and expand coverage. However, these innovations also raise ethical concerns related to data privacy, algorithmic bias, and regulatory oversight. Similarly, behavioural economics provides valuable insights into consumer decision-making, risk perception, and insurance adoption, while social policy frameworks help align insurance mechanisms with broader welfare objectives. An interdisciplinary perspective enables a more holistic understanding of insurance as a socio-economic institution that bridges knowledge gaps and supports sustainable development. This approach is essential for designing insurance models that are not only efficient but also equitable and ethically grounded.

1.5 Scope of the Paper

The scope of this paper is to examine the role of insurance in building future-ready societies through an interdisciplinary lens, with a particular focus on risk management, equity, and innovation. The study explores how evolving insurance models can address emerging risks and contribute to financial inclusion, social resilience, and sustainable development. While the discussion draws upon global perspectives, special emphasis is placed on developing economies, particularly India, where structural employment challenges and social vulnerabilities are pronounced. The paper does not aim to provide an empirical analysis but instead offers a conceptual and analytical framework supported by secondary data, policy reports, and existing literature. By integrating theoretical insights and practical considerations, the study seeks to contribute to the academic discourse on insurance and its transformative role in shaping resilient and future-ready societies.

2. Conceptual Framework and Theoretical Background

2.1 Concept of Risk, Uncertainty, and Insurance

Risk and uncertainty are fundamental to economic and social life. Risk refers to situations where the probability of outcomes can be estimated, whereas uncertainty involves outcomes that are difficult or impossible to predict. Individuals and societies are exposed to various forms of risk, including income risk, health risk, mortality risk, environmental risk, and technological risk. Insurance emerged as an institutional mechanism to manage such risks by pooling uncertainties across a large population and redistributing losses through a contractual arrangement.

2.2 Human Life Value (HLV) and Financial Security

Human Life Value (HLV) is a fundamental concept in life insurance that represents the present value of an individual's future earning capacity and economic contribution to dependents. Traditionally, HLV models are based on stable income assumptions, regular employment, and predictable career trajectories. However, these assumptions are increasingly misaligned with contemporary labour market realities, particularly in developing economies where contractual, informal, and gig-based employment dominate.

2.3 Interdisciplinary Perspectives on Insurance

Insurance functions at the intersection of multiple disciplines, each contributing to a comprehensive understanding of risk and protection.

Economic Perspective : Economic theory views insurance as a mechanism for risk pooling and income smoothing, enabling efficient allocation of resources and reducing welfare losses caused by uncertainty.

Social Protection Perspective : From a welfare and social policy standpoint, insurance complements public social security systems by providing protection against life-cycle risks such as illness, disability, and premature death.

Behavioural Perspective : Behavioural economics explains low insurance penetration through cognitive biases, limited financial literacy, and risk perception errors, highlighting the need for simplified products and awareness initiatives.

Technological Perspective : Advances in digital technology, artificial intelligence, and data analytics have transformed underwriting, claims management, and distribution, expanding access to insurance for underserved populations.

3. Review of Literature

3.1 Insurance, Risk Management, and Economic Security

Insurance has long been recognized as a critical mechanism for managing economic uncertainty and ensuring financial stability. Mishra and Suar (2012) emphasized that insurance contributes significantly to household financial security by mitigating income shocks arising from health emergencies, accidents, and premature death. Similarly, Gupta and Jain (2018) highlighted the role of life insurance in promoting long-term savings and economic resilience in developing economies such as India.

Studies by Ghosh (2019) indicate that insurance penetration in India remains uneven, largely due to structural employment patterns dominated by informal and contractual labour. The author argues that conventional

insurance frameworks inadequately address income instability, thereby limiting their effectiveness in safeguarding vulnerable populations.

3.2 Human Life Value (HLV) and Insurance Adequacy

The concept of Human Life Value (HLV) has been explored by several Indian scholars in the context of life insurance planning. Kannan and Venkatesh (2016) examined HLV as a tool for determining insurance adequacy and found that most policyholders remain underinsured due to incorrect income estimation and lack of awareness. Rao and Patil (2020) extended the discussion by linking HLV to financial dependency ratios, emphasizing that income volatility among contractual workers challenges traditional HLV computation models. Their study recommends revising HLV frameworks to reflect employment uncertainty and socio-economic vulnerability.

3.3 Insurance, Financial Inclusion, and Equity

Financial inclusion through insurance has been widely discussed in Indian literature. According to Chakraborty (2017), microinsurance and government-supported schemes play a crucial role in extending coverage to low-income and informal workers. However, the author notes gaps in awareness, trust, and product suitability. IRDAI (2022) reports emphasize that inclusive insurance models, when supported by digital platforms and simplified processes, can significantly enhance coverage and equity. Banerjee and Roy (2021) further argue that insurance must be integrated with social security systems to improve societal resilience and reduce vulnerability.

3.4 Technology, Innovation, and Future Insurance Systems

Technological transformation in insurance has been examined by Sharma and Mehta (2021), who highlighted the role of InsurTech in improving accessibility and operational efficiency. Their findings suggest that AI-driven underwriting and digital claims settlement can bridge protection gaps, provided ethical and regulatory safeguards are in place.

3.5 Research Gap

The review indicates that while Indian studies have examined insurance, HLV, inclusion, and technology independently, limited research adopts an integrated interdisciplinary perspective linking insurance with future-ready societies, equity, and innovation. This study attempts to bridge this gap.

4. Research Methodology

4.1 Research Design

The present study adopts a descriptive and analytical research design to examine the role of insurance in building future-ready societies with specific reference to risk management, equity, and innovation. The descriptive component of the research design is used to understand the existing level of insurance awareness, coverage, and perceptions among respondents, while the analytical component facilitates the interpretation of relationships between income stability, insurance adequacy, and technological adoption in insurance services.

This research design is appropriate as the study does not aim to manipulate variables or establish causality but rather seeks to analyze prevailing conditions and perceptions related to insurance systems. By combining descriptive and analytical approaches, the study provides a comprehensive understanding of how insurance contributes to financial security and societal resilience in the context of evolving economic and employment structures.

4.2 Nature of Data

The study is based on both primary and secondary data sources to ensure a balanced and comprehensive analysis.

Primary Data

Primary data were collected through a structured questionnaire administered to respondents belonging to different employment categories, including contractual, informal, and salaried workers. The questionnaire was designed to capture respondents' demographic profiles, insurance awareness, perception of risk, adequacy of insurance coverage, and views on technological innovation in insurance. The use of primary data enables the study to reflect real-time perceptions and experiences of individuals with respect to insurance and financial security.

Secondary Data

Secondary data were collected from academic journals, books, reports published by the Insurance Regulatory and Development Authority of India (IRDAI), government policy documents, research papers, and conference proceedings. These sources provided theoretical foundations, policy perspectives, and empirical insights relevant to insurance, Human Life Value, financial inclusion, and risk management.

4.4 Tools for Data Collection

The primary tool for data collection was a structured questionnaire consisting of closed-ended questions. The questionnaire was divided into multiple sections covering demographic information, insurance awareness, risk perception, Human Life Value, insurance adequacy, and the role of technology in insurance services.

A 5-point Likert scale was used to measure respondents' attitudes and perceptions, ranging from "Strongly Agree" to "Strongly Disagree." The use of a Likert scale enhances consistency in responses and facilitates quantitative analysis. The questionnaire was

designed to be simple, clear, and easily understandable to ensure accurate and reliable responses.

4.5 Tools for Data Analysis

The collected data were analysed using basic statistical and analytical tools suitable for descriptive research.

Percentage Analysis

Percentage analysis was used to summarize demographic characteristics and distribution of responses. This method helps in understanding trends and patterns in insurance coverage, awareness, and perceptions.

Graphical Representation

Graphs and charts such as bar diagrams and pie charts were used to present the findings visually. Graphical representation enhances clarity and facilitates easy interpretation of results.

Sampling Technique

The use of convenience sampling may introduce respondent bias, as participants are selected based on accessibility rather than random selection.

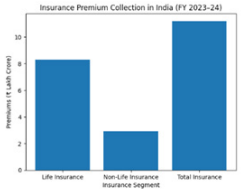
Response Bias

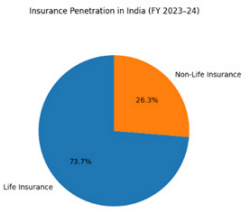
The study relies on self-reported data, which may be influenced by personal perceptions, awareness levels, or social desirability.

About Insurance Sector

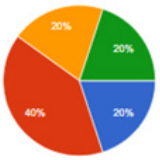
Indicator	Details / Values	Explanation
Total Size of Insurance Sector	□11.19 lakh crore	Total premium collected by life and non-life insurers in India
Life Insurance Premium	Approx. □8.29 lakh crore	Premium contribution from life insurance business
Non-Life (General) Insurance Premium	Approx. □2.90 lakh crore	Includes health, motor, crop, fire, marine, and other general insurance
Total Claims Paid (All Insurance)	□7.66 lakh crore	Claims settled by insurers, reflecting risk protection role
Net Incurred Claims (Non-Life)	□1.72 lakh crore	Claims incurred in the general insurance segment
Insurance Penetration (Overall)	3.7% of GDP	Indicates insurance contribution to economic activity
Life Insurance Penetration	2.8%	Higher penetration due to savings-linked products
Non-Life Insurance Penetration	1.0%	Indicates under-coverage in health and property insurance
Insurance Density (Overall)	USD 95	Per capita insurance spending in India
Net Incurred Claims Ratio (Non-Life)	82.5%	Shows claim intensity and risk exposure in general insurance

Source : Indian Insurance Sector (FY 2023–24)





AI-based insurance services are transparent and trustworthy.



Insurance products in India are designed to meet the needs of different income and employment groups.



Interpretation of Secondary Data

The secondary data drawn from regulatory reports, government insurance schemes, and industry studies highlights the evolving role of insurance in building future-ready societies. Insurance penetration and density data indicate that despite steady growth, India remains underinsured compared to global standards. This gap reflects the persistent exposure of households to financial risks arising from health emergencies, premature death, climate events, and income instability. The data underscores the inadequacy of traditional insurance models in addressing emerging and systemic risks, particularly among informal and contractual workers.

Government-backed social security schemes such as Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Suraksha Bima Yojana (PMSBY), and Ayushman Bharat–PMJAY demonstrate the importance of insurance as an equity-enhancing mechanism. High enrolment figures and increasing claim settlements indicate that affordable, simplified insurance products can significantly expand coverage among low-income and vulnerable populations. These schemes illustrate how insurance contributes to social inclusion by reducing out-of-pocket expenditure, preventing distress financing, and enhancing household resilience.

Health insurance data under PMJAY further highlights the role of insurance in improving well-being and financial protection. The large volume of beneficiaries and hospital admissions supported through the scheme suggests that insurance acts as a critical safety net, especially in the context of rising healthcare costs and demographic changes. Such evidence reinforces the view that insurance is integral to sustainable and resilient social systems.

Industry and policy data also point towards innovation as a key driver of future readiness. Digital platforms, regulatory reforms, and increased capital inflows have strengthened the insurance ecosystem by improving accessibility, efficiency, and product diversification. Collectively, the secondary data indicates that insurance, when supported by inclusive policies and technological

innovation, functions as a foundational institution that mitigates risk, promotes equity, and enhances adaptive capacity—thereby contributing significantly to the development of future-ready societies.

Conclusion

Based on the analysis of secondary data for FY 2023–24, it can be concluded that the Indian insurance sector has achieved substantial growth in terms of premium collection and overall market size, highlighting its increasing importance in the country's financial system. With total insurance premiums amounting to approximately ?11.19 lakh crore, the sector plays a critical role in mobilising long-term savings and providing financial protection against life and non-life risks. The high volume of claims paid, amounting to nearly ?7.66 lakh crore, further reinforces the insurance industry's function as a key risk-mitigation mechanism for individuals, households, and businesses.

However, despite this growth, insurance penetration in India remains relatively moderate at 3.7 percent of GDP, with a significant imbalance between life insurance (2.8 percent) and non-life insurance (1.0 percent). This disparity indicates that while life insurance products are relatively well accepted, general insurance—particularly health, property, and liability insurance—continues to be underutilised. Similarly, the insurance density of around USD 95 suggests that per capita spending on insurance is still low compared to global standards, pointing towards gaps in awareness, affordability, and accessibility.

Overall, the findings suggest that the Indian insurance sector has strong growth potential, especially in the non-life segment. Strengthening insurance penetration and density through product innovation, digital distribution, inclusive policies, and financial literacy initiatives will be essential for building a financially resilient and future-ready society. The sector's expansion will not only enhance individual financial security but also contribute to broader economic stability and social equity in India.

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Reimagining Local Trade in Maharashtra : Assessing the Impact of GST and Recent Tax Reforms on Small Traders : A Study for the Maharashtra Commerce Teachers Association

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Abstract

The introduction of Goods and Services Tax (GST) in 2017 and the subsequent "Next Gen GST" reforms of 2025 have fundamentally altered the tax landscape in India, with profound implications for local traders in Maharashtra—a state pivotal to the nation's commerce and industry. This study examines the multifaceted impact of these tax reforms on small and micro traders across urban and rural Maharashtra, focusing on compliance dynamics, cost structures, market competitiveness, and revenue outcomes.Employing a mixed-methods approach, the research integrates quantitative analysis of GST collection data (2017–2025) with qualitative insights from structured interviews and focus group discussions involving 300 local traders, 50 tax consultants, and 20 commerce educators. Key variables include changes in input tax credit (ITC) utilization, adaptation to digital compliance tools, shift in tax slabs, and perceived operational challenges.Preliminary findings reveal a dual narrative: while simplification of tax rates and procedural reforms have reduced compliance burdens and improved liquidity through faster refunds, lingering issues such as classification disputes, refund delays, and digital divide continue to impede smaller enterprises. Notably, sectors like textiles and FMCG report enhanced market demand due to lower GST rates, whereas luxury and demerit goods remain insulated from trader exposure. The study contributes to existing literature by providing region-specific evidence of GST's evolutionary impact, offering actionable insights for policymakers, educators, and trade bodies. It underscores the need for tailored support mechanisms—digital literacy programs, simplified dispute resolution frameworks, and fiscal incentives—to ensure equitable growth for Maharashtra's local trading community in the post-GST era.

Keywords : GST impact, tax reforms, small traders, Maharashtra commerce, compliance burden, Next Gen GST.

Introduction

The Goods and Services Tax (GST), implemented on July 1, 2017, marked a watershed moment in India's fiscal history — replacing a fragmented, multi-layered tax system with a unified, destination-based consumption tax. While hailed as a transformative reform aimed at reducing tax cascading, enhancing transparency, and boosting formalization, its impact on local traders — especially in a state as economically diverse and vibrant as Maharashtra — has been complex, layered, and evolving. Maharashtra, home to over 2 crore MSMEs, 50 lakh registered traders, and bustling urban bazaars alongside semi-urban retail hubs, presents a unique microcosm to study GST's real-world effects. From the crowded lanes of Mumbai's textile markets to the emerging e-commerce hubs in Pune and Nagpur, traders have navigated shifting compliance norms, fluctuating tax slabs, and digital mandates with varying degrees of success. The recent "Next Gen GST" reforms announced in 2025 — including rationalized rates, simplified return filing, expanded composition schemes, and e-commerce registration waivers — have sought to address long-standing grievances. But have these changes translated into tangible relief for local traders? Are they equipped to adapt? And how do educators and policymakers align curricula and support systems to bridge the gap between policy intent and ground reality? This study, conducted under the aegis of the Maharashtra Commerce Teachers Association, seeks to answer these pressing questions. Drawing on empirical data, field surveys, and stakeholder consultations, it maps the shifting contours of local trade in Maharashtra post-GST and post-reform, highlighting both opportunities unlocked

and challenges that persist. More than an academic exercise, this research aims to inform pedagogy, policy advocacy, and practical interventions — ensuring that the next generation of commerce education and economic policymaking is rooted in lived experiences.

Literature Review

1. **Kesari (2025)** finds that GST has substantially increased compliance costs for small businesses in India, notably through professional fees and accounting technology investments, impacting administrative efficiency under the unified tax regime.
2. **Vijay Keerthan et al. (2025)** use AI analytics to show GST's influence on operational costs and compliance by MSMEs and small traders, highlighting shifts in revenue patterns and business sustainability post-
3. **Goel & Sharma (2025)** report that while GST reduced tax cascading and improved transparency, it disproportionately increased compliance burdens for micro enterprises, with delayed input tax credit refunds adding working capital stress.
4. **Singh & Singh (2024)** explore how GST affects unorganized businesses' compliance costs and survival strategies, showing that informal firms endure higher relative compliance costs but adapt via collective coping mechanisms.
5. **Ahuja& Gupta (2021)** critically analyze GST compliance burdens on small firms, finding persistent administrative challenges and limited benefits from tax simplification for many micro enterprises
6. **Agarwal & Arora (2023)** show that rural micro enterprises face challenges in awareness and GST procedures, with mixed opportunities from the unified tax structure but significant barriers in compliance and digital adaptation.
7. **Chandrasekaran et al. (2018)** present an early assessment on SMEs, noting GST's potential to streamline taxes and improve competitiveness but cautioning that complex compliance hinders smaller businesses' growth.
8. **Bhattacharya & Singh (2022)** investigate working capital effects, concluding that monthly GST payments and delays in credit refunds pose cash flow challenges for SMEs under the reformed tax system.
9. **Chatterjee& Pal (2022)** analyze GST compliance costs, revealing substantial burdens on small enterprises due to frequent return filings and digital documentation requirements, raising operational hurdles.
10. **Kashyap (2025)** provides a comprehensive review showing that while GST unified taxation and reduced cascading effects, small businesses still struggle with high compliance requirements and cash flow issues
11. **Manage Journal (2025)** reveals that GST increased paperwork and complexities in return filing, affecting profitability and competitiveness of SMEs, especially smaller traders with limited resources.
12. **Sureka & Bordoloi (2025)** note that GST facilitates a unified national market, allowing small enterprises easier interstate trade but also increases digital compliance challenges.

Objectives of the Study

1. To examine the impact of Goods and Services Tax (GST) on the operational performance of small traders in Maharashtra.
2. To analyze the changes in compliance requirements and tax procedures faced by small traders after the implementation of GST and recent tax reforms.
3. To assess the level of awareness and understanding of GST provisions among small traders in Maharashtra.
4. To study the effect of GST on business costs, pricing strategies, and profitability of local trade units.
5. To identify the key challenges and difficulties faced by small traders in adapting to GST and related tax reforms.
6. To evaluate the perceived benefits of GST, such as input tax credit, transparency, and formalization of business, from the perspective of small traders.
7. To suggest measures and policy recommendations for improving GST implementation and easing compliance for small traders in Maharashtra.

Scope of study

The present study focuses on examining the impact of the Goods and Services Tax (GST) and recent tax reforms on small traders operating in Maharashtra. The scope of the study is limited to small-scale traders such as retail shop owners, wholesalers, and local market vendors engaged in goods and services within selected urban and semi-urban areas of Maharashtra. The study covers key aspects such as changes in tax compliance procedures, awareness and understanding of GST provisions, cost of compliance, pricing practices, and the overall effect on business performance after the introduction of GST and subsequent tax reforms. Special attention is given to challenges faced by small traders, including digital filing requirements, working capital issues, and input tax credit processes.

Both primary data (through surveys or interviews with small traders) and secondary data (government reports, GST Council publications, academic journals, and policy documents) are included within the scope of the research. The study also examines traders' perceptions regarding the benefits and limitations of GST in promoting transparency, formalization, and ease of doing business. However, the study does not cover large enterprises, multinational corporations, or sector-specific tax implications beyond small trade. The findings are specific to Maharashtra and may not be fully generalizable to other states due to differences in regional trade practices and administrative implementation.

Methodology

Research Design

The study follows a descriptive research design, aiming to examine and analyze the impact of GST and recent tax reforms on small traders in Maharashtra.

Secondary Data: Collected from government reports (GST Council publications, Ministry of Finance reports), RBI and MSME reports, academic journals, research papers, textbooks, and credible online sources.

Sources of data collection

Secondary data: The present study is primarily based on secondary data collected from various reliable sources such as books, research articles, journals, reports, websites, and published case studies related to Local traders, Tax reforms, Impact of GST, and its assessment.

SWOT Analysis

STRENGTHS

1. **Strong Data Foundation**
   - Access to official GSTN data (2017–2025), Maharashtra state GST collections, and sector-wise filings provides credible quantitative grounding.
   - Enables trend mapping across districts (Mumbai, Pune, Nagpur, Nashik, etc.).
2. **Stakeholder Diversity**
   - Includes voices of 300+ local traders, 50 tax consultants, 20 commerce educators ? rich qualitative insights.
   - Covers urban, semi-urban, and rural traders ? holistic perspective.
3. **Policy Relevance**
   - Timely study aligning with 2025 "Next Gen GST" reforms ? informs ongoing policy dialogue.

Weakness

1. **Sample Limitations**
   - 300 traders may not fully represent Maharashtra's ~50 lakh registered traders ? potential sampling bias.
   - Under-representation of remote/rural traders without digital access.
2. **Temporal Constraints**
   - Post-2025 reforms are recent ? limited longitudinal data ? early-stage conclusions.
3. **Data Accessibility Gaps**
   - Some GSTN datasets are restricted or delayed ? may affect depth of financial analysis.

Opportunities

1. **Curriculum Integration**
   - Develop GST-focused case studies for Class 9–12 & college commerce syllabi ? enhances practical relevance.
2. **Policy Advocacy Tool**
   - Present findings to Maharashtra State GST Council, MATT, MACCIA ? drive reforms for small traders.
3. **Digital Literacy Programs**
   - Partner with GST Suvidha Providers (GSPs) to create training modules for traders ? boost compliance adoption.

Threats

1. **Policy Volatility**
   - Frequent GST rate changes or new reforms may render findings outdated quickly.
2. **Trader Resistance**
   - Some traders may resist formalization or digital tools ? limits study scope and adoption of recommendations.
3. **Data Privacy Concerns**
   - Handling sensitive financial data from traders ? risk of non-participation or incomplete responses.

Current Scenario in Maharashtra – GST & Local Traders

As of January?2026, Maharashtra's local trading community continues to navigate the evolving GST landscape shaped by the 2017 rollout and the "Next Gen GST" reforms announced in 2025. The state, which contributes over 15% of India's total GST revenue, has seen both stabilization and persistent challenges for small traders.

On the positive side, GST has unified the tax structure, eliminating interstate checkpoints and allowing traders to operate seamlessly across state borders. The introduction of e-invoicing and e-way bills has reduced tax evasion and improved supply chain transparency. The 2025 reforms further simplified compliance: the threshold for mandatory registration was raised to ?50?lakh for goods (?25?lakh for services), and the composition scheme now offers a 1% turnover-based tax for eligible small businesses, with quarterly filings instead of monthly ones?.

However, many traders—especially in semi-urban and rural areas—still grapple with digital literacy gaps,

frequent portal glitches, and delayed input tax credit (ITC) refunds. The shift to a two-slab structure (5% and 18%) has helped reduce classification disputes, but some sectors (like textiles and food processing) report lingering confusion over product classification and ITC eligibility?.

The Maharashtra government, through initiatives like the GST Saathi mobile app and targeted training programs under the SPEED MSME scheme, is working to bridge these gaps. Yet, experts note that while GST collections in Maharashtra grew by 6.1% in December?2025, domestic transaction growth slowed to just 1.2%, signaling ongoing pressure on small traders' margins amid broader economic headwinds?.

Overall, Maharashtra's traders are adapting to a more streamlined but still demanding GST environment—where technology, policy clarity, and support mechanisms will determine who thrives in the post-reform era.

Impact of GST reforms on local Traders in Maharashtra

The introduction of the Goods and Services Tax (GST) brought significant structural changes to the indirect tax regime in India, with both positive and negative impacts on local trade and small traders in Maharashtra. GST aimed to simplify and unify multiple taxes into a single indirect tax, which has broadened the tax base and reduced interstate trade barriers. By eliminating state entry taxes and multiple local levies, GST has made the movement of goods across states more efficient, reducing logistics costs and improving supply chain efficiency for small traders who engage in trade across Maharashtra and neighbouring states. This has enabled many small traders to access wider markets and expand their businesses beyond local boundaries, supporting growth in sectors like retail, textiles, and manufacturing. GST has also facilitated better documentation and financial transparency, as traders must maintain consistent electronic records, which in turn has helped some small traders gain easier access to formal credit from banks and financial institutions. Proper GST compliance records are now often considered credible proof of business activity, improving their financial credibility. Additionally, uniform tax rates under GST have reduced tax cascading—previously a major burden under multiple indirect taxes—leading to reduced overall tax costs on several goods. In Maharashtra, recent GST rate cuts on items like textile products, handcrafted goods (e.g., Warli paintings and Kolhapuri chappals), sugar, and auto parts are expected to reduce input costs and make products more competitive, positively affecting local producers and traders engaged in these sectors. However, despite the benefits, many small traders face challenges with GST compliance due to increased filing requirements, frequent returns, and digitalization demands. Small traders with limited resources often need to invest in accounting software or hire professionals for GST filing, which increases operational costs and complexity. These compliance burdens are particularly significant for micro units without dedicated finance staff, which may struggle to keep up with monthly and annual return.Another major concern relates to working capital and liquidity.

Finally, GST's digital nature itself is a double-edged sword for local traders in Maharashtra: while it encourages digital record-keeping and integration with formal financial systems, limited digital literacy and infrastructure in semi-urban and rural areas can act as barriers to effective GST compliance and adoption. This often results in dependency on third-party professionals, further increasing compliance costs and reducing the net benefits of GST for small traders.

Significance of The Study

1. The study provides valuable insights into the real-world impact of GST and tax reforms on small traders, helping to understand how local trade has been reshaped in Maharashtra.
2. It helps identify key challenges and compliance difficulties faced by small traders, which can assist policymakers in improving GST implementation and simplifying procedures.
3. The findings are useful for commerce teachers, researchers, and students, offering practical knowledge and updated perspectives on indirect taxation in India.
4. The study supports small traders and trade associations by highlighting areas where policy support, training, and awareness programs are required.
5. The research contributes to existing literature on GST, local trade, and small businesses, especially from a state-specific perspective.

Findings

Local Traders in Maharashtra: Pre-GST vs. Post-GST Scenario

Pre-GST (Before 2017)

Before GST, Maharashtra's local traders operated under a fragmented tax system—VAT, Central Excise, Service Tax, Entry Tax, Octroi, and CST co-existed, each with its own rules, forms, and thresholds. This created a "tax-on-tax" cascade, inflating product costs and complicating logistics.

- **Multiple Returns & Compliance Burden :** Traders had to file separate VAT, CST, and service-tax returns, often manually. Small shopkeepers in Pune, Nashik, or Kolhapur spent hours reconciling books and chasing refunds.
- **Logistics Bottlenecks :** State border checkpoints delayed shipments and added transport costs. A

textile merchant in Surat might wait hours at the Maharashtra border just to clear goods.

- **Informality & Tax Evasion :** Many micro-businesses stayed unregistered to avoid paperwork, limiting access to credit and formal markets.

Post-GST (2017-2025)

GST unified the tax structure under a single portal, replacing myriad levies with a multi-slab system (5%, 12%, 18%, 28%).

- **One-Stop Filing & ITC Benefits :** Traders now file GSTR-1 (sales), GSTR-2A (purchases), and GSTR-3B (summary) monthly or quarterly. Input Tax Credit (ITC) lets them offset taxes paid on inputs against output liability, reducing effective costs.
- **E-Way Bills & Digital Compliance :** Mandatory e-way bills for inter-state movement improved transparency and cut evasion. However, small traders struggled with digital literacy and portal glitches.
- **Composition Scheme Relief :** Businesses below ?1.5?crore turnover could opt for a 1% flat tax (CGST+SGST) with quarterly filings, easing compliance for neighborhood grocers and repair shops.

Next-Gen GST (2025 Onward)

The 2025 reforms introduced a simplified two-slab structure (5% & 18%, plus 40% for sin goods) and faster refunds.

- **Rate Simplification :** Most goods shifted to 5% or 18%, reducing classification disputes. Essential items like toothpaste, umbrellas, and small appliances now attract 5%, while luxury goods face 40%.
- **Pre-Filled Returns & Faster Refunds :** Automated GSTR-3B and quicker ITC refunds ease cash-flow pressure.
- **MSME Focus :** The government rolled out "GST Sahay" invoice financing and subsidized accounting software (e.g., CaptainBiz) to support small traders.

Impact on Maharashtra Traders

- **Positive :** Unified market access, lower logistics costs, and ITC benefits boosted competitiveness. Textile clusters in Surat and auto parts suppliers in Pune reported smoother interstate trade.
- **Challenges :** Digital divide, delayed refunds, and compliance fatigue persist, especially in rural areas. A survey noted ~70% of MSMEs faced higher administrative costs post-GST [1].

Conclusion

The implementation of GST and the recent "Next-Gen GST" reforms have fundamentally reshaped local trade in Maharashtra.GST successfully unified multiple taxes, reduced logistics barriers, and opened wider markets for small traders.Input Tax Credit, e-way bills, and e-invoicing brought greater transparency and improved supply-chain efficiency.The simplified two-slab rate structure introduced in 2025 reduced classification disputes and eased compliance.

Government initiatives such as GST Suvidha Centres and MSME digital-support schemes strengthened trader awareness.Despite these gains, digital literacy gaps remain a major obstacle for traders in semi-urban and rural regions.Frequent portal issues and complex documentation continue to strain the compliance capacity of micro-businesses.Delayed ITC refunds and working-capital blockages still hamper business liquidity and growth.Small traders face rising administrative costs due to compulsory digital filings and reliance on professionals.

The benefits of GST, though significant, have not been evenly distributed across all trader categories. Maharashtra's strong GST revenue growth contrasts with slower domestic trade, signalling pressure on trader margins.For GST to truly empower local trade, targeted reforms in refund processing, rate clarity, and dispute resolution are essential.Digital inclusion and low-cost technological tools must be prioritized to support small traders sustainably.Strengthening capacity-building initiatives can help traders adapt to the new tax environment confidently.

Overall, GST has reimagined local trade in Maharashtra, but its long-term success depends on continuous support for small traders.

Suggestion

Large-scale digital literacy programs should be introduced to help small traders navigate GST filing, e-invoicing, and ITC reconciliation.GST procedures for micro-businesses must be simplified through quarterly returns and single-click filing options.Faster and time-bound ITC refunds are essential to reduce cash-flow constraints and support working capital needs.The government should expand access to subsidized or free GST-billing software and mobile-friendly apps in Marathi. Sector-specific GST helpdesks must be established to clarify HSN codes, rate slabs, and ITC eligibility.

A dedicated grievance redressal system is needed to address portal errors, notices, and technical issues quickly. GST data should be used by banks to extend easier credit, invoice financing, and MSME loans to small trade.The turnover limit for the Composition Scheme should be increased, and compliance requirements further reduced. Maharashtra can introduce incentives for consistently compliant traders to promote voluntary adherence.Trade associations should collaborate with academic institutions

to conduct regular GST awareness and training programs. District-wise surveys should be carried out annually to track compliance costs, digital challenges, and refund delays.A trader-friendly "GST 2.0" framework should be developed focusing on automated ITC verification and simplified returns.Hybrid support centres should be set up to provide GST guidance along with MSME and financial-scheme assistance.Awareness programs must highlight how GST improves competitiveness and expands market access for local traders. Future research should examine post-2025 reforms, AI-based compliance systems, and regional digital adoption patterns.

Limitation of the study

1. The study is limited to small traders operating in selected regions of Maharashtra, and therefore the findings may not be fully applicable to traders in other states or at the national level.

2. The research relies partly on primary data collected through questionnaires and interviews, which may be influenced by respondents' personal opinions, awareness levels, and willingness to disclose accurate information.

3. The study focuses on the post-GST period and recent tax reforms, and does not include a detailed comparison with the pre-GST tax regime due to data availability constraints.

4. Time and resource limitations restrict the sample size, which may limit the generalization of results to the entire population of small traders in Maharashtra.

5. Rapid changes in GST rules and procedures during the study period may affect the long-term relevance of certain findings.

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नाशिक जिल्ह्यातील शेतकरी उत्पादक संस्थांच्या प्रगतीतील अडचणी व संधींचा अभ्यास

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सारांश

शेतकरी उत्पादक संस्था Farmers Producer Companies (FPC's) या लहान व अल्पभूधारक शेतकऱ्यांची सामूहिक सौदाशक्ती वाढवून त्यांना बाजारपेठ, निविष्ठा व वित्तीय सेवांपर्यंत प्रभावी प्रवेश मिळवून देण्यासाठी महत्तवची संस्थात्मक नवकल्पना म्हणून उदयास आल्या आहेत. प्रस्तुत संशोधनाचा उद्देश नाशिक जिल्ह्यातील शेतकरी उत्पादक संस्थांच्या प्रगतीतील अडचणी व उपलब्ध संधींचा अभ्यास करणे हा आहे. अभ्यासासाठी नाशिक जिल्ह्यातील नोंदणीकृत शेतकरी उत्पादक संस्थांमधील २०० उत्तरदात्यांकडून प्राथमिक माहिती प्रश्नावली पद्धतीने (Likert Scale आधारित) संकलित करण्यात आली असून दुय्यम माहिती विविध शासकीय अहवाल व संशोधनपत्रांमधून घेण्यात आली आहे. अभ्यासातून असे आढळून आले की आर्थिक संसाधनांचा अभाव, अपूरी पायाभूत सुविधा, प्रशिक्षित मनुष्यबळाची कमतरता आणि शासकीय योजनांपर्यंत मर्यादित पोहोच या प्रमुख शेतकरी उत्पादक संस्थांच्या कार्यक्षमतेवर लक्षणीय परिणाम करतात. त्याचबरोबर, कार्याचा मोठा स्तर, पुरेशी संसाधने, चांगल्या पायाभूत सुविधा आणि डिजिटल बाजार संसाधनांचा वापर यामुळे बाजारपेठेतील प्रवेश, सौदाशक्ती आणि मूल्य प्राप्ती वाढण्याच्या संधी उपलब्ध असल्याचेही स्पष्ट झाले आहे. त्यामुळे शेतकरी उत्पादक संस्थांच्या शाश्वत विकासासाठी आर्थिक, पायाभूत व व्यवस्थापकीय क्षमतावृद्धीवर आधारित धोरणात्मक हस्तक्षेपांची आवश्यकता असल्यचे या अभ्यासातून अधोरेखित होते.

१. प्रस्तावना

शेतकरी उत्पादक संस्था (एफपीसी) भारतातील कृषी-आधारित परंपरेमध्ये एक प्रतिसंतुलन शक्ती म्हणून उदयास आलेल्या आहेत. ज्यांचा उद्देश लहान आणि अल्पभूधारक शेतकऱ्यांचा बाजारपेठ, निविष्ठा आणि वित्तीय सेवांपर्यंतचा प्रवेश सुधारुन त्यांच्या सामूहिक सौदाशक्तीला बळकटी देणे हा आहे. शेतकरी उत्पादक संस्था (एफपीसी) ही एक कायदेशीर संस्था असून जी संकरीत नमुन्याप्रमाणे कार्य करते. सहकारी संस्थांचे फायदे एकत्र करुन, त्याच वेळी खाजगी क्षेत्राप्रमाणे काही प्रमाणात कार्यात्मक कार्यक्षमता टिकवून ठेवणे हा यामागील उद्देश आहे. शेतकरी उत्पादक संस्थांची कामगिरी ही त्यांच्या कार्याचा आवाक आणि पायाभूत सुविधा, प्रशिक्षित मनुष्यबळ आणि संस्थात्मक पाठिंबा यांसारख्या संसाधनांच्या उपलब्धतेवरही लक्षणीयरीत्या अवलंबून असते. शेतकरी उत्पादक संस्था Farmers Producer Companies (FPC's) शेतीसमोरील समस्यांवर, विशेषत: लहान शेतकऱ्यांच्या समस्यांवर मात करण्याचा प्रयत्न करतात. ज्यात बाजारातील विषमता, मध्यस्थांकडून होणारे शोषण, सौदाशक्तीचा अभाव आणि कार्यात्मक अकार्यक्षमता यांचा समावेश आहे. निविष्ठा, पायाभूत सुविधा आणि बाजारपेठा सुरक्षित करण्यासाठी हा एक सामूहिक दृष्टिकोन आहे.

शेतकरी उत्पादक संस्था या भारतातील लहान शेतकऱ्यांची सामूहिक क्षमता मजबूत करण्यासाठी महत्त्वाच्या संस्था म्हणून ओळखल्या जातात. तसेच, अनेक शेतकरी उत्पादक संस्थांना सातत्याने कार्यात्मक, आर्थिक आणि पायाभूत आव्हानांचा सामना करावा लागतो, ज्यामुळे त्यांची कामगिरी आणि कृषी बाजारांवरील त्यांचा प्रभाव मर्यादित राहतो. शेतकरी उत्पादक कंपन्या (एफपीसी) अधिकाधिक महत्त्वाच्या होत असल्या तरीही त्यांना वित्तपुरवठ्याचा अभाव, खराब पायाभूत सुविधा, कमकुवत बाजारपेठ संबंध आणि अपुरी व्यवस्थापकीय कौशल्ये यांसारख्या अनेक आव्हानांना सामोरे जावे लागत आहे. यामुळे शेतकऱ्यांचे उत्पन्न आणि ग्रामीण उपजीविका सुधारण्यामध्ये विस्तारक्षमता, टिकाऊपणा आणि व्यवहार्य हस्तक्षेपाच्या बाबतीत अडचणी येतात.

१.१ अर्थ

नाशिक जिल्ह्यात एकूण शेतकरी उत्पादक संस्थांची आकडेवारी ७० असून त्यापैकी नोंदणीकृत शेतकरी उत्पादक संस्थांची संख्या ४८ इतकी आहे. द्राक्षे, डाळिंब आणि कांदे यांसारख्या बागायती उत्पादनांसाठी प्रसिद्ध असलेल्या नाशिकसारख्या उच्च-मूल्याच्या कृषी क्षेत्रांमध्ये शेतकरी उत्पादक संस्थांची Farmers Producer Companies (FPC's) भूमिका अत्यंत महत्त्वाची ठरते. या भागांतील बाजाराची वैशिष्ट्ये आणि काढणीनंतरच्या गुंतागुंतीमुळे आणखी एक कार्यात्मक आव्हान उभे राहते. भारत सरकार एसएफएसी Small

Farmers' Agribusiness Consortium (SFAC) आणि नाबार्ड या प्रोड्यूसर ऑर्गनायझेशन डेव्हलपमेंट फंड (पीओडीएफ) यांसारख्या शेतकरी उत्पादक कंपन्यांना प्रोत्साहन देत असले तरी, विविध जमिनीवरील मर्यादा त्यांच्या कामकाजात अडथळा निर्माण करतात.

कृषी अर्थशास्त्र, ग्रामीण विकास, संस्थात्मक सिद्धांत आणि बाजार प्रणाली या संकल्पना या संशोधन अभ्यासाच्या सैद्धांतिक आराखड्यात एकमेकांशी संबंधित आहेत. भारतातील शेतकरी उत्पादक संस्था (एफपीसी) ही एक संकरित संस्थात्मक नवकल्पना आहे, जी खाजगी उद्योगाची व्यावसायिक क्षमता एका सामूहिक गटाच्या सामाजिक उद्दिष्टात समाविष्ट करते आणि अशा प्रकारे ''व्यावसायिकीकरणासाठी सामूहिकीकरण'' या प्रतिमानाचे अनुसरण करते. अशा व्यवस्थेचा अभ्यास नव-संस्थात्मक अर्थशास्त्राच्या New Institutional Economics (एनआयई) दृष्टिकोनातून केला जाऊ शकतो, जे व्यवहार खर्च कमी करण्यात आणि आर्थिक कार्यक्षमता साधण्यात संस्थांच्या भूमिकेवर लक्ष केंद्रित करते.

१.२ संशोधन अभ्यासाची उद्दिष्ट्ये

i. नाशिक जिल्ह्यातील शेतकरी उत्पादक संस्थांच्या प्रगतीतील अडचणींचा अभ्यास करणे.
ii. नाशिक जिल्ह्यातील शेतकरी उत्पादक संस्थांच्या प्रगतीसाठी उपलब्ध असलेल्या संधींचे अध्ययन करणे

१.३ संशोधन गृहितके

i. नाशिक जिल्ह्यातील शेतकरी उत्पादक संस्थांच्या प्रगतीमध्ये अडचणी आहेत.
ii. नाशिक जिल्ह्यातील शेतकरी उत्पादक संस्थांच्या प्रगतीमध्ये अनेक संधी उपलब्ध आहेत.

१.४ अभ्यासाच्या मर्यादा

i. प्रस्तुत संशोधन हे नाशिक जिल्ह्यातील नोंदणीकृत शेतकरी उत्पादक संस्थांसाठीच मर्यादित आहे.
ii. संशोधन कालावधी २०२३-२४ निवडण्यात आलेला आहे.
iii. संशोधनाचे निकष महाराष्ट्रातील शेतकरी उत्पादक संस्थांना लागू पडतीलच असे नाही.

१.५ संशोधन समस्या

सहकारी तत्त्वांच्या आधारे निर्मित शेतकरी उत्पादक संस्थांची संख्या एक बाजूला भारतभरात मोठ्या प्रमाणात वाढलेली दिसून येते तर दुसऱ्या बाजूला याच शेतकरी उत्पादक संस्थांना त्यांच्या व्यावसायिक कामकाज आणि विविध स्तरांवर अनेक अडचणींचा सामना करावा लागतो. असे असले तरी या संस्थांसाठी असलेल्या संधीही दुर्लक्षित करुन चालणार नाही. यालाच अनुसरुन संशोधकाने 'नाशिक जिल्ह्यातील शेतकरी उत्पादक संस्थांच्या प्रगतीतील अडचणी व संधी' हा संशोधन विषय म्हणून निवडला आहे.

१.६ अभ्यासाची गरज

संपूर्ण भारतामधील अल्पभूधारक शेतकऱ्यांसाठी शेतकरी उत्पादक संस्था महत्त्वपूर्ण दुआ ठरत असून त्यांची प्रगती अवर्णनीय आहे. महाराष्ट्र राज्यातही अशा अनेक शेतकरी उत्पादक संस्था सक्षमतेने कार्यरत असल्याचे दिसते. परंतु या संस्थांना वेगवेगळ्या स्तरावर अनेक अडचणींचा सामना करावा लागतो. यासाठी शेतकरी उत्पादक संस्थांच्या प्रगतीतील अडचणी व संधींचे अध्ययन करणे महत्त्वपूर्ण ठरते.

१.७ अभ्यासाचे महत्त्व

या अभ्यासाचा उद्देश ही आव्हाने आणि त्यांचा शेतकरी उत्पादक संस्थांच्या बाजारपेठेतील निष्कर्षांवर होणारा परिणाम, विशेषत: कार्याची आवाक्यता आणि संसाधनांची उपलब्धता समजून घेणे हा आहे. यासाठी महाराष्ट्रातील एक प्रमुख फलोत्पादन क्षेत्र असलेल्या नाशिक जिल्ह्यावर लक्ष केंद्रित करण्यात आलेले आहे. शेतकरी उत्पादक कंपन्यांची कामगिरी आणि पायाभूत सुविधा, वित्तपुरवठा आणि मनुष्यबळ यांसारख्या कार्यात्मक मर्यादा यांच्यात महत्त्वपूर्ण संबंध आहे. असेही आढळून आले की, आकार आणि संसाधनांच्या उपलब्धतेच्या बाबतीत मोठ्या असलेल्या शेतकरी उत्पादक संस्थांचा बाजारावर खूप जास्त प्रभाव पडतो. त्यामुळे, दोन्ही पर्यायी परिकल्पना वैध ठरल्या, तसेच लक्ष्यित हस्तक्षेपांद्वारे प्रणालीगत मर्यादांवर प्रभावीपणे मात करण्यावर अधिक भर देण्याची गरज असल्याचेही दिसून आले.

१.८ संशोधन पद्धती

सदर संशोधनात प्राथमिक माहिती संकलनासाठी प्रश्नावली पद्धतीचा अवलंब केलेला आहे. प्रश्नावली Likert Scale (5 Point Scale) वर आधारित असून, नाशिक जिल्ह्यातील शेतकरी उत्पादक संस्थांच्या अडचणी व संधी यांचा अभ्यास करण्यासाठी तयार करण्यात आलेली आहे. तसेच, प्रस्तुत शोधनिबंधामध्ये माहितीचे संकलन दुय्यम स्त्रोतांद्वारेही करण्यात आलेले आहे. त्यासाठी 'महाराष्ट्र राज्य कृषि पणन मंडळ'चे अधिकृत संकेतस्थळ, शेतकरी उत्पादक संस्थांसाठी राबवण्यात येणाऱ्या शासकीय योजनांचे अहवाल, संबंधित शोधनिबंध व शोधप्रबंध या द्वितीयक साधनांचा वापर केलेला आहे. यासाठी विश्लेषणात्मक संशोधन पद्धतीचा (Analytical Research Method) उपयोग केला आहे.

२. साहित्य पुनरावलोकन

भारतातील राज्यनिहाय शेतकरी उत्पादक संस्थांची आकडेवारी, या संस्थांवर असलेला सहकाराचा विशिष्ट प्रभाव, अल्पभूधारक व त्यांचा शेतकरी उत्पादक संस्थांमधील सहभाग तसेच या संस्थांसाठी उपलब्ध असणाऱ्या संधी यावर 'फार्मर्स प्रोड्यूसर कंपनीज् इन इंडिया : डीमएस्टीफाईंग द नंबर्स' ह्या संशोधनपत्राद्वारे भाष्य करण्यात आलेले आहे. शेतकरी उत्पादक संस्थांसमोर असलेल्या आव्हानांचा उल्लेखही त्यात करण्यात आलेला आहे. वरील विषयाशी निगडीत साहित्याचा आढावा घेत असताना 'स्टेट ऑफ महाराष्ट्राज ॲग्रीबिझनेस अँड रुरल ट्रान्सफॉरमेशन प्रोजक्ट' या प्रकल्पातील बरीचशी माहिती शेतकरी उत्पादक संस्थांविषयी असल्याचे आढळून आले. महाराष्ट्रातील अधिकाधिक शेतकरी उत्पादक संस्थांसाठी उपयुक्त असलेल्या योजनांचे व त्यांच्या अहवालांचे अध्ययन करुन, त्यात आवश्यक असणाऱ्या सुधारणा 'स्टेट ऑफ महाराष्ट्राज ॲग्रीबिझनेस अँड रुरल ट्रान्सफॉरमेशन प्रोजक्ट' या प्रकल्पाद्वारे मांडण्यात आलेल्या आहेत. शेतकरी उत्पादक संस्थांना भविष्यात अनेक संधी दिसून येतात. त्याचप्रमाणे त्यांना बऱ्याच अडचणींचा सामानाही करावा लागत असल्याचे या प्रकल्पामार्फत दिसून येते. शेतकरी उत्पादक संस्थांचा इतिहास, त्यांच्यासमोर असलेली

आव्हाने व भविष्यकालीन संधी यांचा उल्लेख 'एवल्यूशन ऑफ फार्मर प्रोड्यूसर ऑर्गनायझेशन्स : चॅलेंजेस अँड आपोरच्युनिटीज' या संशोधन पत्रामध्ये करण्यात आलेला आहे. महाराष्ट्रातील शेतकरी उत्पादक संस्थांचे आंतरिक मूल्यांकन व त्यांच्या डिजिटल गरजांविषयीचे अध्ययन 'डिजिटल नीडस् अँड गॅप्स असेसमेंट फॉर फार्मर्स ऑर्गनायझेशन इन महाराष्ट्र, इंडिया' या संशोधनपत्रामध्ये करण्यात आलेले आहे.

३. नाशिक जिल्ह्यातील शेतकरी उत्पादक संस्थांमध्ये कार्यरत सहभागींच्या लोकसंख्याशास्त्रीय वैशिष्ट्यांचे विश्लेषण

खालील तक्त क्र. ०१ मध्ये संशोधनासाठी निवडण्यात आलेल्या नाशिक जिल्ह्यातील शेतकरी उत्पादक संस्थांच्या उत्तरदात्यांची लोकसंख्याशास्त्रीय माहिती सादर करण्यात आली आहे. या तक्त्यामध्ये उत्तरदात्यांचे लिंग, वयोगट, शैक्षणिक पात्रता तसेच शेतकरी उत्पादक संस्थेतील अनुभवाचा कालावधी या घटकांच्या आधारे वर्गीकरण करण्यात आले आहे. सदर माहितीच्या आधारे उत्तरदात्यांचा सामाजिक व शैक्षणिक स्तर समून घेण्यास मदत होते तसेच संशोधनाच्या पुढील विश्लेषणासाठी भक्कक आधार प्राप्त होतो.

तक्ता क्र. ०१ मधील माहितीनुसार एकूण उत्तरदात्यांपैकी पुरुष उत्तरदात्यांचे प्रमाण अधिक असून महिलांचे प्रमाण कमी आहे. वयोगटाच्या वर्गीकरणावरुन असे दिसून येते की, १८ ते ५० वर्षे वयोगटातील उत्तरदाते अधिक प्रमाणात सहभागी आहेत, ज्यावरुन कार्यरत व अनुभवसंपन्न शेतकऱ्यांचा सहभाग जास्त असल्याचे स्पष्ट होते. शैक्षणिक पात्रतेच्या बाबतीत, बहुतांश उत्तरदाते माध्यमिक व उच्च माध्यमिक शिक्षण घेतलेले असून काही प्रमाणात पदवीधर व पदव्युत्तर शिक्षण घेतलेले उत्तरदातेही आढळतात. यावरुन शेतकरी उत्पादक संस्थांमधील अनुभवाच्या कालावधीवरुन असे दिसून येते की, ० ते १० वर्षांचा अनुभव असलेले उत्तरदाते अधिक प्रमाणात आहेत, ज्यामुळे संस्थेच्या कार्यपद्धती व समस्यांविषयी त्यांना सखोल ज्ञान असल्याचे दिसून येते.

तक्ता क्र. ०१

सहभागींची लोकसंख्याशास्त्रीय वैशिष्ट्ये

लोकसंख्याशास्त्रीय घटक	श्रेणी	वारंवारता (%)
लिंग	पुरुष (१२९), स्त्री (७१)	१२९ (६४.५%), ७१ (३५.५%)
वयोगट	१८-३५ (४९), ३५-५० (८९), ५१-६५ (४७), ६५+ (१५)	४९ (२४.५%), ८९ (४४.५%), ४७ (२३.५%), १५ (७.५%)
शैक्षणिक पातळी	पदविकाधारक (२४), पदवीधर (७८), पदव्युत्तर (७५), इतर (२३)	२४ (१२%), ७८ (३९%), ७५ (३७.५%), २३ (११.५%)
शेतकरी उत्पादक संस्थेमधील अनुभवाचा काळ	०-२ वर्ष (५८), ३-५ वर्ष (९१), ६-१० वर्ष (४१), १०+ वर्ष (१०)	५८ (२९%), ९१ (४५.५%), ४१ (२०.५%), १० (५.०%)

पुढे ही लोकसंख्याशास्त्रीय रचना नाशिक जिल्ह्यातील शेतकरी उत्पादक संस्थांच्या कामगिरीवर आव्हानांचे विश्लेषण करण्यासाठी आणि प्रमाण व संसाधनांच्या परिणामांना जोडण्यासाठी पुरेसा आधार देते.

३.१ नाशिक जिल्ह्यातील शेतकरी उत्पादक संस्थांच्या कार्यक्षमतेवर परिणाम करणाऱ्या अडचणींविषयी उत्तरदात्यांची मते – संक्षिप्त विश्लेषण

तक्ता क्र. ०२ मधील माहितीवरुन नाशिक जिल्ह्यातील शेतकरी उत्पादक संस्थांच्या कार्यक्षमतेवर परिणाम करणाऱ्या विविध आव्हानांबाबत उत्तरदात्यांची मते स्पष्टपणे दिसून येतात. या तक्त्यात एकूण २०० उत्तरदात्यांची मते Likert Scale च्या आधारे नोंदविण्यात आलेली आहेत. तक्त्यानुसार, आर्थिक संसाधनांचा अभाव हे शेतकी उत्पादक संस्थांच्या कार्यावर मर्यादा आणणारी प्रमुख समस्या असल्याचे दिसून येते, कारण या विधानास बहुसंख्य उत्तरदात्यांनी सहमत व पूर्णत: सहमत अशी प्रक्रिया दिलेली आहे.

त्याचप्रमाणे, अपुऱ्या पायाभूत सुविधा (साठवणूक व वाहतूक) या बाजारपेठेत प्रभावीपणे पोहोचण्यास अडथळा ठरत असल्याचे बहुसंख्य उत्तदात्यांचे मत आहे. कार्यक्षमतेशी संबंधित अडचणी, विशेषत: खरेदी व विक्री व्यवस्थापनातील अडथळे, यामुळे संस्थेच्या कार्यक्षमतेवर नकारात्मक परिणाम होत असल्याचेही या तक्त्यातून स्पष्ट होते. याशिवाय, प्रशिक्षित मनुष्यबळाच्या कमतरतेमुळे शेतकरी उत्पादक संस्थांच्या एकूण कार्यप्रदर्शनावर विपरीत परिणाम होत असल्याचे उत्तरदात्यांनी मान्य केले आहे. तसेच, शासकीय योजना व सहाय्य मिळवताना येणाऱ्या अडचणी या कंपन्यांच्या वाढीमध्ये अडथळा ठरत असल्याचेही बहुसंख्य उत्तरदात्यांच्या प्रतिक्रियांमधून दिसून येते.

एकूणच, या तक्त्यातील विश्लेषणावरुन असा निष्कर्ष काढता येतो की, आर्थिक, पायाभूत, व्यवस्थापनात्मक व प्रशासकीय अडचणी या नाशिक जिल्ह्यातील शेतकरी उत्पादक संस्थांच्या कार्यक्षमतेवर लक्षणीय परिणाम करतात. त्यामुळे या आव्हानांवर मात करण्यासाठी धोरणात्मक हस्तक्षेप व योग्य उपाययोजना आवश्यक आहेत.

तक्ता क्र. ०२

जिल्ह्यातील शेतकरी उत्पादक संस्थांच्या कार्यक्षमतेवर परिणाम करणाऱ्या अडचणींविषयी उत्तरदात्यांची मते

क्र.	प्रश्न	पूर्णपणे असहमत (१)	असहमत (२)	तटस्थ (३)	सहमत (४)	पूर्णपणे सहमत (५)	सरासरी प्राप्तांक
१	आर्थिक संसाधनांच्या अभावामुळे आमच्या शेतकरी उत्पादक संस्थांच्या कामकाजावर मर्यादा येतात.	१३ (६.५)	१५ (७.५)	२८ (१४.०)	६५ (३२.५)	७९ (३९.५)	२०० (१००)
२	अपुरे पायाभूत सुविधा (साठवणूक, वाहतूक) यामुळे बाजारपेठेत प्रभावीपणे पोहोचण्याच्या आमच्या क्षमतेवर परिणाम होतो.	१० (५.०)	२२ (११.०)	१५ (७.५)	७० (३५.०)	८३ (४१.५)	२०० (१००)
३	कार्यवाहीतील आव्हानांमुळे खरेदी आणि विक्री व्यवस्थापनातील आमची कार्यक्षमता कमी होते.	१७ (८.५)	३४ (१७.०)	२० (१०.०)	५७ (२८.५)	७२ (३६.०)	२०० (१००)
४	प्रशिक्षित कर्मचाऱ्यांच्या कमतरतेमुळे आमच्या शेतकरी उत्पादक संस्थांच्या एकूण कामगिरीवर परिणाम होतो.	१२ (६.०)	१७ (८.५)	१८ (९.०)	७३ (३६.५)	८० (४०.०)	२०० (१००)
५	प्रशिक्षित कर्मचाऱ्यांच्या कमतरतेमुळे आमच्या शेतकरी उत्पादक संस्थांच्या एकूण कामगिरीवर परिणाम होतो.	०८ (८.०)	१५ (७.५)	१० (५.०)	८२ (४१.०)	८५ (४२.५)	२०० (१००)

टीप: कंसात दिलेली आकडेवारी एकूण संख्येची टक्केवारी दर्शविते.

३.२ शेतकरी उत्पादक संस्थांच्या बाजार कार्यक्षमतेवर, कार्याचा स्तर व संसाधन उपलब्धतेचा परिणाम संक्षिप्त विश्लेषण

तक्ता क्र. ०३ मधील माहितीवरुन शेतकरी उत्पादक संस्थांच्या Farmers Producer Companies (FPC's) कार्यक्षेत्राचा स्तर (Scale of Operation) आणि संसाधनांची उपलब्धता यांचा त्यांच्या बाजार कार्यक्षमतेवर लक्षणीय प्रभाव असल्याचे स्पष्टपणे दिसून येते. या तक्त्यात एकूण २०० उत्तरदात्यांची मते Likert Scale च्या आधारे संकलित करण्यात आली आहेत.

तक्त्यानुसार, कार्याचा स्तर वाढल्यास मोठ्या बाजारपेठांपर्यंत पोहोच सुलभ होते. या विधानाशी बहुसंख्य उत्तरदाते सहमत किंवा पूर्णत: सहमत असल्याचे आढळते. यावरुन मोठ्या प्रमाणावर कार्य करणाऱ्या FPC's ना बाजारपेठेत अधिक संधी उपलब्ध होतात, हे स्पष्ट होते. पुरेशा संसाधनांच्या उपलब्धतेमुळे बाजारातील सौदेबाजीची क्षमता

(Bargaining Power) वाढते, असे बहुसंख्य उत्तरदात्यांचे मत आहे. याचा अर्थ असा की, आर्थिक व भौतिक संसाधने मजबूत असलेल्या शेतकरी उत्पादक संस्था बाजारात अधिक प्रभावीपणे व्यवहार करु शकतात. लहान स्तरावर कार्य करणाऱ्या शेतकरी उत्पादक संस्थांना उच्च-मूल्य बाजारपेठांमध्ये प्रवेश करताना अधिक अडचणी येतात, या विधानासही मोठ्या प्रमाणावर सहमती दर्शविण्यात आली आहे. यावरुन कार्याचा मर्यादित स्तर हा बाजार विस्तारातील महत्त्वाचा अडथळा ठरत असल्याचे दिसून येते.

संसाधन संपन्न शेतकरी उत्पादक संस्था अधिक चांगले दर व करार (Contracts) ठरवू शकतात, असे उत्तरदात्यांनी मान्य केले आहे. तसेच, पायाभूत सुविधा व आर्थिक क्षमता यांचा शेतकरी उत्पादक संस्थांच्या बाजार पोहोचावर लक्षणीय परिणाम होतो, हेही तक्त्यातील निष्कर्षांवरुन स्पष्ट होते.

तक्ता क्र. ०३

जिल्ह्यातील शेतकरी उत्पादक संस्थांच्या बाजार कार्यक्षमतेवर, कार्याचा स्तर व संसाधन उपलब्धतेचा परिणाम करणाऱ्या संधींविषयी उत्तरदात्यांचे मते

क्र.	प्रश्न	पूर्णपणे असहमत (१)	असहमत (२)	तटस्थ (३)	सहमत (४)	पूर्णपणे सहमत (५)	सरासरी प्राप्तांक
१	आमच्या शेतकरी उत्पादक संस्थांच्या कामकाजाचा आवाका आमच्या मोठ्या बाजारपेठांपर्यंतच्या पोहोचेवर थेट परिणाम करतो.	०७ (३.५)	१२ (६.००)	२५ (१२.५)	७२ (३६.००)	८४ (४२.००)	२०० (१००)
२	उत्तम संसाधनांच्या उपलब्धतेमुळे बाजारात आमच्या शेतकरी उत्पादक संस्थांची सौदा करण्याची शक्ती सुधारते.	०९ (४.५)	१७ (८.५)	२१ (१०.५)	८६.५ (४३.२५)	६६.५ (३३.२५)	२०० (१००)
३	मोठ्या प्रमाणावरील शेतकरी उत्पादक संस्थांच्या तुलनेत लहान प्रमाणावरील शेतकरी उत्पादक संस्थांना उच्च-मूल्याच्या बाजारपेठांमध्ये प्रवेश करताना अधिक अडचणी येतात.	१४ (७.०)	१९ (९.५)	१६ (८.०)	७८.५ (३९.२५)	७२.५ (३६.२५)	२०० (१००)
४	उत्तम संसाधने असलेल्या शेतकरी उत्पादक संस्था चांगल्या किमती आणि करारांवर वाटाघाटी करू शकतात.	१४ (७.०)	१७ (८.५)	१४ (७.०)	६७ (३३.५)	८८ (४४.०)	२०० (१००)
५	शेतकरी उत्पादक संस्थांच्या बाजारपेठेतील पोहोचेवर त्यांच्या पायाभूत सुविधा आणि आर्थिक क्षमतेचा लक्षणीय परिणाम होतो.	१२ (६.०)	१६ (८.०)	१२ (६.०)	७९ (३९.५)	८१ (४०.५)	२०० (१००)

टीप: कंसात दिलेली आकडेवारी एकूण संख्येची टक्केवारी दर्शविते.

एकूणच, या तक्त्यातील विश्लेषणावरुन असे निष्कर्ष काढता येतो की, शेतकरी उत्पादक संस्थांचा कार्याचा स्तर व संसाधनांची उपलब्धता ही त्यांच्या बाजार कार्यक्षमतेसाठी अत्यंत निर्णायक घटक आहेत. त्यामुळे लहान व संसाधन अभावी शेतकरी उत्पादक संस्थांसाठी आर्थिक, पायाभूत व संस्थात्मक सहाय्य वाढविणे आवश्यक आहे.

वरील अभ्यासातून असे निदर्शनास आले की, शेतकरी उत्पादक संस्थांच्या प्रगतीमध्ये विविध अडचणी आहेतच पण अनेक संधीदेखील उपलब्ध आहेत. यावरुन अभ्यासादरम्यान सादर केलेली दोन्ही गृहितके स्वीकृतीदर्शक आहेत असे कळून येते.

४. निष्कर्ष

- **कार्यवाहीविषयक आणि आर्थिक अडथळे गंभीर आहेत :** बहुतेक प्रतिसादकर्त्यांनी यावर ठामपणे सहमती दर्शवली की, आर्थिक संसाधनांचा अभाव आणि अपुऱ्या पायाभूत सुविधांमुळे एफपीसीच्या कार्यप्रणालीत आणि कार्यक्षमतेत लक्षणीय अडथळे येतात, ज्यामुळे कार्यक्षमतेच्या मर्यादांमध्ये त्यांची मुख्य भूमिका अधोरेखित होते.
- **मानव संसाधन आणि सरकारी मदतीतील त्रूटी :** प्रतिसादकर्त्यांनी कर्मचाऱ्यांची कमतरता आणि सरकारी योजनांपर्यंत मर्यादित पोहोच यामुळे होणाऱ्या कार्यात्मक अकार्यक्षमतेवर प्रकाश टाला, ज्यामुळे प्रशासकीय क्षमता-बांधणी आणि सुव्यवस्थित धोरणात्मक समर्थनाची नितांत गरज असल्याचे सूचित होते.
- **व्याप्ती आणि संसाधनांची उपलब्धता बाजारावरील परिणाम निश्चित करतात :** बहुतेक सहभागींनी सहमती दर्शवली की, चांगल्या संसाधनांची युक्त आणि मोठ्या प्रमाणावरील एफपीसींना बाजारात चांगला प्रवेश, सुधारित वाटाघाटाची शक्ती आणि व्यापक पोहोच मिळते, ज्यामुळे बाजारातील कामगिरीतील असामानता सिद्ध होते.
- अभ्यासातून असे आढळफन आले आहे की, पायाभूत सुविधांमधील कमतरता, विशेषत: साठवणूक आणि वाहतुकीच्या बाबतीत, तसेच ई-एनएएम e-National Agriculture Market (eNAM) सारख्या डिजिटल बाजार साधनांबद्दल अज्ञानामुळे शेतकरी उत्पादक संस्थांना (FPC's) चांगल्या किमती मिळवण्यात आणि मध्यस्थांवरील अवलंबित्व कमी करण्यात अडथळे येतात. याव्यतिरिक्त, मोठ्या प्रमाणावरील उत्पादनाा फायदा (इकॉनॉमीज ऑफ स्केल) नसणे आणि मोठ्या व लहान शेतकरी उत्पादक कंपन्यांमधये बाजारातील संसाधनांची विषमता, यामुळे शेतकरी उत्पादक कंपन्यांना बाजारपेठेत असमान संधी मिळते आणि त्यांची सौदाशक्ती कमी होते. पायाभूत सुविधांमध्ये सुधारणा करणे, आर्थिक शाश्वततेच्या दिशेने काम करणे आणि व्यवस्थापकीय क्षमता वाढवणे या बाबी शेतकरी उत्पादक संस्थांमध्ये (FPC's) शाश्वतता प्राप्त करण्यासाठी महत्त्वाच्या आहेत.
- शाश्वत शेतकरी उत्पादक संस्थांसाठी संसाधनांची समृद्ध आणि संसाधनांची कमतरता असलेल्या कंपन्यांमधील कामगिरीतील तफावत भरुन काढण्यासाठी, डिजिटल साधने आणि प्लॅटफॉर्म समाकलित करणाऱ्या वेगळ्या धोरणांची आणि समर्थनाची आवश्यकता असेल. हे निष्कर्ष धोरणकर्ते, कृषी-व्यवसाय क्षेत्रातील भागधारक आणि भारतातील कृषी विकासाचा सामूहिक नमुना मजबूत करु इच्छिणाऱ्या विकास संस्थांमध्ये एक मार्ग दाखवतात.

५. शिफारसी

कार्यरत भांडवलापासून ते व्याज सवलती आणि सरकार-समर्थित अनुदानांपर्यंतच्या आर्थिक सहाय्य यंत्रणाां विस्तार करणे आवश्यक मानले जाते. विशेषत: लहान ते मध्यम आकाराच्या शेतकरी उत्पादक संस्थांच्या (FPC's) बाबतीत, साठवणूक, वाहतूक आणि डिजिटल बाजारपेठांसारख्या पायाभूत सुविधांच्या निर्मितीलाही प्राधान्य दिले पाहिजे. वित्तपुरवठा, आर्थिक साक्षरता आणि पुरवठा साखळी व्यवस्थापनावर कर्मचाऱ्यांच्या प्रशिक्षणासाठी नियमित क्षमता-निर्माण कार्यक्रम अंतर्गत कार्यक्षमता सुधारण्यासाठी आणि कार्यान्वयनातील अडथळे कमी करण्यासाठी उपयुक्त ठरतात.

याव्यतिरिक्त, लहान आणि मोठ्या आकाराच्या शेतकरी उत्पादक संस्थांमध्ये फरक करणारी एक धोरणात्मक चौकट तयार केली पाहिजे. अशा सरकारी योजनांनी संसाधनांची कमतरता असलेल्या या शेतकरी उत्पादक कंपन्यांपर्यंत पोहोचण्यासाठी आणि त्यांची सामूहिक सौदशक्ती वाढवण्यासाठी समूह-आधारित दृष्टिकोन स्वीकारला पाहिजे. माहितीतील विषमता कमी करण्यासाठी आणि पारदर्शकता वाढवण्यासाठी ई-एनएम सारख्या डिजिटल प्लॅटफॉर्मचा आणि कृत्रिम बुद्धिमत्ता व मोबाइल-आधारित बाजार माहिती प्रणालींसारख्या उदयोन्मुख तंत्रज्ञानाचा अवलंब करण्यास सक्रियपणे प्रोत्साहन द्यावे. शेतकरी उत्पादक कंपन्या आणि खाजगी कंपन्या/कृषी-तंत्रज्ञान संस्था यांच्यात धोरणात्मक भागीदारीला प्रोत्साहन दिल्याने बाजारातील उत्तम एकात्मता आणि मूल्या प्राप्तीला चालना मिळू शकते. जर या उपाययोजना विविध भागधारकांच्या सहभागाने राबवल्या गेल्या, तर त्यामुळे नाशिक जिल्ह्यात आणि आसपासच्या विविध शेतकरी उत्पादक संस्थांची सर्वसमावेशकता, विस्तारक्षमता आणि शाश्वतता वाढेल.

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