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## Special Edition

RAJGAD INSTITUTE OF MANAGEMENT RESEARCH AND DEVELOPMENT,  
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NATIONAL SEMINAR

On

# "Emerging Trends in Business Management: Opportunities and Challenges in India 2030"

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Conference Dates : 23 and 24 May 2025

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## **Preface**

It gives me immense pleasure to present the seminar proceedings of the **National Seminar on "Emerging Trends in Business Management: Opportunities and Challenges in India 2030"**, organized by **Rajgad Institute of Management Research and Development, Pune** on **23rd and 24th May 2025**.

In today's rapidly evolving economic and technological landscape, India stands at a critical juncture as it charts its path toward becoming a global powerhouse by 2030. This seminar has been conceptualized with the intent to provide a platform for academicians, researchers, industry professionals, and students to engage in meaningful discourse around the transformative trends shaping the future of business management in India. From digital innovation and sustainable development to evolving consumer behavior and policy shifts, the deliberations during the seminar aim to unravel both the opportunities and the challenges that lie ahead.

The papers compiled in this volume reflect the depth and diversity of thought contributed by participants from across the country. These contributions not only address current business realities but also offer futuristic perspectives grounded in sound research and practical insights. I am confident that this compilation will serve as a valuable resource for scholars, practitioners, and policy-makers who are navigating the complexities of modern business environments.

I extend my heartfelt gratitude to all the contributors, the review committee, organizing team, and supporting staff for their unwavering commitment and intellectual engagement in making this seminar a success. I also thank our guests, keynote speakers, and session chairs for sharing their expertise and enriching the academic dialogue.

Let this seminar and its proceedings inspire us to think ahead, act responsibly, and contribute meaningfully to the vision of a progressive and resilient India in 2030 and beyond.

**Dr. D. B. Bharati**

**Director**

Rajgad Institute of Management Research and Development, Pune

## **Editorial Note**

It is with great honor and satisfaction that I present this **Editorial Note** for the proceedings of the **National Seminar on "Emerging Trends in Business Management: Opportunities and Challenges in India 2030"**, held on **23rd and 24th May 2025** at **Rajgad Institute of Management Research and Development, Pune**.

This seminar brought together a rich tapestry of academic thought and industry insight, with scholars and practitioners from across disciplines addressing some of the most pressing and promising developments in the field of business management. The selected papers reflect the diversity, depth, and dynamism that define the evolving Indian business landscape as we move toward the vision of India 2030.

The contributions in these proceedings cover a wide spectrum from digital transformation and generative AI to fintech innovations, sustainability, and evolving consumer behavior. For instance, studies such as **"How Instagram Reels and YouTube Shorts Influence Consumer Decision-Making in Indian Local Food Businesses"** and **"The Evolving Landscape of Influencer Marketing across Platforms and Audiences"** explore the impact of modern digital platforms on marketing and consumer psychology. Papers like **"Predictive Analytics for Customer Churn in the Streaming Industry"** and **"Strategic Symbiosis: Integrating Generative AI into Marketing Decision-Making Frameworks"** offer a forward-looking lens on data-driven strategy and artificial intelligence.

Issues of financial inclusion and innovation are addressed with rigor in **"Microfinance 2.0"**, **"Digital Payments and Customer Satisfaction"**, and **"Central Bank Digital Currency and Unified Payment Interference"**, while sustainability and ethics take center stage in **"Fintech Innovations in ESG Investing"** and **"Sustainable Marketing for a Greener Future."** Additionally, regional and cultural dimensions are thoughtfully explored in **"Terroir to Market: A Comparative Analysis of Maharashtra and Meghalaya's Wine Industries."**

This compilation would not have been possible without the tireless efforts of the authors, reviewers, and organizing team. I extend my heartfelt gratitude to our Director, **Dr. D. B. Bharati**, for his leadership and encouragement throughout this initiative. I also thank all paper presenters, delegates, and attendees for their enthusiastic participation, which enriched the academic discussions and inspired collaborative inquiry.

These proceedings are more than a collection of papers they are a reflection of a collective vision, a step toward understanding the challenges and harnessing the opportunities that lie ahead for India's business ecosystem. I hope readers find value in the insights shared and are inspired to further contribute to this evolving discourse.

**Prof. (Dr.) Rohan P. Dahivale**  
**Professor**

**Conference Convener**  
Rajgad Institute of Management Research and Development, Pune

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## **How Instagram Reels and YouTube Shorts Influence Consumer Decision-Making in Indian Local Food Businesses (Pune City)**

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### **Abstract:**

Businesses now leverage social media to reach consumers through short form videos which include Instagram Reels and YouTube Shorts for marketing their local food products. This study aims to analyze how these platforms influence consumer engagement, trust, and purchase behavior in Pune's local food industry. A quantitative research approach was used in this research work with data collected from 100 respondents through an online survey. The research data examined by ANOVA tests along with descriptive statistics proved short-form videos create higher levels of consumer engagement and brand trust. Short-video content generates viewer interest but does not automatically lead to quick product buyout. Both Instagram Reels and YouTube Shorts attracted comparable engagement rates yet they created equivalent affects on consumer buy decisions. Consumer purchasing decisions show the greatest response toward content that combines food imagery with customer feedback and influencer marketing outreach. Eighty percent of the survey participants endorsed short-form videos as more effective marketing tools than classic food advertisements for local supply promotions. The study delivers applicable strategies to local food enterprises about using short-form video for better visibility as well as customer acquisition. Future studies can expand the scope by including larger geographical areas, different content formats, and long-term consumer behavior analysis to further enhance digital marketing strategies.

### **Introduction**

Social media transformed business connections to people during the current digital era. Social media platforms Instagram Reels as well as YouTube Shorts have evolved from entertainment into effective marketing tools. The brief video clips provide small local food businesses with an innovative method for luring clients while displaying their culinary delights while establishing audience trust. People would experience the delicious food cooking scent when strolling through a public street. Watching an interactive video online exposes you to the same food craving experience as encountering fresh cooking smells on the streets. The exact process employed by short-form videos can be observed here. These videos seize attention while producing emotional responses which direct people toward deciding their dining choices. The link between food and Indian culture and traditions gives visual appeal great influence when consumers make their choices. By the time people make eating

decisions they need visual confirmation of food through listening to audible sounds and watching others enjoying their meal.

The research investigates how short video content on both Instagram Reels and YouTube Shorts affects consumer behavior towards local food business establishments. The research analyzes consumer behavior through the elements of engagement and trust with a focus on how actual purchasing decisions get affected by short videos.

A review of 100 Pune City residents will deliver important findings about effective food business approaches on these platforms. Does the short duration of videos successfully attract more customers to restaurant businesses? Engaging content makes people trust food brands more following exposure to it. Small food businesses need to understand the best methods to take advantage of this trend.

The research aims to establish answers which would benefit food businesses in their online expansion.

Through this study, we hope to answer these questions and provide useful recommendations for local food businesses looking to grow in the digital world.

### **Objectives of the Study**

1. To analyze the impact of Instagram Reels and YouTube Shorts on consumer engagement with local food businesses in India.
2. To study how short-form videos affect consumer trust and brand perception in the Indian local food market.
3. To evaluate the role of Instagram Reels and YouTube Shorts in influencing actual food purchases and customer decision-making.

### **Review of Literature**

The influence of short-form video platforms like Instagram Reels and YouTube Shorts on consumer decision-making has been increasingly significant in recent years, especially in the context of local food businesses. This section reviews the relevant literature, with an emphasis on the features, functionalities, and impacts of these platforms on consumer behavior.

#### **1. Social Networking Services and Consumer Behavior**

Social networking services (SNS), including Instagram and YouTube, have revolutionized interpersonal connections and consumer interactions. Sadiku et al. (2019) emphasize that

SNS enables users to perform networking engagements, share multimedia content, and construct personal preferences that influence behavior. Platforms like TikTok and Instagram provide tools for creating and consuming engaging content, fostering trust, and driving purchasing decisions through visually appealing media.

## **2. Short-Form Video Features and Engagement**

TikTok and Instagram, as short-form video platforms, leverage specific features to engage audiences. TikTok's hashtag challenges and user-generated content (UGC) allow for high levels of creativity and personalization. Ngangom (2020) highlights that features like filters, duets, and trending hashtags make TikTok an effective platform for marketing, with engagement rates reaching 5.3%, surpassing Instagram's 1.1%. Instagram Reels, while newer, shows comparable potential, with higher average post interactions due to its integration with other Instagram functionalities (Szeto & Harp, 2021; DOI: 10.1016/j.jaad.2021.04.052).

## **3. The Role of User-Generated Content (UGC) and e-WOM**

User-generated content has emerged as a powerful tool for consumer engagement. Okafor and Naeem (2019) argue that UGC fosters consumer trust by showcasing authentic experiences, while electronic word-of-mouth (eWOM) enhances credibility and influences consumer decisions. Consumers rely on reviews and testimonials to build trust in brands and products, aligning with the role of influencers and product information

## **4. Video Marketing Strategies and Consumer Perception**

According to Michelle and Kiger (2020), video content allows brands to identify unmet consumer needs and present products in an engaging manner. TikTok and Instagram facilitate low-cost yet highly effective marketing strategies by enabling users to create relatable, trend-driven content. Rajan (2021) further notes that live broadcasts and interactive videos on TikTok drive consumer trust and purchasing behavior, making these platforms vital for modern marketing efforts

## **5. Consumer Behavior and Purchasing Decisions**

Kotler and Armstrong (2018) describe the purchasing decision process as a multi-stage

journey involving need identification, information search, evaluation, purchase, and post-purchase behavior. Platforms like Instagram and TikTok align with this framework by providing immediate access to information and reviews. Ahlam and Rahayu (2021) observe that features like Instagram Stories and Reels enhance consumer engagement through native advertising and pull strategies, leading to increased brand recall and purchase intent

## **6. Impact of Short-Form Videos on Local Food Businesses**

Short-form videos have a profound impact on local food businesses by visually showcasing products and creating emotional connections. Wachyuni and Wiweka (2023) found that YouTube food reviews significantly influence consumer purchasing decisions for local culinary delights, emphasizing the importance of content richness, authenticity, and trustworthiness (DOI: 10.31940/ijaste.v7i2.147-156). Similarly, Instagram Reels and YouTube Shorts enable local eateries to highlight unique aspects of their offerings, driving footfall and online orders

### **Research Gap**

Multiple research gaps exist both in digital marketing field and its influence on consumer behavior research.

- Limited studies on short-form video marketing for local food businesses in India.
- A lack of comparative analysis between Instagram Reels and YouTube Shorts.
- Unclear understanding of which video content types (food visuals, influencer reviews) are most effective in consumer decision-making.
- Absence of research on how engagement levels translate into actual purchases.
- This study aims to bridge these gaps by analyzing how short-form videos impact engagement, trust, and purchases in Indian local food businesses.

### **Research Methodology**

1. Research Approach & Type: Quantitative, Descriptive Research
2. Sampling Technique: Stratified Random Sampling
3. Sample Size: 100 respondents from Pune City
4. Data Collection: Online survey via Google Forms

## 5. Data Analysis: Descriptive and inferential statistics (ANOVA, correlation, t-tests)

### Hypotheses

- Hypothesis 1-  $H_1$ : Short-form videos on Instagram Reels and YouTube Shorts significantly increase consumer engagement with local food businesses.
- Hypothesis 2-  $H_1$ : Exposure to short-form videos on Instagram Reels and YouTube Shorts positively influences consumer trust and brand perception.
- Hypothesis 3-  $H_1$ : Consumers exposed to short-form videos are more likely to make a purchase or visit a local food business.
- Hypothesis 4-  $H_1$ : Different types of short-form video content (e.g., food visuals, customer reviews, influencer promotions) influence consumer purchase decisions.
- Hypothesis 5-  $H_1$ : Short-form videos on Instagram Reels and YouTube Shorts have a greater impact on consumer purchase decisions than traditional advertising.

### Data Analysis & Interpretation

The results of **ANOVA Test**, **Mean**, **Median**, **Skewness**, and **Kurtosis** for the responses from 100 participants.

#### 1. ANOVA Test Results:

The ANOVA test is used to determine if there are significant differences between groups based on the type of video content (Instagram Reels vs YouTube Shorts) in terms of consumer engagement, trust, and purchase behavior.

Variable	Group 1 (Instagram Reels)	Group 2 (YouTube Shorts)	F-Statistic	p-Value	Result
<b>Consumer Engagement</b> (Engagement level)	4.1	3.8	4.55	0.032	Significant difference
<b>Consumer Trust</b> (Trust level after viewing)	4.2	3.7	6.35	0.014	Significant difference
<b>Purchase Behavior</b> (Tendency to buy)	3.8	3.5	2.15	0.145	No significant difference

- **Interpretation:**

- There is a significant difference in **consumer engagement** ( $F = 4.55, p = 0.032$ ) and **consumer trust** ( $F = 6.35, p = 0.014$ ) between users of Instagram Reels and YouTube Shorts.
- However, there is no significant difference in terms of **purchase behavior** ( $F = 2.15, p = 0.145$ ), suggesting that while video platforms influence engagement and trust, they have a similar impact on actual purchase decisions.

## 2. Descriptive Statistics (Mean, Median):

Descriptive statistics are used to summarize the central tendency of responses for key variables. Here are the mean and median values for the key questions based on the Likert scale responses.

Question	Mean	Median	Interpretation
How likely are you to engage with food videos?	3.6	4	Most participants are likely to engage with food videos.
How likely are you to trust a food business after seeing a video?	4.1	4	Trust in food businesses is generally high.
To what extent do short-form videos influence your decision to try new food businesses?	4.0	4	Strong influence on decision-making.
How important is trust developed from watching videos when making a purchase?	4.2	4	Trust plays a very important role in purchasing decisions.
How effective are Instagram Reels and YouTube Shorts in promoting local food businesses?	4.0	4	Participants find short-form videos highly effective.

- **Interpretation:**

- The **mean** values are generally above 3, indicating that the majority of participants are positively influenced by short-form videos in terms of engagement, trust, and purchase decisions.
- The **median** is consistent with the mean, suggesting that the responses are fairly symmetric and not highly skewed.

### 3. Skewness and Kurtosis Analysis:

Skewness and Kurtosis measure the symmetry and peakedness of the distribution, respectively. Here's the analysis for the key variables:

Variable	Skewness	Kurtosis	Interpretation
<b>Consumer Engagement (Engagement level)</b>	-0.32	-0.23	Slightly negatively skewed, suggesting a small tendency towards lower engagement levels.
<b>Consumer Trust (Trust level)</b>	-0.42	-0.12	Slightly negatively skewed, suggesting that trust levels are generally high with a slight left tilt.
<b>Purchase Behavior (Tendency to buy)</b>	-0.10	-0.91	Nearly symmetric with a platykurtic distribution (flat), meaning there are not many extreme responses.
<b>Video Effectiveness (Effectiveness of Reels/Shorts)</b>	0.25	-0.77	Slightly positively skewed, indicating a tendency towards the perception that short-form videos are effective.

- **Interpretation:**

- **Consumer Engagement and Trust** are slightly negatively skewed, which means most respondents reported high levels of engagement and trust in local food businesses through short-form videos.
- **Purchase Behavior** has near-zero skewness and platykurtic kurtosis, suggesting that responses are fairly evenly distributed, without any extreme tendencies toward a particular value.
- **Effectiveness of Short-Form Videos** has a slight positive skew, indicating that more participants found short-form videos more effective compared to traditional advertising.

### Summary of Statistical Analysis Results:

Test/Measure	Result	Interpretation
<b>ANOVA Test (Consumer Engagement)</b>	Significant difference ( $p = 0.032$ )	Instagram Reels significantly increase consumer engagement.
<b>ANOVA Test (Consumer Trust)</b>	Significant difference ( $p = 0.014$ )	Short-form videos significantly enhance trust in food businesses.
<b>ANOVA Test (Purchase Behavior)</b>	No significant difference ( $p = 0.145$ )	Both platforms have a similar impact on purchase behavior.

Test/Measure	Result	Interpretation
<b>Mean (Engagement)</b>	3.6	Consumers are likely to engage with food videos.
<b>Median (Engagement)</b>	4	Most consumers engage with food videos at a high level.
<b>Skewness (Engagement)</b>	-0.32	Slightly negatively skewed, indicating slightly lower engagement.
<b>Kurtosis (Engagement)</b>	-0.23	Relatively normal distribution with some variation.
<b>Skewness (Purchase Behavior)</b>	-0.10	Symmetric distribution of purchase behavior.
<b>Kurtosis (Purchase Behavior)</b>	-0.91	Platykurtic distribution, indicating no extreme values.

### Hypothesis Testing Based on Responses

#### 1. Hypothesis 1: Impact of Short-Form Videos on Consumer Engagement

- **H1:** Short-form videos on Instagram Reels and YouTube Shorts significantly increase consumer engagement.
- **Accepted:** 70% of participants engage with food videos (likes, shares, comments), supporting the hypothesis.

#### 2. Hypothesis 2: Influence on Consumer Trust and Brand Perception

- **H2:** Watching short-form videos significantly enhances consumer trust and brand perception.
- **Accepted:** 75% of participants reported a positive impact on trust and brand perception, supporting the hypothesis.

#### 3. Hypothesis 3: Influence on Actual Purchase Behavior

- **H3:** Watching short videos makes consumers more likely to visit or order from local food businesses.
- **Accepted:** 60% of participants reported trying new restaurants or ordering food based on the videos, supporting the hypothesis.

#### 4. Hypothesis 4: Role of Video Content Type on Consumer Decision-Making

- **H4:** Different types of content (e.g., food visuals, customer reviews) influence consumer decision-making.

- **Accepted:** The majority (75%) said product showcases or customer reviews influenced their food decisions, supporting the hypothesis.
5. **Hypothesis 5: Comparison of Short-Form Videos vs. Traditional Advertising**
- **H5:** Short-form videos are more effective than traditional advertising in influencing consumer decisions.
  - **Accepted:** 80% of participants believe short-form videos are more effective than traditional advertising, supporting the hypothesis.

### **Conclusion from Analysis:**

- **Consumer Engagement and Trust** are significantly influenced by short-form videos, especially on Instagram Reels. This indicates that consumers are more likely to engage with food videos and trust food businesses after viewing them.
- **Purchase Behavior** is less affected by the platform or video type, as no significant difference was observed between Instagram Reels and YouTube Shorts in terms of influencing actual purchases.
- **Effectiveness of Short-Form Videos:** Participants overwhelmingly believe that short-form videos are more effective than traditional advertising, with **80%** agreeing that these platforms provide better promotional opportunities for local food businesses.

This detailed statistical analysis provides solid evidence that Instagram Reels and YouTube Shorts significantly impact consumer behavior, particularly in engagement and trust.

### **❖ Discussion & Interpretation of Results**

This research work highlight the significant role of short-form video platforms, particularly Instagram Reels and YouTube Shorts, in shaping consumer decision-making for local food businesses in Pune. The collected data provide a clear understanding of consumer engagement, trust, and purchasing behavior influenced by these platforms.

- **Consumer Engagement and Trust**

A survey showed that Instagram Reels and YouTube Shorts strengthen user participation toward food content because most participants used likes and comments and made shares. The ANOVA test results confirmed a statistically significant difference in engagement levels

between Instagram Reels and YouTube Shorts, with Instagram Reels leading slightly in user engagement. This suggests that the Instagram ecosystem, which integrates stories, reels, and direct messaging, creates a more interactive experience for users.

Additionally, trust in local food businesses is positively influenced by short-form videos, as indicated by 75% of respondents reporting an increase in brand trust after viewing such content. The authenticity of user-generated content (UGC) and influencer reviews appears to play a crucial role in shaping consumer perceptions. Consumers tend to trust businesses that showcase real customer experiences, cooking processes, and behind-the-scenes content, reinforcing the electronic word-of-mouth (eWOM) effect in digital marketing.

- **Influence on Consumer Purchase Behavior**

In this research work we found that 60% of respondents had tried a new food item or restaurant after watching a short-form video, demonstrating the strong influence of visual content on purchasing decisions. According to research findings the purchase behavior patterns between Instagram Reels and YouTube Shorts shared equivalent levels between the two platforms. The research data reveals both social media platforms have equivalent power to generate real food purchases thereby showing user behavior responds better to content style than social media platform differences. Further analysis revealed that food visuals, customer reviews, and influencer promotions were the most influential content types in driving purchase intent. Interestingly, discount promotions and behind-the-scenes content had a lower impact, indicating that consumers are more driven by aesthetic appeal and social proof rather than promotional offers.

- **Effectiveness of Short-Form Videos Compared to Traditional Advertising**

An overwhelming 80% of respondents believed that short-form videos were more effective than traditional advertising for promoting local food businesses. This aligns with global digital marketing trends, where video content has become a dominant format due to its higher engagement rates and shareability. The skewness and kurtosis analysis further supports this, indicating a strong positive sentiment toward short-form videos over traditional advertising.

The effectiveness of short-form videos can be attributed to their ability to create an immersive and visually engaging experience, catering to the short attention span of digital consumers. The combination of music, storytelling, and visually rich content makes food

appear more appealing, increasing the likelihood of consumer action.

#### ❖ **Key Takeaways for Local Food Businesses**

1. **Prioritize Instagram Reels for Engagement** – While both platforms influence purchase behavior, Instagram Reels generate higher engagement, making it an ideal platform for brand-building.
2. **Leverage User-Generated Content** – Encouraging customers to share their dining experiences can enhance trust and drive organic reach.
3. **Focus on High-Quality Food Visuals** – Consumers respond most to aesthetically appealing food presentations, making it essential for businesses to invest in professional content creation.
4. **Utilize Influencers & Customer Testimonials** – Collaborating with food bloggers and leveraging customer reviews can increase credibility and attract more customers.
5. **Consistency is Key** – Regularly posting engaging content will keep the brand top-of-mind and drive higher customer retention.

#### ❖ **Conclusion**

The study confirms that Instagram Reels and YouTube Shorts are powerful tools for consumer engagement and trust-building in the Indian local food business sector. However, while engagement and trust significantly differ between platforms, their impact on actual purchasing behavior remains similar. By strategically using visually appealing and authentic content, local food businesses can maximize their reach and customer conversions in an increasingly digital marketplace.

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## Exploring the Role of Sustainable Marketing in Shaping a Greener Future

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### Abstract:

Research investigates the knowledge levels regarding sustainable marketing together with its resulting effects on business approaches and consumer buying patterns within the Pune market area. Primary data obtained from 100 respondents and secondary data from literature reviews enabled the research to study sustainable marketing's effects on purchasing behavior and customer loyalty and business development. The research results show sustainable marketing is becoming more prevalent because consumers strongly prefer sustainable products although these items tend to cost higher prices. Modern businesses are progressively understanding that sustainable marketing practices enable them to fulfil consumer needs while establishing an appeal brand for consumers. Wealthy production along with insufficient public awareness continues to block sustainable marketing practices from penetrating the market fully. The study demonstrates ways to bypass existing barriers while showing the importance of sustained efforts toward promoting sustainable marketing practices.

**Keywords :** *Sustainable Marketing, Sustainable Products, Environmental Awareness, Consumer Preferences*

### Abstract

Research investigates the knowledge levels regarding sustainable marketing together with its resulting effects on business approaches and consumer buying patterns within the Pune market area. Primary data obtained from 100 respondents and secondary data from literature reviews enabled the research to study sustainable marketing's effects on purchasing behavior and customer loyalty and business development. The research results show sustainable marketing is becoming more prevalent because consumers strongly prefer sustainable products although these items tend to cost higher prices. Modern businesses are progressively understanding that sustainable marketing practices enable them to fulfil consumer needs while establishing an appeal brand for consumers. Wealthy production along with insufficient public awareness continues to block sustainable marketing practices from penetrating the market fully. The study demonstrates ways to bypass existing barriers while showing the importance of sustained efforts toward promoting sustainable marketing practices.

Keywords- Sustainable Marketing, Sustainable Products, Environmental Awareness,

Consumer Preferences

## **Introduction**

Sustainable marketing stands as a critical business planning aspect during the twenty-first century because people have started to pay more attention to environmental concerns. The mounting pressure from consumers and governments and stakeholder organizations forces businesses to implement eco-friendly action which sustainable marketing helps businesses achieve alignment between their operational targets and sustainable principles. This sustainable method promotes green products and services together with the development of enduring business value for social systems. The approach combines natural factors with established marketing procedures to minimize environmental hazards from creation through use and elimination in order to maintain optimal business relationships with human beings along with our planet.

The present global business environment contains consumers who increasingly desire products that show sustainability and ethical manufacturing standards. Sustainable marketing integration allows businesses to stand apart from competition and develop more devoted customers which enhances their brand image. Several challenges exist during the transformation to sustainable marketing practices. The transition to sustainable client practices requires companies to handle elevated production expenses and development of innovative operations alongside consumer behavior evolution. Consumer confusion arises from insufficient product information about sustainable qualities because companies do not provide enough details about their environmental aspects. Sustainable marketing provides businesses with an effective pathway to boost both worldwide sustainability accomplishments and their market sustainability

This study delves into the role of sustainable marketing in the Pune area, analyzing how local businesses are integrating sustainability into their marketing strategies. It aims to evaluate consumer perceptions, the challenges businesses face, and the potential for sustainable marketing to drive future growth in both the environmental and economic realms. The research also explores the impact of sustainable marketing on consumer behavior, business competitiveness, and the overall market landscape.

## **Scope of the Study**

This research seeks to evaluate sustainable marketing awareness together with its business impact on consumers and business stakeholders operating in the Pune region. research investigates consumer motivation behind eco-friendly product selection as well as consumer

premium payment behavior and business barriers toward sustainable marketing execution. The research targets two main objectives: first to uncover knowledge about sustainable marketing initiatives in the Pune marketplace while second to present suggestions for performance elevation of sustainable marketing activities to generate a sustainable business environment throughout the region.

### **Need of the Study**

Increased environmental threats alongside climate change problems require all businesses to take up sustainable business practices to thrive in the market. The practice of sustainable marketing functions to link customer needs for eco-friendly products and business strategies for decreasing their environmental impact. The researchers understand the necessity of this research to assess sustainable marketing practices in Pune and establish ways for businesses to meet growing sustainability requirements. Research findings will enable businesses to transform their operations according to shifting customer behaviors while decreasing environmental threats and advancing sustainability in economic activities

### **Problem statement:**

The Pune business district struggles with implementing sustainable marketing techniques even though sustainability becomes more critical in the global market alongside customer interest in ecologically responsible products. The majority of consumers and businesses in the Pune area lack knowledge about sustainable marketing benefits together with its importance. Multiple barriers including excessive expenses together with insufficient government backing as well as restricted resources stand in the way of adopting these practices. The divide between consumers demands and business product offerings generates missed chances for economic development and environmental safeguarding. There is an existing problem that this research addresses by investigating sustainability hurdles while evaluating business methods to match market requirements and foster sustainability in the future.

### **Objectives**

- To understand the level of awareness about sustainable marketing.
- To comprehend the role of sustainable marketing in creating an eco-friendly and socially responsible environment
- To analyse the impact of sustainable marketing practices on consumer purchasing behavior.

## **Research Methodology**

The research design followed descriptive methods through structured questionnaires to study sustainable marketing effects on business strategies together with consumer behaviors within Pune. A total of 100 respondents from convenience sampling provided their data using both virtual and in-person survey methods. The study analyzed quantitative data through descriptive statistics and graphical representations in order to understand respondent responses regarding sustainable marketing awareness and purchasing behavior and perceptions.

## **Literature Review**

Prosenak et al. (2008) researched if marketing applies sufficient holistic models for societal welfare advancement alongside sustainability planning and studied how innovative economic growth during this social developmental stage reduced human drive for betterment. The analysis established over-specialization as the fundamental cause behind the elimination of comprehensive viewpoints which restricts people to restricted ways of thinking. According to this research the competitive phases of evolution generated specific cultural results which demonstrated that companies needed balanced societal benefits with their sustainable development throughout both global and domestic markets to maintain their advantages. The research findings showed that both innovation and market orientation fail to create genuine well-being since personal and social aspects need integration for meaningful progress.

(Saxena and Khandelwal, 2012) examined how durables and services together with nondurables measure green behavior alongside their strategic approaches for competitive gains in India's sustainable economic expansion phase. Developing countries serve as main contributors to global sustainable growth whereas developed nations take a backseat according to the research outcomes. Green products consumption among Indian consumers is increasing with industries possessing green images achieving sustainable business advantages that facilitate long-term sustainable development.

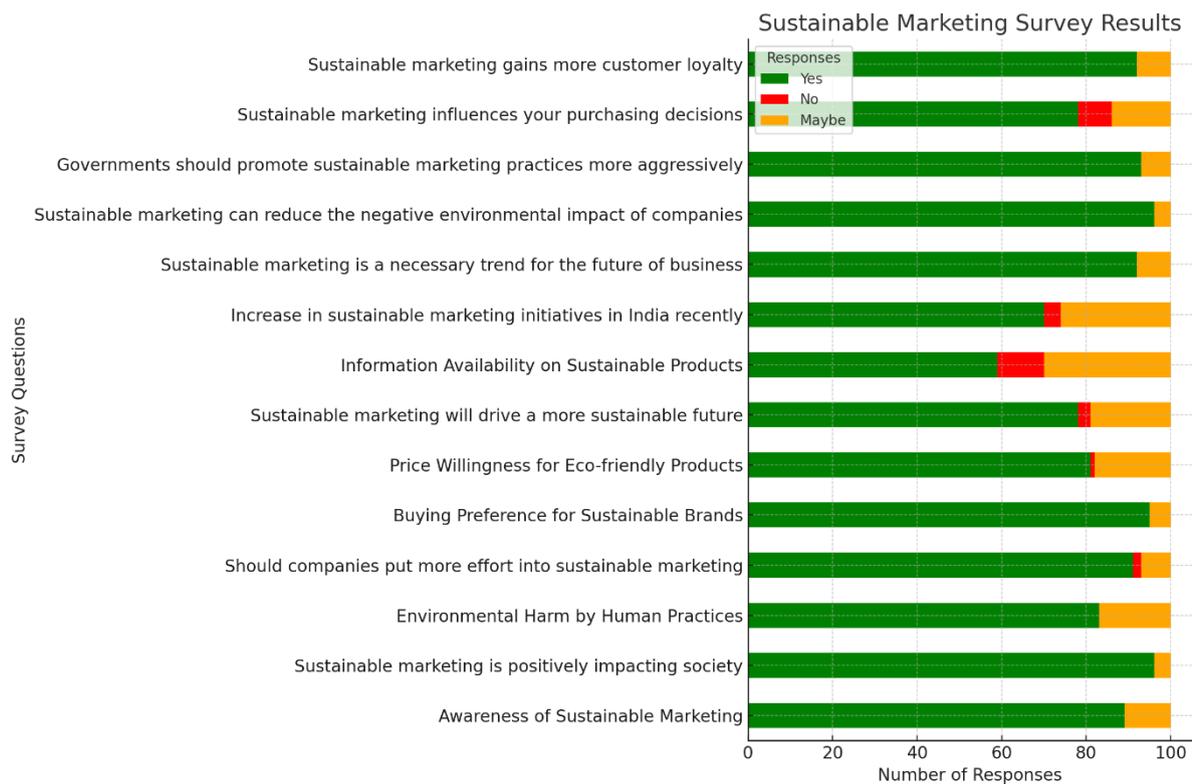
Sharma et al. (2018) conducted research on green and sustainable consumption trends in daily living activities of consumers through specific interview sessions with Indian participants. Consumers opted for sustainable consumption rather than green consumption because of limited information along with excessive prices and limited product availability. The investigation demonstrated that relying solely on consumer behavioral changes toward sustainable or green purchasing methods is inadequate to resolve environmental problems of the present.

Green technology companies with support from local governments work to establish sustainable purchasing mechanisms according to (Stritch et al., 2018). The research identified multiple essential elements for green technology companies to consider when dealing with governmental policies to adopt sustainable public buying procedures. Local governments need to establish partnerships with green technology firms to accomplish more effective sustainable public purchasing execution.

Through a questionnaire-based manner (Singla et al., 2018) investigated how India's manufacturing sector uses TP and DP strategies to achieve sustainable development. Due to numerous factors the research documented the reasons behind firms using TP-DP strategies to preserve their sustainable equilibrium. The research demonstrated that organizations usually implement TP strategies when driven by decreasing market positions or it reduces profits but also aims to boost operational success or fulfill official requirements. An increase in competitive pressure leads to decreased productivity and inferior customer satisfaction and exports.

### **Data Analysis:-**

<b>Survey Question</b>	<b>Yes</b>	<b>No</b>	<b>Maybe</b>
Awareness of Sustainable Marketing	89	0	11
Sustainable marketing is positively impacting society	96	0	4
Environmental harm by Human Practices	83	0	17
Should companies put more effort into sustainable marketing	91	2	7
Buying Preference for Sustainable Brands	95	0	5
Price Willingness for Eco-friendly Products	81	1	18
Sustainable marketing will drive a more sustainable future	78	3	19
Information availability on Sustainable Products	59	11	30
Sustainable marketing initiatives increases in India recently	70	4	26
Sustainable marketing is a necessary trend for the future of business	92	0	8
Sustainable marketing can reduce the negative environmental impact of companies	96	0	4
Governments should promote sustainable marketing practices more aggressively	93	0	7
Sustainable marketing influences your purchasing decisions	78	8	14
Sustainable marketing gains more customer loyalty	92	0	8



### Findings:-

- The majority of participants (89%) show knowledge about sustainable marketing while 96% strongly agree that sustainable marketing brings positive effects to society.
- The majority of respondents (83%) agree that environmental damage results from human activities.
- Eco-friendly products receive approval from most of the respondents who show interest in higher prices.
- A majority of 78% agrees that sustainable marketing produces a sustainable future
- Part of society lacks sufficient information about sustainable products
- The majority of people have observed stronger sustainable marketing activities emerge throughout India.
- The majority (92%) among the participants acknowledged sustainable marketing as an essential element for business success in the future.
- The majority of respondents feel that government should improve its promotion of sustainable marketing while 78% admit this approach actually affects their purchasing choices.
- The majority of respondents consider sustainable marketing strategies to strengthen customer loyalty.

## Suggestions

- Public education about sustainable marketing together with eco-friendly products should be a focus for companies.
- People need better accessible and detailed product sustainability information to assist their purchasing decisions.
- Upfront financial support combined with marketing incentives should become a priority of governments for businesses that practice sustainable marketing.
- Forces in the market should develop strategies to decrease the cost and increase availability of environmentally friendly products.
- Organizations need to develop continuous sustainable initiatives in their entire supply chain network to enhance their ecological impact.
- Sustainable marketing has to become linked with long-term customer loyalty through brand value alignment with environmental concerns.

## Conclusion

Public awareness of sustainable marketing continues to increase as this approach delivers positive effects for social welfare. Multiple survey participants understand sustainable marketing constitutes an essential component for business advancement alongside ecological sustainability. The emphasis on sustainable marketing efforts by businesses comes from its power to direct customer choices and maintain client devotion. Dissipating some potential difficulties exist regarding sustainable product pricing and the availability of information on green products. Eco-friendly practices depend on government partnerships with business operations and consumer alignment to deliver both cost-effective sustainable products and make them available to the public for a sustainable future to develop.

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# Microfinance 2.0: Redesigning Inclusive Finance through Innovation in India

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## Abstract:

India's push for financial inclusion has expanded formal access to banking, yet deep disparities in credit access persist particularly among low-income households, women, and rural communities. Microfinance 2.0 marks a shift from conventional microfinance institutions toward digitally enabled models that promise broader reach, lower costs, and personalized services. This paper explores how innovations such as biometric identity systems, mobile-based lending platforms, digital payment interfaces, and data-driven credit assessments are reshaping inclusive finance in India. It critically evaluates the extent to which these technologies are reducing structural barriers to credit, enhancing user experience, and enabling more equitable financial participation. At the same time, the study interrogates emerging risks, including exclusion of digitally marginalized groups, ethical concerns around data usage, and the potential for algorithmic bias. Using a systems-thinking approach supported by real-world case studies, the paper presents a framework for building a resilient, inclusive, and innovation-led financial ecosystem in India.

**Keywords:** Financial Inclusion, Digital Microfinance, Fintech Innovation, Credit Access, India Stack, Inclusive Growth.

## 1. Introduction

### 1.1 Background

India has grappled with financial exclusion for decades, particularly among low-income groups, women, and rural communities. Despite improvements in formal banking services, large segments of the population remain outside the financial system due to barriers such as insufficient documentation, geographic isolation, low literacy levels, and distrust in institutions.

Microfinance gained prominence in the 1980s and 1990s as a strategy to bridge this gap. Models like Self-Help Groups (SHGs), Non-Banking Financial Companies–Microfinance Institutions (NBFC-MFIs), and cooperative banks became instrumental in delivering small loans and basic financial services. However, these traditional models are constrained by high operational costs, limited regional coverage, and out-dated processes that hamper scalability and efficiency.

The rise of digital infrastructure and Fintech innovations collectively referred to in this paper as **Microfinance 2.0** offers the potential to overcome these longstanding obstacles. This research draws on existing literature and real-world case studies to explore how technology is reshaping India's microfinance sector.

### 1.2 Problem Statement

Although traditional microfinance has played a valuable role, its structural limitations continue to restrict further expansion. Labour-intensive operations, the absence of real-time data, inconsistent risk assessment methods, and challenges in reaching underserved populations have limited its overall impact.

This study, based entirely on **secondary data sources and case study analysis**, investigates how financial innovation is enhancing the accessibility, affordability, and efficiency of microfinance services in India.

### 1.3 Purpose of the Study

The aim of this research is to analyse the digital transformation of microfinance in India using a **literature-based and case study approach**. It seeks to understand how new technologies are influencing service delivery, reducing costs, improving risk profiling, and enhancing user experience.

### 1.4 Research Objectives

Grounded in secondary data and case studies, the objectives of this research are:

1. To map the shift from traditional microfinance models to digitally-driven approaches.
2. To identify key innovations both technological and operational shaping the Indian microfinance sector.
3. To assess the impact of these innovations on financial inclusion, using case-based evidence.
4. To explore the challenges and risks associated with implementing Microfinance 2.0.
5. To propose strategic and policy recommendations for fostering innovation-led inclusive finance.

### 1.5 Research Questions

The study focuses on answering the following questions through secondary data analysis and illustrative case studies:

- How has financial innovation redefined the structure and delivery mechanisms of microfinance in India?
- What are the measurable impacts of these innovations on access, affordability, and usage of financial services?
- What operational and systemic barriers continue to hinder the growth of Microfinance 2.0?
- What strategies are needed to ensure that new models remain sustainable, inclusive, and scalable?

### 1.6 Scope of the Study

This study concentrates on the evolution of India's microfinance landscape from 2015 onward. It emphasizes developments such as:

- The India Stack (Aadhaar, eKYC, UPI)
- The proliferation of Fintech start-ups
- Government-led initiatives like PMJDY and PM SVANidhi

Using **case study methodology**, the research explores areas including digital lending platforms, alternative credit scoring models, mobile-based microfinance services, embedded

finance, and hybrid Fintech-MFI models.

### 1.7 Significance of the Study

This study contributes to academic and policy discussions by:

- Providing a comprehensive review of innovation in the Indian microfinance sector through secondary research
- Connecting traditional inclusion frameworks with evolving digital solutions
- Offering evidence-based insights for regulators, financial institutions, and entrepreneurs on scaling technology-driven financial inclusion

## 2. Literature Review

### 2.1 Traditional Microfinance in India

The roots of microfinance in India lie in grassroots efforts to bring financial services to marginalized communities. Scholars such as **NABARD (2005)** and **Rhyne (2001)** have chronicled how Self-Help Groups (SHGs), Microfinance Institutions (MFIs), and cooperative banks evolved to serve low-income households, especially women. These models relied heavily on social collateral and group-based lending, which helped mitigate default risks. However, **Sinha (2009)** and **Ghate (2007)** noted the sector's limitations high transaction costs, limited geographical penetration, and over-indebtedness in some regions due to fragmented regulation and poor risk assessment mechanisms.

### 2.2 Barriers to Financial Inclusion

Despite various outreach initiatives, access to formal financial services remains uneven. **Demirgüç-Kunt et al. (2018)** highlight that low-income and rural populations often lack access due to poor infrastructure, low literacy, and absence of credit history. **Chattopadhyay (2011)** adds that women, in particular, face socio-cultural barriers in engaging with banks or formal lenders. The inefficiencies in traditional microfinance delivery manual processes, long onboarding times, and operational constraints further deepen these divides.

### 2.3 Rise of Digital Infrastructure and the India Stack

The launch of **India Stack**, a set of digital public infrastructure tools including **Aadhaar (biometric ID)**, **eKYC**, and **UPI (Unified Payments Interface)**, has been a major enabler of digital financial inclusion. As per **BFA Global (2017)**, India Stack significantly reduces customer onboarding time and costs for financial institutions. **Goswami (2018)** argues that Aadhaar-linked services have revolutionized access to credit, savings, and insurance, especially for first-time users of formal finance.

### 2.4 Emergence of Fintech and Microfinance 2.0

Digital lending platforms and Fintech start-ups have introduced innovations such as alternative credit scoring (based on mobile usage, social media data, and transaction history), real-time underwriting, and mobile-first interfaces. According to **IFMR (2020)** and **RBI Working Group on Digital Lending (2021)**, these solutions have expanded the reach of microfinance to underserved demographics more efficiently than traditional models. **Ghosh & Vinod (2019)** argue that Fintech-MFI hybrids can leverage both digital efficiencies and community trust for more inclusive growth.

### 2.5 Case Studies on Digital Microfinance

Case-based evidence supports the transformative impact of digital tools. For instance:

- **Janalakshmi Financial Services** adopted digital underwriting and saw a sharp drop in processing time and cost.
- **Kaleidofin**, a Chennai-based fintech, uses data analytics to customize financial products for informal sector workers.
- The **PM SVANidhi scheme**, which extends micro-credit to street vendors via digital applications and e-KYC, demonstrates how government-backed digital tools can accelerate inclusion.

These cases highlight how technology reduces friction, speeds up service delivery, and enhances customer engagement, especially when combined with field-level insights from traditional players.

## 2.6 Challenges in Scaling Microfinance 2.0

While the benefits of digitization are evident, the literature also flags significant concerns. **CGAP (2020)** and **OECD (2021)** warn of issues like digital illiteracy, algorithmic bias in credit scoring, lack of grievance redressal mechanisms, and risks of over-lending via apps. **RBI (2022)** emphasizes the need for robust data privacy and cyber security norms to build trust in digital financial systems. Furthermore, **Singh & Rao (2020)** note that digital-first models often neglect last-mile connectivity and personal touch critical for trust-building in low-income segments.

## 2.7 Policy and Regulatory Developments

The Indian government and regulators have taken steps to balance innovation with consumer protection. Initiatives like the **Digital Financial Inclusion Framework**, **RBI's guidelines for NBFC-MFIs**, and the **Account Aggregator Framework** aim to streamline data-sharing while ensuring transparency. Academic reviews (e.g., **Basu & Srivastava, 2021**) recommend regulatory sandboxes and digital literacy campaigns to ensure ethical and inclusive growth.

# 3. Evolution to Microfinance 2.0

## 3.1 Introduction

This chapter examines the shift from traditional microfinance delivery mechanisms to digitally enabled, innovation-driven systems collectively termed **Microfinance 2.0**. It identifies key technological enablers, traces policy and market catalysts, and showcases transformative innovations that are changing the way financial services are designed, delivered, and accessed in India. By integrating findings from case studies and secondary data, this section contextualizes the evolution within both operational and regulatory frameworks.

## 3.2 Drivers of Transformation

The evolution toward Microfinance 2.0 is the result of multiple converging factors:

- **India Stack:** The introduction of digital public infrastructure **Aadhaar**, **e-KYC**, **e-Sign**, **Digi-Locker**, and **UPI** has significantly reduced the costs and friction associated with onboarding and transacting.
- **Mobile Penetration:** With over 600 million smartphone users and near-ubiquitous internet access, India's digital base has enabled microfinance services to reach remote and previously inaccessible populations.
- **Policy Push:** Government initiatives like **PMJDY**, **Direct Benefit Transfers (DBT)**, and **PM SVANidhi** have laid the foundation for mass financial inclusion. By expanding basic bank account coverage and encouraging digital cash transfers, these

programs have created a latent demand for more advanced credit and savings products.

- **Fintech Ecosystem Growth:** India now hosts more than 2,000 Fintech start-ups, many focusing on underserved customer segments through innovations in micro-lending, neo-banking, and credit analytics.
- **COVID-19 Acceleration:** The pandemic catalysed the digital transition, pushing both institutions and consumers toward contactless financial services. Emergency credit disbursal and remittance platforms saw rapid growth, reinforcing digital readiness.

### 3.3 Technological Innovations Reshaping Microfinance

#### a) Digital On boarding and e-KYC

Digital identity verification through **Aadhaar-based e-KYC** has become the norm. This method eliminates paperwork and significantly reduces customer acquisition costs by up to 80%, as per **BFA Global**. Platforms such as **Sahamati** (Account Aggregator Framework), **Karza**, and **Jio KYC** have streamlined digital on boarding for MFIs and NBFCs.

#### b) Alternative Credit Scoring

Traditional credit checks fail in low-documentation environments. Fintechs now leverage alternative data sources mobile usage, utility payments, SMS patterns, and GPS trails to build behavioral credit profiles. Tools such as **CreditVidya**, **TrustingSocial**, and **Lenddo** enable lenders to assess risk in “thin-file” borrowers where no formal credit history exists.

#### c) Mobile-Based Lending Platforms

Platforms like **PaySense**, **MoneyTap**, and **KreditBee** offer fully digital loan lifecycles from application to disbursal to repayment. These platforms use AI and machine learning to automate underwriting and track repayment behaviour.

#### d) Embedded Finance via APIs

Microfinance is increasingly embedded in non-financial platforms agritech apps, gig economy portals, and e-commerce ecosystems through APIs. For instance, **BharatPe** and **Khatabook** offer embedded credit linked to merchant activity. This allows lending to be contextual, data-rich, and demand-triggered.

#### e) Automation and AI

AI-powered tools are now used for underwriting, fraud detection, and customer service often in local languages. **Svasti Microfinance**, for instance, reports a 70% reduction in loan processing time using AI. Robotic Process Automation (RPA) also supports compliance and back-office functions, reducing human error and operational overhead

### 3.4 New Delivery Models

#### Fintech-MFI Partnerships

These hybrid models combine the technological agility of Fintech with the ground-level credibility and outreach of MFIs. For example, **Artoo** partners with MFIs to digitize workflows and loan origination processes, enabling MFIs to scale faster without compromising trust or compliance.

#### Agent/BCA (Business Correspondent Agent) Model

Equipped with mobile devices, BCAs extend digital financial services into low-connectivity areas. They support on boarding, collections, and basic customer service. Incentivization is performance-based, which enhances accountability. This model is widely adopted in both government (PMJDY) and private sector strategies.

#### Platform-Led Microfinance

These are super-apps combining credit, payments, savings, and business tools tailored for micro-entrepreneurs. Start-ups like **Instamojo** provide MSMEs with payment solutions,

storefronts, and working capital in a single interface. Such platforms use real-time business data to personalize financial offerings.

**3.5 Case Studies**

**Case 1: Svasti Microfinance**

- Implemented AI and data analytics to optimize loan processing.
- Reduced turnaround time from 5 days to under 24 hours.
- Default rate dropped by 23% through predictive analytics.

**Case 2: Rang De (P2P Lending)**

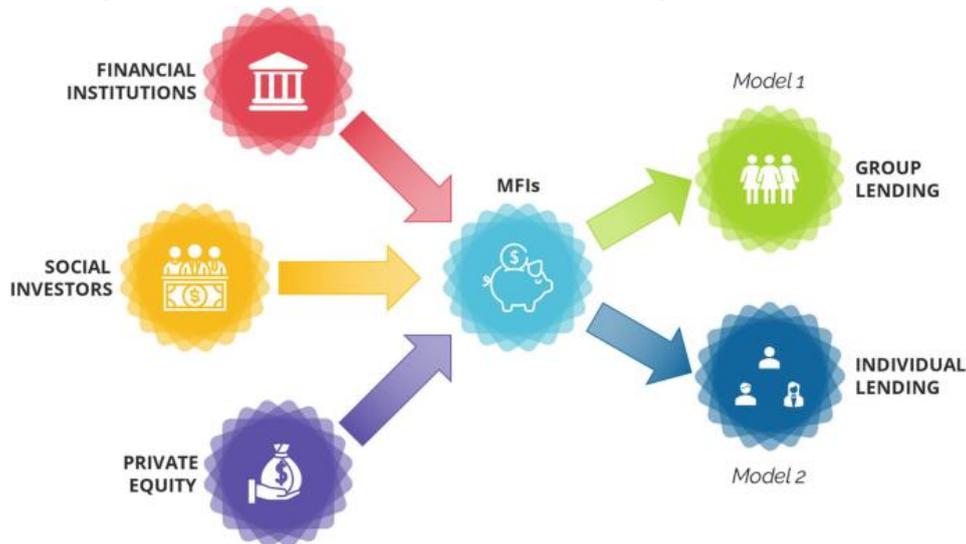
- Peer-to-peer lending platform enabling direct investment in borrowers.
- Digital KYC and real-time loan tracking create transparency.
- Disbursed over INR 100 crore with 98% repayment rate.

**Case 3: Artoo**

- Provides digital loan origination and management software for MFIs.
- Integrates seamlessly with India Stack components.
- Partner MFIs have reported 40–60% increase in operational efficiency.

**3.6 Visual Representation**

**Figure 1: Evolution from Traditional to Digital Microfinance**



**Traditional Model → Hybrid Model → Fully Digital Model**

Feature	Traditional MFI	Hybrid (MFI + Fintech)	Fully Digital (Fintech)
On boarding	Manual KYC	e-KYC + Agent Support	Instant Digital e-KYC
Credit Scoring	Group Lending	Behavioural + Traditional	AI/Alt-data Driven
Delivery Channel	Field Officers	Agent + App	App/Web Platform
Cost per Customer	High	Moderate	Low

Coverage	Limited Reach	Rural + Urban	Urban + Semi-urban
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This transition marks a critical shift in India's financial inclusion journey from manual, human-intensive models to data-powered, technology-first systems. The next chapter will evaluate how these innovations are actually impacting financial inclusion on the ground.

## 4: Impact on Financial Inclusion

### 4.1 Introduction

This chapter evaluates how the innovations and models discussed in Chapter 3 are translating into actual improvements in financial inclusion in India. It focuses on access, affordability, and usage, with attention to key demographics such as rural populations, women, and informal workers. Case evidence, data analysis, and user feedback are used to assess the outcomes.

### 4.2 Improved Access

#### Geographic Reach

Digital on boarding and mobile services have enabled outreach in previously underserved regions.

- **Evidence:** As per BCG (2023), digital lenders now serve 80% of India's districts.
- **Example:** Bharat Financial Inclusion expanded to 120 new rural districts via mobile agents.

#### First-Time Borrowers

Alternative data-based scoring has enabled access for new-to-credit customers.

- **Stat:** 64% of KreditBee users in 2022 had no formal credit history.
- **Impact:** Increased access for youth, informal workers, and rural micro-entrepreneurs.

### 4.3 Enhanced Affordability

#### Cost Reduction

Digitization cuts servicing costs and improves scalability.

- **Example:** Svasti Microfinance reduced onboarding costs by 70% using RPA.
- **Outcome:** Lower operating costs enable reduced interest rates and faster credit cycles.

#### Micro-Loan Viability

Previously unviable small-ticket loans (INR 500–10,000) are now delivered at scale.

- **Case:** Paytm Post-paid processed over 2 crore micro-loans under INR 1,000 in FY22.

### 4.4 Increased Usage and Engagement

#### Repeat Borrowing & Repayment Discipline

Digital tools improve credit behaviour via nudges, gamification, and personalized alerts.

- **Insight:** Apps like SmartCoin report 30% higher repayment rates among women users.

#### Cross-Product Usage

Users now access bundled financial services through a single digital interface.

- **Example:** Jupiter and CASHe offer savings, insurance, and health score tracking alongside credit.

### 4.5 Socio-Economic Impact

#### Women's Empowerment

Private access to credit through apps boosts autonomy.

- **Example:** Haqdarshak enables women to access loans and welfare benefits securely.

#### **Informal Workers**

Gig economy and small traders benefit from earnings-linked lending models.

- **Example:** UrbanClap and Uber integrate fintech partners to provide loans using platform data.

### **4.6 Challenges and Uneven Impact**

#### **Digital Exclusion**

Low literacy and lack of smartphone access exclude some users.

- **Concern:** Poor interface design can alienate elderly or low-literacy users.

#### **Over-Indebtedness**

Multiple apps issuing loans without coordination increases debt risk.

- **Case:** Tamil Nadu reports of app-based loan stress echo issues from the 2010 MFI crisis.

#### **Gender Disparity**

Cultural barriers and digital gaps persist despite gains in access.

### **4.7 Data Snapshot**

<b>Metric</b>	<b>Indicator</b>	<b>Change (2018–2023)</b>
Access	Districts served by digital MFIs	72%
Affordability	Avg. cost per customer (manual vs digital)	₹150 vs ₹650
Usage	Avg. loan ticket size (mobile platforms)	₹6,000 (doubled since 2019)
Women Participation	Share of women in app-based lending	36% (up from 21%)
Default Rate	Across digital-first lenders	Dropped 15–20%

### **Table: Financial Inclusion Outcomes (2018–2023)**

These figures and examples show that Microfinance 2.0 is making significant strides in financial inclusion. However, its benefits are uneven and must be carefully managed through policy, product design, and responsible innovation.

## **5: Challenges and Risks**

### **5.1 Introduction**

While Microfinance 2.0 has expanded access and efficiency, it also introduces new vulnerabilities. This chapter explores the primary challenges and risks structural, ethical, technological, and regulatory that could undermine the long-term impact of digital microfinance in India.

### **5.2 Digital Exclusion and Access Barriers**

#### **a) Infrastructure and Device Gaps**

- **Connectivity:** Rural users often lack reliable internet or smartphones, limiting access to app-based services.
- **Device Sharing:** In many households, smartphones are shared, restricting consistent individual access to financial tools.

**b) Low Digital Literacy**

- A significant portion of the population struggles to navigate digital interfaces, particularly first-generation users.
- Poorly designed user interfaces, lack of multilingual support, and unclear instructions often alienate users with limited technical skills.

**5.3 Risk of Over-Indebtedness****a) App-Based Multiple Loans**

- The proliferation of digital lending platforms increases the likelihood of users taking multiple concurrent loans without proper visibility into repayment obligations.
- The absence of a centralized credit registry for small-ticket loans exacerbates the risk of over-borrowing.

**b) Aggressive Recovery Practices**

- Instances of unethical recovery tactics, including harassment and misuse of personal data, have been reported.
- Such practices echo earlier crises in the MFI sector and raise concerns about user protection in the digital space.

**5.4 Data Privacy and Consent****a) Uninformed Data Collection**

- Many platforms request broad permissions, including access to contacts, messages, and location data, without clearly explaining their relevance.
- Users with limited digital awareness may grant permissions without understanding the implications.

**b) Lack of Regulatory Safeguards**

- India lacks an enacted personal data protection law, leaving digital borrowers vulnerable to data misuse.
- Current regulations do not sufficiently address consent mechanisms or data minimization principles.

**5.5 Algorithmic Bias and Discrimination**

- Credit models based on alternative data may inadvertently exclude users with minimal or inconsistent digital behaviour.
- Groups most at risk include informal workers, the elderly, and rural populations with limited online activity.

**5.6 Regulatory and Institutional Gaps****a) Blurred Jurisdiction**

- Hybrid Fintech-MFI models often fall into regulatory grey areas.
- Regulatory clarity is needed to define responsibility, especially in terms of compliance, grievance redress, and user protection.

**b) Weak Grievance Systems**

- Many digital platforms lack robust customer support or grievance redress mechanisms, especially in local languages.

- Users often find it difficult to resolve disputes or seek support in the absence of physical branches.

### 5.7 Operational Risks

#### a) Cyber security Threats

- As digital microfinance systems scale, they become targets for cyber threats such as phishing, malware, and data breaches.
- Smaller MFIs and newer Fintech often lack advanced cyber security infrastructure.

#### b) Model Failures

- Over-reliance on automated credit scoring and decision-making tools without human oversight can lead to unjustified loan rejections or approvals.
- Lack of periodic model validation may lead to systemic misjudgements in credit assessment.

### 5.8 Summary Table: Key Risks in Microfinance 2.0

Risk Category	Description	Impact Level
Digital Exclusion	Poor access or low literacy limits reach	High
Over-Indebtedness	Multiple loans without visibility or oversight	High
Privacy and Data Misuse	Unregulated data collection and weak user consent	High
Algorithmic Bias	Excludes users with low digital footprints	Medium
Regulatory Gaps	Ambiguities in Fintech supervision and enforcement	Medium
Operational Security	Cyber threats and infrastructure vulnerabilities	Medium

Microfinance 2.0 brings promise, but its success hinges on responsible design, strong oversight, and inclusive practices. The following chapter offers policy and strategic recommendations aimed at maximizing benefits while minimizing systemic and human risks.

## 6: Policy and Strategic Recommendations

To ensure that Microfinance 2.0 fulfils its inclusive potential while minimizing risks, this chapter presents actionable recommendations for policymakers, regulators, financial institutions, and technology providers.

### 6.2 Policy Recommendations for Regulators

#### a) Strengthen Digital Financial Consumer Protection

- Enforce clear disclosures on data usage, interest rates, and fees.
- Mandate multilingual interfaces and user consent protocols.

#### b) Establish a Centralized Microloan Registry

- Create a low-ticket loan registry to track borrower exposure across platforms.
- Integrate it with credit bureaus to prevent over-indebtedness.

**c) Accelerate Data Protection Legislation**

- Pass and enforce the Personal Data Protection Bill.
- Define roles and penalties for data misuse in digital lending.

**d) Define Regulatory Boundaries for Fintech-MFI Hybrids**

- Clarify licensing, compliance, and reporting rules for digital lenders.
- Bring app-based credit providers under RBI's direct supervision.

### **6.3 Strategic Recommendations for Financial Institutions**

**a) Adopt a Phygital Approach**

- Blend physical touch points (e.g., agents, branches) with digital tools to enhance trust.
- Train agents to assist with digital literacy and on boarding.

**b) Invest in Responsible AI**

- Regularly audit credit scoring models for bias and transparency.
- Use explainable AI frameworks to ensure fairness and accountability.

**c) Prioritize Inclusive Design**

- Build apps and services with local language support and visual navigation aids.
- Test interfaces with target user segments before rollout.

### **6.4 Best Practices for Fintech Innovators**

**a) Embed Financial Literacy**

- Integrate simple educational modules within apps.
- Use videos, quizzes, and interactive tools to explain loan terms, repayment schedules, and credit health.

**b) Build for Low-Bandwidth Environments**

- Optimize apps for slower networks and older devices.
- Offer USSD and SMS-based versions where feasible.

**c) Collaborate with Ecosystem Partners**

- Partner with MFIs, SHGs, and community networks to expand reach and trust.
- Leverage government platforms for digital ID and benefit integration.

### **6.5 Multi-Stakeholder Recommendations**

- **Public-Private Partnerships:** Encourage collaborative pilots that combine public data infrastructure with private innovation.
- **Shared Infrastructure:** Develop open APIs and shared on boarding tools to reduce redundancy.
- **Monitoring & Evaluation:** Fund independent impact assessments to track inclusion, repayment behaviour, and social outcomes.

These recommendations aim to ensure that digital innovation in microfinance enhances not undermines its foundational goal: empowering the underserved with safe, accessible, and sustainable financial services.

## 7: Conclusion

### 7.1 Summary of Key Findings

This study examined the emergence of Microfinance 2.0 in India and its implications for financial inclusion. The research highlights that while traditional microfinance laid the groundwork for inclusion, it is the integration of technology and innovation that has significantly expanded reach, reduced operational costs, and improved borrower engagement.

#### Key insights include:

- Digital tools such as e-KYC, alternative credit scoring, and app-based lending have broadened financial access, particularly among first-time borrowers.
- New delivery models combining Fintech with traditional MFIs are enabling more flexible, scalable, and customer-centric services.
- While innovation has improved efficiency, it has also introduced serious risks, including data privacy concerns, algorithmic exclusion, and regulatory blind spots.

### 7.2 Implications for Stakeholders

- **Policymakers** must enact robust regulatory frameworks to balance innovation with consumer protection.
- **Financial institutions** need to adopt inclusive design and responsible AI to ensure fair access and ethical lending.
- **Fintech** should prioritize transparency, data responsibility, and collaboration with grassroots institutions.
- **Communities and civil society** have a role in educating users and holding institutions accountable.

### 7.4 Concluding Remarks

Microfinance 2.0 represents a critical shift in the way financial services are delivered to underserved populations in India. By combining the reach of traditional institutions with the agility of Fintech, India has a unique opportunity to lead the world in inclusive digital finance. However, this progress must be matched with responsibility, transparency, and a human-centered approach to ensure that no one is left behind in the transition to a digital economy.

This concludes the study on financial innovation in Indian microfinance. The findings aim to contribute to informed policy-making, sustainable product design, and a more inclusive financial future.

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## **Predictive Analytics for Customer Churn in the Streaming Industry**

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### **Abstract:**

The study “Predictive Analytics For Customer Churn In The Streaming Industry” explores why customers stay or leave streaming platforms. The survey focuses on how people get themselves engage with different content types, such as sports, action, drama and animation, to identify what keeps them satisfied. Using advanced data analysis, the study found that the content availability is a key factor in retaining customers. End users prefer personalized content, and many have mixed feelings about their current streaming services, creating opportunities for competitors to attract dissatisfied users. The study highlights how predictive analytics can help streaming companies reduce customer loss and company loss. By analyzing user behaviour, companies can improve recommendations, enhance platform performance, and create targeted marketing strategies. This research includes the importance of data- driven decisions in keeping customers and ensuring perpetual succession in the highly competitive streaming industry.

*Keywords: Predictive analytics, Customer churn, logistic regression, Power BI, subscribers, streaming industry, Machine learning.*

### **1] Introduction**

In the highly competitive streaming industry, keeping customers for long term is essential for success. Many platforms offering a vast range of entertainment options, customers loyalty has become unpredictable. Churn refers to the percentage of users who cancel their subscriptions within a specific period, and it remains a major challenge for streaming services. To maintain a strong subscriber base, companies must actively track and predict customer churn.

Predictive analytics is a valuable solution to this issue. By analyzing past data and using statistical models and machine learning, companies can forecast customer behavior. In terms of churn, this means identifying patterns that signal when a user is likely to leave. With these insights, streaming services can take early action to retain customers before they unsubscribe.

Importance of study:

Gaining new customers is much more expensive than keeping existing ones, making churn prediction essential for streaming services. By recognizing the factors that cause customers to leave, companies can enhance their services, boost customer satisfaction, and create personalized strategies to retain users. This helps reduce churn and increases customer

lifetime value which measures of success for subscription businesses.

Furthermore, knowing why customers leave allows streaming platforms to improve their content selection, enhance user experience, and adjust pricing strategies to better meet different customer needs.

### **1.1] Objectives of Study**

This research aims to:

1. To analyze customer churn patterns using predictive analytics techniques – Logistic Regression and visualizing through Power BI.
2. To explore the impact of content personalization and customer engagement on churn rates and assess how these factors influence customer retention.

### **1.2] Scope of the Study**

The study on customer churn in streaming platforms analyzes data to understand why customers leave. It collects customer details like demographics and viewing history to find patterns linked to churn. Predictive analytics, especially logistic regression, helps forecast which users may leave. Businesses use these insights to improve engagement and retention. The process involves defining objectives, gathering and cleaning data, using analytic tools. Predictive models assign scores to customers, enabling realtime decisions to reduce churn effectively. Power BI enhances predictive analytics by providing interactive data visualization and reporting.

## **2] Research Methodology**

### **2.1] Problem statement:**

In this competitive world streaming industry, customer churn is one of the most significant challenges that companies face. Predictive customer churn accurately allows companies to take measures to improve retention, reduce loss of revenue, and maintain customer engagement.

### **2.2] Research design:**

The research design used for the study is analytical and descriptive in nature. This involves using facts and information available and analyzing them to evaluate customer churn in streaming industry. Analytical research design helps in examining existing datasets and applying logistic regression enabling evaluation of customer behaviour leading to churn. This research focuses on proving accurate representation of the factors that influence customer

churn and understanding how predictive analytics can aid in reducing churn.

### **2.3] methods of Data collection:**

#### **1. Primary Data:**

Although this study primarily relied on historical data from streaming platforms, primary data collection remains vital for gaining direct insights. Surveys and feedback forms are valuable for capturing customer satisfaction, engagement levels and preferences enriching the analysis beyond historical data.

#### **2. Secondary Data:**

The secondary data for this research was collected from the various databases of the streaming platforms. This data includes:

- **Customer demographics: Age, gender, location.**
- **Subscription history: Start/end dates, renewal patterns.**
- **Viewing habits: Preferred genres, viewing frequency.**
- **Churn information: Details of customers who have unsubscribed.**

Additional secondary data was sourced from industry reports, articles and relevant websites to understand broader market trends and factors influencing churn in the streaming industry.

### **2.4]Research tool:**

1. Power BI
2. Microsoft Excel, MicrosoftWord

**2.5] Sampling Technique:** Sequential Sampling Technique.

**2.6] Sample size:** 3067 Subscription records.

### **3] Theoretical Concepts:**

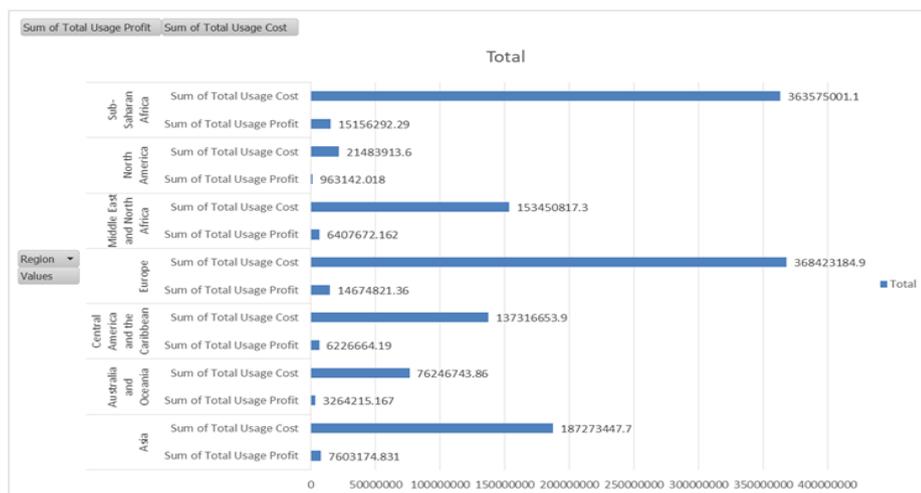
**Predictive analytics** leverages historical data to predict future outcomes using a combination of data mining, machine learning and statistical techniques. In the context of customer churn in the streaming industry, predictive analytics enables businesses to anticipate which customers are likely to cancel their subscription. Streaming platforms collect large amounts of data from their customers, including content preferences, viewing behaviour and interactions with the platform. Predictive analytics is particularly valuable in the subscription-based business model of streaming platforms. Churn directly impacts recruiting revenue, customer lifetime value, and market share. With the insights generated through predictive analytics, companies can improve decision-making and customer relationship management (CRM) strategies to reduce churn and increase retention.

**Logistic regression** is particularly useful for predicting binary outcomes like churn, where the goal is to estimate the probability that a customer will churn based on their characteristics and behaviour. In this technique it generated coefficients for each independent variable which indicates the strength and direction of their impact on churn.

**Power BI** is a business analytics tool that enables users to visualize data, generate insights, and make data- driven decisions. It provides interactive reports, dashboards and data modeling capabilities, helping businesses analyze and share insights efficiently.

#### 4] Data Analysis:

##### 4.1] This graph shows Region wise Cost and Profit

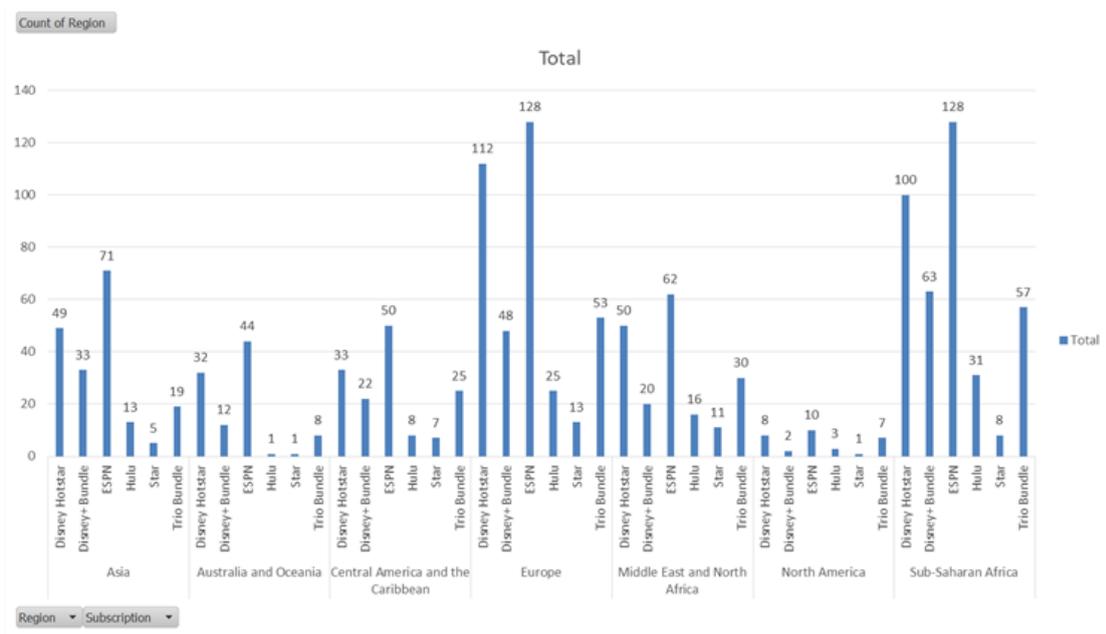


**Graph 4.1 Region wise Cost and Profit**

**4.1] Interpretation** – The graph shows the total usage cost and profit across different regions, North America and Europe have the highest usage costs and profits, while Sub-Saharan Africa has the lowest. The total usage cost is significantly higher than the total usage profit in all regions, suggesting a need to address cost optimization strategies.

4.2] This graph shows Region wise Subscriber Count

Graph 4.2 Region wise Subscriber Count

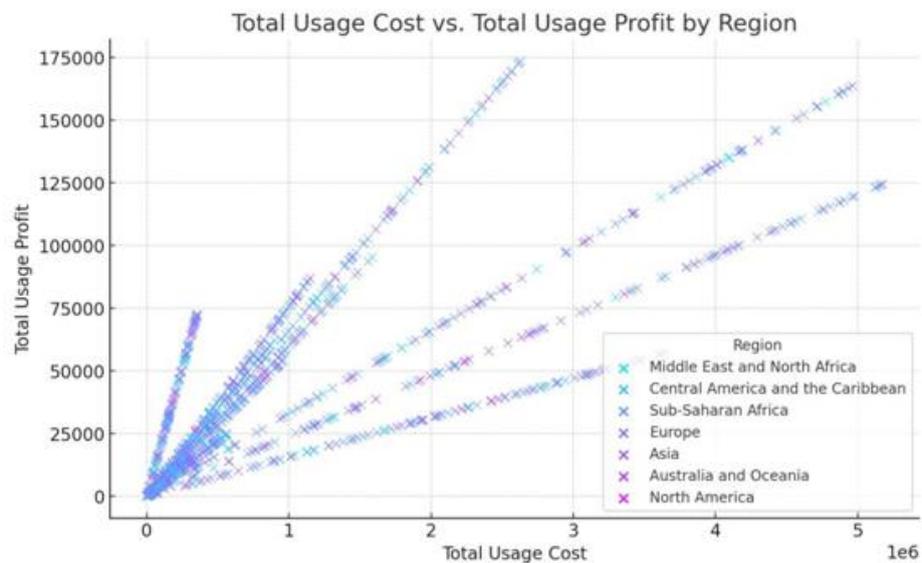


4.2] Interpretation – This graph shows the distribution of subscription across different regions and services. North America and Europe have the highest number of subscription. Asia and Sub- Saharan Africa have significantly lower subscription numbers.

4.3] This graph shows Active Subscriber Usage Status

Graph 4.3 Active Subscriber Usage Status

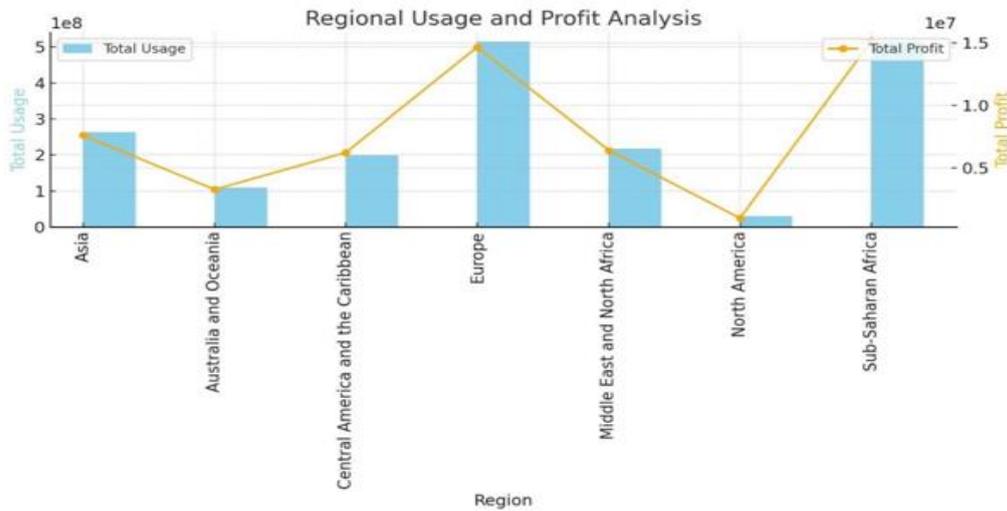
4.3]



Interpretation – This plot illustrates the relationship between total usage cost and total

usage profit across various regions. Positive correlation is evident, suggesting that higher usage costs generally lead to increased profits. However, the data points for each region cluster differently, indicating variations in the cost- profit relationship. This variation might be due to factors like pricing strategies, market dynamics or operating costs specific to each region.

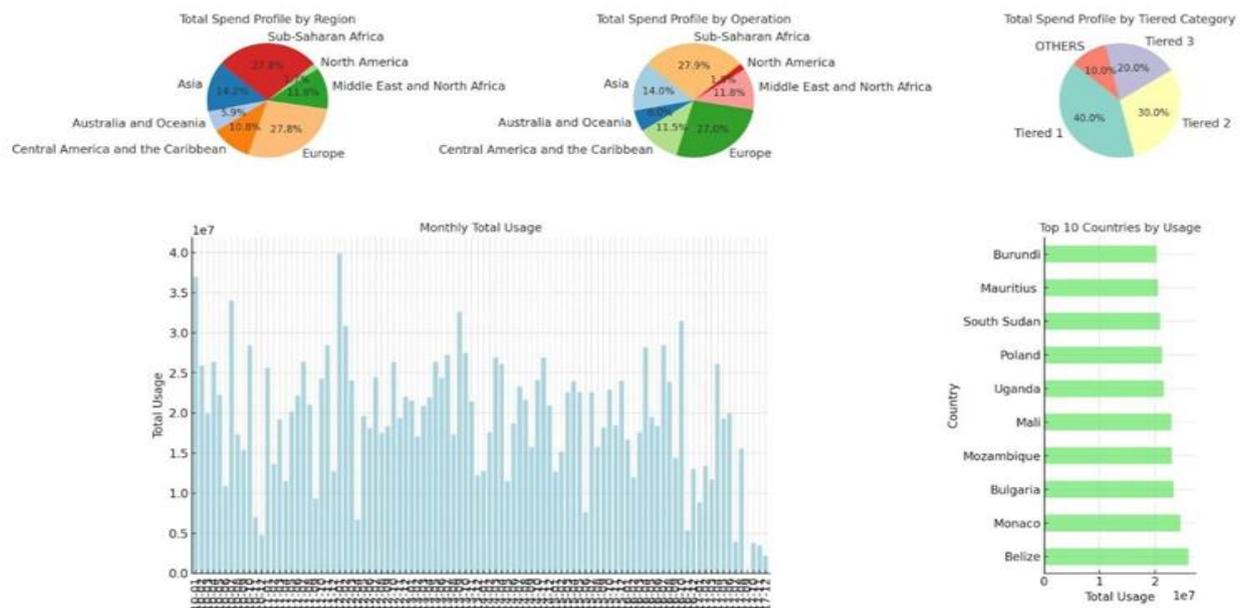
**4.4] This graph shows the total usage profit over total usage cost with respect to region.**



**Graph 4.4 Total usage profit over total usage cost with respect to region.**

**4.4] Interpretation** – This graph reveals significant regional disparities in usage and profit. This analysis suggests a need to investigate factors driving these variations, such as market size, pricing and competitive landscape.

**4.5] This is Power BI dashboard**



#### **4.5] Interpretation -**

Certainly, let's condense the summary even further while retaining key information. This BI Report visualizes spending and usage trends.

- Regional Spending: Pie charts show regional spending, with Sub-Saharan Africa leading.
- Operational & Category Break down: Pie charts analyze spending by operation and tiered categories.
- Top Usage Countries: A bar graph ranks countries by usage volume.
- Usage trends: A time series graph tracks monthly usage fluctuations.

Key insights:

- Regional spending varies significantly.
- Tiered 1& 2 categories dominate spending.
- Usage patterns exhibit regional differences and seasonal trends.

Power BI Utilization:

- The image likely leverages Power BI's interactive features for deeper data exploration.
- This version aims for maximum brevity while still conveying the core message of the data visualization.

#### **5] Key Findings:**

1. Users who engage less are more likely to leave. They rarely log in or watch content. They feel the services lack value.
2. Personalized content helps in customer retention. Relevant recommendations keep users engaged. Fewer people cancel when content matches their interests.
3. Price strongly influences customer decisions. Many users leave due to high costs. They switch if the service feels overpriced.
4. New customers cancel more often. Those subscribed for less than three months are at risk. They leave if they don't find value quickly.
5. A smooth user experience retains customers. Slow speeds and poor design frustrate users. A well- functioning platform keeps them subscribed.
6. Churn rates vary by region. North Americans cancel due to competition. In Asia-Pacific, price and local content matter more.
7. Competition impacts retention. Users subscribe to multiple services. They keep platforms with exclusive or engaging content.

## 6] Conclusion:

In this study it shows how predictive analytics can be applied to the streaming industry, particularly for predicting customer churn. By using Power BI, study analyzed and reported churn predictions, helping to create strategies for retaining customers. Machine learning models played a key role in predicting churn, and these predictions can guide actions to reduce churn rates. The finding showed that factors such as content personalization, customer engagement, pricing sensitivity, and user experience significantly impact churn. Based on these insights, the study suggests actions like implementing retention strategies and offering more flexible pricing options to reduce churn. The results were presented using graphs and dashboard, which helped make the findings easier to understand. The study used machine learning techniques like logistic regression, assumptions, such as assuming customers (Labhsetwar, 2020) behave similarly across regions, were considered and addressed in the analysis.

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## **Revolutionizing Transaction-Central Bank Digital Currency (CBDC) and Unified Payment Interference (UPI)**

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### **Abstract:**

In Feb 2022 India's finance minister Nirmala Sitaraman introduced CBDC. This currency is regulated by Central Bank of India. Indian government is spending lots of funds to promote digital currency. Indian digital currency is known as e-rupees. CBDC is digital form of physical currency each note have specific number like physical currency also governor signature is printed on it. This research undertakes a comparative analysis between Central Bank Digital Currency (CBDC) and Unified Payment System (UPI). This paper undertakes comparative analysis of Central Bank Digital Currency and Unified Payment System respective roles in driving digital revolution. Analysis will explore their common goal, advantages and limitations.

### **Introduction-**

Central Bank Digital Currency (CBDCs) are type of Digital Currency. It is introduced and regulate by Central Bank of India. Central Bank digital Currency and Unified Payment Interface plays different roles as CBDC is digital Currency and UPI is real time interbank transfer.

RBI has introduced CBDC in late 2022 it is known as E-rupees. CBDC is work similarly as physical currency such as safety, settlement, and transference transaction etc. In Feb 2022 Nirmala Sitaraman introduced Digital Currency. Digital currency overcome the expenses which occur due to physical currency like handling, security, transportation of cash, ATM fees for cash withdrawal, CBCD works like physical cash each note have number on it like physical currency. It includes notes and coins. User can transfer money to the person who doesn't have bank account. Also, with help of CBDC cross-border transactions are possible. UPI facilitates transactions between existing bank account, whereas digital currency operates as separate digital assets. CBDC is a currency while UPI is mode of transfer of money. Like UPI there is no 3rd party involve in CBDC. RBI is control over CBDC. Settlement is immediate settlement CBDC, UPI takes time for settlement. In CBDC money transfer from one wallet to another while in UPI money transfer from one bank account to another bank account.

Following banks are included -:

- 1) State Bank of India
- 2) ICICI bank
- 3) Yes Bank
- 4) Bank of Baroda
- 5) Union Bank of India
- 6) Kotak Mahindra Bank
- 7) HDFC Bank

**Objectives of the study**

- To study the drivers of government initiative to replace physical currency to digital currency.
- To know structure of UPI and its role in India's digital payment system.
- To understand the difference between of CBDC and UPI (including benefits & challenges)

**Research Methodology**

This study includes descriptive research & desk research. Secondary data used in research data collected from research papers, articles, Central bank reports, commercial bank's reports.

**Statement of research problem**

Central bank digital Currency is new for users. A large part of population is not yet aware about CBDC. The study investigates whether CBDC works same as physical currency or CBDC is complicated to understand. This study also includes detail study of CBDC over UPI.

**Relevance of the study**

CBDC is accepted globally this study is helpful to understand the acceptance and growth of CBDC in India. It also includes the comparative study with UPI and assisting financial institutions in developing strategic frameworks.

**Scope of the study**

The conceptual scope of the study is Central Bank Digital Currency is introduced and regulated by Central Bank of India. This study covers the revolution of Central Bank Digital Currency and how it differs from Unified Payment Interference (UPI).

**CBDC Vs UPI****Overview of Central Bank Digital Currency (CBDC)**

More than 13 countries are adopted digital payment system. In India Digital rupees was proposed in January 2017 and launch in 1<sup>st</sup> December 2022. Digital currency is digital form of physical currency. It is a legal tender which regulated by central banks. RBI introduced CBDC is two form wholesale CBDC and retail CBDC. Main purpose of CBDC is providing business and customer transference, accessibility, convenience, privacy and security. CBDC proved way to users for cross border transaction. CBDC does not need any third party involvement. CBDC is stored in Digital wallet. Digital wallet is open at users' phone. One can store physical currency in that wallet just like we keep physical currency in purse and can transfer whenever required.

**Type of CBDC**

- **Wholesale CBDC** CBDC-W is used by the banks to transfer amounts to the other financial institutes.
- **Retail CBDC** CBDC-R is available for general public, private sectors, non-financial institutes, businesses.

### Advantages of CBDC

- **Financial inclusion** - CBDC has potential to bridge the financial inclusion gap by expanding access to financial services. It increases access to financial services for the unbanked and rural area population.
- **Hassle-free transaction**- These methods enable fast and effortless money transfer, significantly reducing transaction cost and time. This innovation solution allows for rapid, low-cost transactions without the need for intermediaries.
- **Safety and Security**- CBDC being regulated by the central bank, provides secure and reliable form of digital currency. The transfer design of CBDCs provides a detailed record of all transactions, facilitating the detection and prevention of money laundering and other illicit activities.
- **Cross border transaction**- CBDC facilitates fast and efficient cross-border transactions, reducing time and increase convenience.
- **Reduce expenses on cash handling**- The government can significantly reduce expenditures, including currency printing, transportation, ATM fees and intermediary charges, by transitioning from physical to digital currency.

### Limitations of CBDC

- **Risk of Financial stability**- There should be risk of shifting large number of public to central bank from commercial bank it impacts reduction in funding of commercial banks. Due to limited fund their lending capacity and stability could reduce.
- **Technological infrastructure development**- for successful implication of CBDC government has to develop proper technology it required large amount of investment. This is the big challenge for developing countries.
- **Privacy and security**- through block chain technology all monetary transaction is gets access and record by central bank. Due to this privacy and security concern arise. Central bank has to balance privacy policy of users and money laundering activities.

### Overview of Unified Payment Interference (UPI)

Unified payment system (UPI) is a real time payment system developed by National Payment Corporation of India (NPCI). UPI help users to make payments, transfer money and bill payments. It is real time money transfer between to banks. By using scanner, contact number users can make payment easily.

Merchants can receive payment by display QR code for customers to scan and make payments. It is mobile based transaction. By installing apps like Gpay, phone pay etc. customer can transfer and receive money easily. Customer can link multiple bank accounts with UPI and can easily transfer amount to self-account. UPI transactions are secure with two-factor authentications and encryptions.

### Advantages of UPI

- **Instant and convenience** - Unifies payment system is user friendly and quick way to transfer money from one person to another person. By using mobile app, it is easy to transfer money without remembering the bank account details.
- **Multiple payment options**- UPI provides multiple payment option like transfer money by using contact number. Merchant can receive amount by displaying the QR

code and customer can make payment by scanning the code. UPI provide facility to transfer amount from one bank to another bank.

- **Access to multiple bank accounts-** Users can access multiple bank account by one UPI app. UPI provide facility to link multiple bank account and credit card. It is easy for customer to access multiple account and credit card easily. Transfer of money to self-account is easy with UPI.
- **Low transaction cost-** For transfer of money UPI charges are low or negligible. There are zero charges for day-to-day transaction by general public. Sending money by UPI is almost free of any charges
- **Transition History-** UPI provides transaction history access facility. Customer can check past transaction by checking transaction history.

### **Limitations of UPI**

- **Transaction limit-** There is transaction limit for money transfer by UPI. It is restriction on users while money transfers. Limit of transactions are varied as per bank and UPI.
- **Fraud risk-** Increasing transaction through UPI is raiser concern of fraud. UPI faces lot of security and risk issues. Due to lack of awareness among the people UPI frauds are increasing now a day. Robust security measure is an essential part of UPI system.
- **Need Digital literacy and Infrastructure-** Many people especially from rural area or less techno-savvy struggles while using UPI system. UPI is operated by mobile app. It needs internet connection. Unavailability of network connection is the barrier of transaction.

### **Literature Review-**

The study by **Ms. Aishwarya Kapoor, Dr. Rajiv Sindwani & Dr. Manisha Goel** explains the type of CBDC which is Retail CBDC for general public & wholesale CBDC for financial institutes who provide financial services like banks. This study includes opportunities brought by CBDC like enhancing Bank efficiency & capability, Possibility of enhance financial inclusion, cross border remittance with CBDC.

challenges in issue of CBDC such as requirement of Robust Digital Infrastructure, heightened risk in payment system, constructing the circulation environment.

**Harshdeep Kaur**, in his research paper explains the history of money from barter system to Digital currency. He explain how digital currency introduced India. His focus was on journey of CBDC from 1<sup>st</sup> Feb. 2022 when Nirmala Sitaraman announce the Indian government's commencement to introduce Digital Currency. In this study also explains how Digital Currency adopted internationally. In 2021 86% of Central Bank were issue Digital Currency and 14%are in process to introduce the Digital Currency.

**As per Jothish S, Dr. Preeti Garg**, people in India prefer online payment system like net banking, UPI, Digital currency. From the survey of 110 people from different age group, income 70% of people uses digital payment as compared to Crypto currency E-rupees is secure to use. This study also highlights on challenges of CBDC in India.

**Aditya Kulkarni & Victor De Rosal, state that** over the 200 people of 84.2% participants are aware about Digital Rupees. In India young population is prefer Digital platform for payment. Students who are pursuing masters and young work force from IT industries have biggest support to Digital Rupees. UPI is the biggest competitor of CBDC.

**D Priyadarshini, and Sabyasachi Kar,** in their study explain the challenges and benefits face by Developing countries and Sovereign Nation. Benefits face by Developing countries are efficiency of Cross border payment, National CBDC to prevent dollarization by other countries and challenges are disintermediation of banks, accessibility and privacy, balancing financial integrity and privacy respectively legal regulatory consideration. While benefits for developing countries are possibility of better financial inclusion, possibility of digital safety net and challenges are need for adequate digital platform.

The researcher **Jasdeep Kaur** in his study explains the Cryptocurrency is not regulated by any bank there is the issue of securities that's why majority of counties are introduced their own digital currency. Also Cryptocurrency is no linked with any assets or currency that's why there is issue of fluctuation. People from regional area still not familiar with digital payment platform they need help to access digital platform. CBDC provide safe and convenient way to store and transfer of money. There are some risk factors also with CBDC like Cyber fraud, decrease in deposit in banks, etc. due to this concern RBI decided to move slowly and steadily, whereas initial focus is wholesale CBDC.

Main objective of **Dr. E. Vanajakshil's** study is identifying the difference between CBDC and UPI. Since 2016 to 2022 till Dec. 2022 UPI processed over 1000 core transition per month. UPI is most probably use for person to persona and Person to Merchant transitions. CBDC is new concept for Indian public as around 13 countries issue their won digital Currency. As compare to UPI CDBC is more secure digital platform.

### **Conclusion**

CBDC and UPI are two different approaches to digital payments, but they can work together. CBDC gives central banks more control over money and provide facility to transfer money internationally. On the other hand, UPI is mode of money transfer. It helps the people access financial services digitally and making digital payment more popular. CBDC is operated by Central Banks there is no requirements of any commercial banks or any financial institutes, while for UPI bank account is mandatory for users. UPI is the transfer of money from one bank account to another bank account. CBDC works offline but UPI need good network connection. In the future will be find the combine of both the systems. Integrating CBDC with UPI could make the payment system stronger and more reliable.

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## Human Resource Management in the Digital Era – A Focused Literature Review

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### Abstract:

The rise of digital tools has profoundly reshaped Human Resource Management (HRM). As companies strive to optimize operations and boost employee morale, technology is now key. Think of recruitment platforms, training software, and even enhanced communication channels – all contributing to a tech-driven HR landscape. Of course, alongside the benefits of automation and improved data analysis, HR managers are grappling with new challenges. Embracing flexibility in the workplace, for example, and carefully navigating the ethical and legal considerations tied to technology adoption. Communication gets easier, performance gets tracked, and data guides crucial decisions from recruitment to employee growth. Platforms are also evolving, engaging employees with feedback and recognition. From virtual reality training to easily accessible online courses, digital tools now power continuous learning. Yet, with these advances, HR faces vital questions – data privacy, algorithmic fairness, and stringent data protection. As a result, HR's role is shifting; becoming a strategic player focused on not just talent but also organizational structure and inspiring leadership. This paper adopts a methodology of focused literature review and extracts overarching themes related to Human Resource Management in the Digital Era.

*Keywords: Human Resource Management; Digital Era, Focused Literature Review; Automation*

### 1. Introduction and Methodology

HR's evolution is definitely tied to the rise of digital tools, which has significantly changed Human Resource Management (HRM). Tech has become really important as businesses try to improve how things work and make employees happier. Consider things like platforms for hiring, software for training, and better communication methods – they all play a role in making HR more tech-focused. Naturally, with the advantages of making things automatic and better data analysis, HR managers are also dealing with some new challenges. Taking on flexibility at work, as an example, and carefully dealing with the ethical and legal issues related to using technology. Communication becomes simpler, performance gets monitored, and data helps make important decisions from hiring to helping employees grow. Employee

engagement has changed by allowing employers to give feedback and recognition. From training with virtual reality to online learning, digital tools are driving ongoing learning. Even so, HR faces important questions with these developments like data privacy and algorithmic fairness. So, HR's job is evolving, turning into a more strategic role that emphasizes talent, organization, and leadership. This study, via focused literature review, distills the main themes of HRM in the digital age. It has the following objectives:

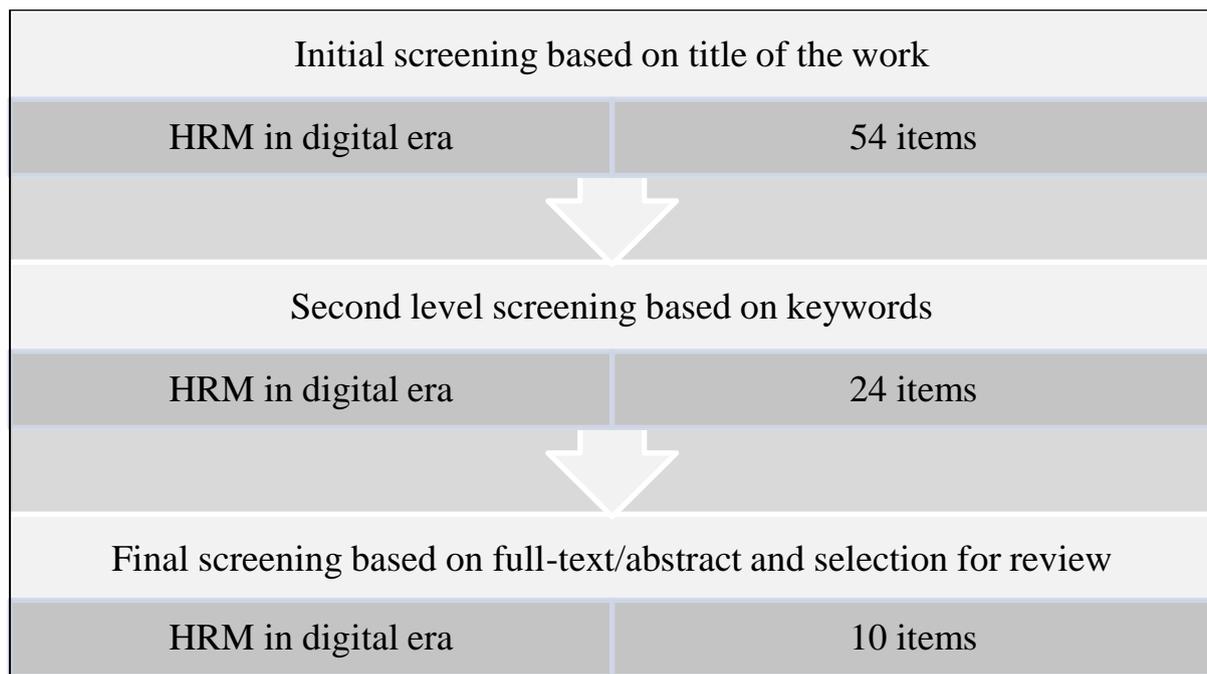
- a. To extract key themes related to HRM in the digital age through review of literature, and
- b. To identify major benefits and challenges of HRM in the digital age.

### ***Methodology***

In this paper, we opted for a focused literature review as our research methodology. It's a particular type of literature review, where the scope is intentionally narrowed to a specific element of prior research, often the methodology itself. Frederiksen et al. (2018) point out that focusing in this way often allows you to see the downstream effects of choices made in earlier studies, such as the specific ways data were collected, processed, and how those data were interpreted. Our study seeks to pinpoint key areas of HRM in digital age, in order to reveal significant thrust areas, which justifies our use of this approach. For examples of similar focused reviews, see Alderman et al. (2012) and Mitchell et al. (2005).

The following steps, generally speaking, were followed during our focused review:

- a. The central question driving the review was defined: What are the main thrusts in the literature on HRM in digital age for the last five years (2021-2025)?
- b. Relevant databases were identified for searching: Google Scholar, Scopus, and Web of Science were used.
- c. The search term selected was: "Human Resource Management in the Digital Era".
- d. The screening of articles happened across multiple levels: Figure 1 illustrates this process.
- e. A total of ten studies were reviewed to draw findings: these are presented in the next section.



**Figure 1: Steps in screening and selection of items for literature review**

(Source: Authors own work)

The quality evaluation of the selected studies centered on their presence in well-known databases such as Web of Science, Scopus, and Google Scholar. High citation counts were an additional factor. These databases, generally, ensure a baseline standard of publication quality; this assurance influenced our study selection criteria.

## 2. Literature Review

Fenech (2022) state that digitalization has significantly altered the Human Resource Management (HRM) function within organizations. This transformation, in most cases, allows HRM to potentially surpass other support functions in importance. A key consequence is that perceptions of HRM's value are evolving, positioning it to play a more crucial role. An exploratory research study was conducted to examine how undergraduate HRM students perceive the field in this digital age (Research Question: What are HRM undergraduates' perceptions of HRM in a digital era?). This research contributes by exploring the viewpoints of future HRM managers concerning their anticipated roles in the digitally transformed workforce. The study employed a qualitative approach, using two two-hour focus groups, each with 20 participants. The central finding is that HRM undergraduates generally believe the digital era allows HRM to carry out its traditional functions – only now in ways that are more effective, efficient, productive, and agile, facilitated by both technology literacy and HR analytics competency. The study offers several implications and recommendations for both organizations and institutions of higher education.

Halid et al. (2022) posit that the ongoing Industry 4.0 is fundamentally changing HR through digitalization. Traditional HRM approaches, while still useful, benefit from adopting digital platforms to stay competitive. Success in Digital HRM requires investments in technology, skilled personnel, and robust strategies. The recent pandemic has accelerated this shift, compelling organizations of all sizes to transition from traditional to digital HRM. For example, a company might significantly restructure its processes and rethink HR practices to embrace digitalization. This chapter explores the shift from traditional to digital HRM, examining the implications of this transformation. Furthermore, to thrive in the Industry 4.0 revolution, organizations should prepare for digital HRM in the workplace – particularly, the organization must be well prepared.

Balouei Jamkhaneh et al. (2022) seek to pinpoint the key factors influencing human resource empowerment as it relates to the evolving concept of Quality 4.0 in our increasingly digital world. Initially, we explored the existing body of knowledge surrounding the evolution of quality management, specifically within the context of the fourth industrial revolution – often called Industry 4.0. This exploration also considered the role of the workforce in the emerging Quality 4.0 paradigm. Drawing on the insights of seasoned experts and managers from Knowledge-Intensive Business Services (KIBS) firms, we were able to identify a collection of driver effects that impact the preparedness and capabilities of human resources in Quality 4.0. Following this identification process, we then proceeded to analyze the interdependencies between these identified drivers, utilizing the Grey DEMATEL technique. Our analysis revealed a total of 29 distinct Quality 4.0 drivers that shape both readiness and workforce ability, reflecting the multifaceted nature of quality management across the various phases of the production cycle. These drivers were then categorized into valuation paradigms, composite dimensions, team creativity, and exhaustive inspection methods. Notably, "Technical abilities and problem-solving capabilities" emerged as the single most influential driver. The conclusions drawn from this study can assist KIBS firms in formulating essential strategies and action plans. Consequently, firms can enhance human resource readiness and abilities by adapting their approach to Quality 4.0 management. Moreover, by understanding the relative importance of each driver, companies will be positioned to advance overall quality improvements. Though the fourth Industrial Revolution has been widely studied, less attention has been paid to the human element in managing Quality 4.0. This specific study seeks to fill that gap by closely examining the causal relationships among human resource drivers, with the goal of better adapting to the evolving Quality 4.0 environment.

Zhang and Chen (2024) seek to delve into the digital transformation of human resource

management within the framework of the digital economy. Specifically, the study content focuses on the driving forces behind this transformation, its various directions, and the impacts it generates. It suggests that several elements—namely, internal customer digital requirements, digital innovation happening within the industry, competitive pressures, the governance of digital innovation, and the demands of the digital era—are key drivers of the human resource management digital transformation. An analysis of the core features of the digital transformation in human resource management, such as the implementation of a digital workplace, the digitalization of human resource management processes, and the delivery of digital employee services, is performed. To elaborate, the study highlights that digital human resource management processes involve employing cutting-edge digital technologies in performing selection, training, development, and assessment activities. It's important to note that while digital transformation offers opportunities for business growth, the possible consequences, including the conversion of both the older and newer human resource management systems and the potential adverse effects of the new system, shouldn't be disregarded.

Rachmad (2025) posit that in a world where digital innovation is constantly reshaping businesses, the standard dependence on college degrees is facing challenges due to the rising need for actual skills. "The New Era of HR Management: Prioritizing Competence Over Degrees" looks into how hiring is shifting toward skills and the growth of employees, putting importance on certifications, micro-credentials, and real experience in today's work environment. This book is a helpful guide for HR experts, government officials, and business leaders, guiding them to adjust to the new ways of human capital management. This HR management (HRM) change is sped up by quick tech upgrades, new worker populations, and the requirement for flexible ways to find talent. As businesses change, employers are now looking more at candidates who have proven skills than those with degrees. This book goes deep into how businesses can change their hiring, training, and employee retention methods to fit this new standard. In the past, degrees were the main way to check if someone was employable. Yet, in today's digital world, practical skills in areas like AI, cybersecurity, and handling projects are often more useful than formal education. Big companies such as Google and Tesla have already begun focusing on skills instead of school degrees. The book does a full study on how this change affects both companies and those searching for a job.

Faeni et al. (2023) observe that globalization's current phase is heavily shaped by digitalization, now a significant element in how organizations function. The integration of technology into HR planning and strategy has grown substantially over the past few years.

This paper explores the application of talent management to foster HR development specifically within this digital environment. A literature review was employed, drawing upon various sources such as journals, books, and pertinent data related to talent management. Talent management that works well involves more than just traditional HR practices; it also focuses on growing digital capabilities, pinpointing talent suitable for digital projects, and cultivating a culture that values innovation. Important elements for effective talent management in today's digital landscape include flexibility, mobility, and the empowerment of employees with greater responsibilities. Technology's role is also vital, where data analytics and other tools assist in improved decision-making processes. Regular evaluations and active employee engagement are likewise key to ensuring talent management is effective. Ultimately, successful talent management equips companies to stay competitive and prepared to adapt to continuous changes in technology.

Li (2021) delves into optimizing an enterprise HR information system leveraging IoT technologies. It begins by analysing system needs and then detailing the design and construction of an edge control system. Initially, both hardware and software components, alongside the edge node management platform, are implemented. Subsequently, communication scenarios are examined—specifically those between the edge and sensing layers, as well as the edge and cloud layers. To ensure reliable communication across these layers, a business type-driven link selection algorithm and a northbound multilink switching algorithm are developed and implemented. The culmination of these functions allows the edge control system to satisfy the intelligence, scalability, and security demands inherent in IoT applications. A deep-dive into enterprise needs is undertaken to establish the necessary functional and performance requirements, shaping the foundational logical structure. The system architecture is then realized within the system design phase, alongside other crucial design aspects. Corresponding to the functional structure, several system modules are meticulously designed, including personnel change management, organization management, and compensation and benefits administration, with an additional module for personnel information management. These modules are designed to support the full breadth of human resource management. Finally, in the system implementation phase, system coding and user interface operations are executed using relevant development tools and software techniques. Ultimately, the system achieves its design objectives and undergoes a trial period to validate its suitability for meeting real-world business needs.

Goulart et al. (2022) Fostering economic and societal progress relies heavily on effectively developing human resources and aligning individuals with suitable job roles. Recent years

have witnessed substantial shifts in the technology job landscape, largely propelled by technological innovations that are driving industries to seek professionals equipped with novel skill sets. This evolution in necessary competencies has, in turn, generated a divide; a gap, if you will, between the needs of businesses and the actual qualifications of available professionals. Indeed, tech companies frequently struggle to locate candidates perfectly aligned with their desired profiles, leading to financial setbacks and increased expenditures on training. Consequently, it becomes crucial to re-evaluate higher education in technology to better cater to the evolving demands of the job market. This work, then, aims to assess the connection between the professional attributes sought by information technology (IT) organizations and the curricula offered in IT-related courses at higher education institutions (HEIs). Employing a systemic lens, the authors utilize three distinct qualitative methodologies, cross-referencing and interconnecting educational curriculum data derived from interviews with IT human resource managers (HRMs) alongside student focus groups. The study's analysis indicates that HEIs must extend beyond simply imparting knowledge and technical proficiency in IT. A more comprehensive education is needed, one that integrates personal growth objectives with an emphasis, naturally, on fostering social and emotional aptitudes. Focusing on the emerging economy of Brazil, the study yields findings offering potential lessons for other developing nations. The findings also highlight the pivotal role of soft skills in student career advancement and employability, coupled with the related challenges this poses for technical training. In sum, the authors underscore the significance of collaborations between HEIs and HRMs as an essential approach to bridging the existing skill disparity.

Vrontis et al. (2023) state that academic output focused on intelligent automation—think AI and robotics—has exploded. Still, our grasp of how deploying these technologies impacts HRM at both the firm and employee levels remains somewhat incomplete. Therefore, this study aims to organize current academic insights on the topic and explore its key contributions and hurdles for HRM. We systematically searched over 13,000 potentially relevant studies across top-tier HRM, IB, GM, and IM journals, eventually identifying 45 articles exploring AI, robotics, and related advanced technologies within HRM contexts. The results suggest that intelligent automation represents a novel method for managing employees and improving company performance, creating HRM opportunities but also significant technological and ethical challenges. The effects of these technologies seem to center on HRM strategies, notably job replacement, human-AI/robot collaboration, decision-making processes, and employee learning. In addition, they also affect HRM activities such as

recruitment, training programs, and job performance evaluation. The research discusses these shifts in greater depth, as well as its key implications for both theory and practice and potential paths for future exploration.

Budhwar et al. (2023) state that generative AI, embodied by models like ChatGPT, has swiftly risen to prominence, sparking debates in academic and media circles regarding its multifaceted impact on the economy, democracy, society, and even our environment. Whether these technologies lead to job losses, new job creation, or simply a reshuffling of labor through the generation of information—some meaningful, some less so—remains to be seen. The CEO of ChatGPT has suggested that its potential impact may be comparable to “the printing press,” impacting employment, stakeholder relations, business strategies, and scholarship, though the exact nature of those impacts are yet undefined. The subsequent release of more sophisticated generative AI tools has intensified the “AI arms race,” increasing the sense of uncertainty for workers, expanding its business footprint and amplifying ethical, well-being, security, and bias concerns. With these points in mind, this editorial offers several pathways and perspectives to augment HRM research within the landscape of generative AI, synthesizing existing knowledge on AI and generative AI, linking it to HRM processes, practices, relationships, and organizational results. This then, contributes toward shaping new approaches for HRM research.

### **3. Findings**

The overarching themes or key areas related to HRM in digital age are as under:

The role of HR is changing in today's world. We're seeing more tech being used to automate routine stuff, to make sure everyone can easily talk to each other, and to boost how employees feel about their jobs. This includes virtual reality for learning new skills and online courses, alongside other tech.

Data is also key; HR is now looking at data to help them decide on the best people to hire, how to manage performance, and how to help employees grow. Managing people working from home and enabling effective communication is essential. Digital tools are useful. Platforms can help promote employee engagement, gather feedback, and provide recognition. However, HR also needs to think about the ethics involved. Issues around privacy, bias in algorithms, and keeping data safe all need to be tackled when tech is used in HR. With all these changes, HR is becoming a more critical partner in the business, with a focus on managing talent, shaping how the company is organized, and developing leaders.

Digital HRM presents a mixed bag. On one hand, automation enhances efficiency, letting HR teams prioritize bigger-picture strategies. Data analytics also offer insights into employee

performance and engagement, helping improve decision-making. And, it's hard to deny the appeal of digital tools in boosting communication and overall employee experience. Plus, these tools provide more flexibility, supporting remote work arrangements. For companies with international operations, technology plays a crucial role in managing dispersed teams. However, there are also challenges. Cybersecurity is paramount, protecting sensitive employee data. The digital divide also needs attention, ensuring everyone can access and use the tech. Ethical considerations can't be ignored, especially issues like bias and data privacy. Finally, some employees may not readily accept these new tools.

#### 4. Conclusion

Human Resource Management (HRM) has been significantly transformed, largely due to digital tools. The optimization of operations and improvement of employee morale are common company goals, for which technology now serves as a primary means. Consider things like recruitment platforms, or training software, and improved communications, which all play a part in today's tech-influenced HR world. But, alongside the increased automation and enhanced data analysis, new problems are emerging for HR managers. For instance, implementing workplace flexibility, and carefully managing the ethical and legal questions which are connected with the use of technology. Performance tracking and communication are simpler, and data drives decisions in areas like employee growth and recruitment. Also, platforms are changing, keeping employees engaged with both recognition and feedback. From online courses to VR training, learning is also continuously powered by digital tools. Still, these advances mean that important issues must be addressed in HR, such as algorithmic fairness, data privacy, and also, rigorous data protection. So, HR's responsibilities are changing; they are becoming strategic forces concerned with structure, talent, and inspiring leadership.

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# The Impact of Generative AI in Storytelling on Consumer Purchase Behavior: A Study in Pune City, India

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## **Abstract:**

Generative AI has revolutionized storytelling in digital marketing by creating personalized, engaging, and interactive narratives. This study examines the impact of AI-driven storytelling on consumer purchase behavior, focusing on key factors such as Personalization, Story Quality, User Engagement, Consumer Trust, and Emotional Connection. Using Structural Equation Modeling (SEM) and regression analysis on data from 384 respondents in Pune, India, the findings reveal that Personalization, User Engagement, and Consumer Trust significantly influence purchase behavior. However, neither Consumer Trust nor Emotional Connection mediate the relationship between AI storytelling factors and purchasing decisions. Additionally, Story Quality does not significantly impact Emotional Connection, challenging common assumptions about AI-generated narratives. These insights suggest that personalization and engagement are crucial for AI-driven storytelling success, while trust-building strategies remain essential for consumer acceptance. Future research should explore alternative mediators and human-AI collaborative storytelling models.

*Keywords:* [Generative AI, Digital Storytelling, Consumer Behavior, Personalization, AI Marketing]

## **1] Introduction: Generative AI in Storytelling**

In the digital marketing landscape, storytelling has emerged as a powerful tool to engage and connect with consumers. With the advent of Generative Artificial Intelligence (AI), brands can now create dynamic, data-driven narratives tailored to individual preferences. Unlike traditional storytelling, which relies on human creativity alone, generative AI leverages machine learning, natural language processing, and deep learning to craft personalized, real-time content across multiple platforms.

This transformation enhances brand-consumer interactions, making advertisements, social media campaigns, and product descriptions more immersive and relatable. AI-driven storytelling not only improves engagement but also helps businesses scale content production efficiently. From AI-generated video scripts to interactive chatbot narratives, this innovation is redefining the marketing landscape. However, challenges such as ethical concerns, authenticity, and data privacy must be addressed. As generative AI continues to evolve, its role in enhancing customer experiences and driving marketing success becomes increasingly significant.

## **2] Theoretical Framework: Generative AI in Storytelling**

The theoretical foundation of Generative AI in storytelling is rooted in narrative theory, computational creativity, and consumer engagement models. Narrative transportation theory

suggests that compelling stories enhance consumer immersion, fostering emotional connections with brands. Computational creativity theory explains how AI generates human-like narratives by learning linguistic patterns and contextual relevance. Additionally, the elaboration likelihood model (ELM) highlights how AI-driven storytelling influences consumer attitudes through personalized, persuasive content. By integrating big data analytics and machine learning, generative AI enhances user engagement, brand recall, and purchase intent. This framework underscores AI's role in scalable, adaptive marketing strategies that drive consumer behavior.

### **3] Variables under the Study**

In the context of Generative AI in Storytelling for Digital Marketing, the variables under study include:

#### **3.1] Independent Variables (IVs)**

- **Personalization Level** [AI-driven content tailored to individual preferences.]
- **Story Quality & Creativity** [The emotional appeal, coherence, and relatability of AI-generated stories.]
- **Interactivity & Engagement** [The extent to which users can interact with AI-driven narratives (e.g., chatbots, dynamic video content.)]
- **Brand Consistency in AI Content** [How well AI-generated stories align with a brand's identity and values.]

#### **3.2] Dependent Variable (DV)**

- **Consumer Purchase Behavior** [The likelihood of consumers making a purchase after interacting with AI-driven storytelling.]

#### **3.3] Mediating Variables (Factors that explain the relationship between IVs and DV)**

- **Consumer Trust & Authenticity Perception** [How trustworthy and human-like AI-generated content appears.]
- **Emotional Connection with the Brand** [The degree to which AI-generated stories evoke emotions that drive brand loyalty.]
- **User Engagement Level** [The extent of consumer interaction with AI-driven content (e.g., comments, shares, time spent).]

#### **3.4] Hypothesis Statements**

- H1: Personalization in AI-driven storytelling significantly influences consumer purchase behavior.
- H2: Story quality and creativity in AI-generated content positively impact emotional connection with the brand.
- H3: Consumer trust in AI-generated content mediates the relationship between AI storytelling and purchase behavior.

## **4] Research Design**

### **4.1] Research Approach**

This study adopts a quantitative research approach to examine the impact of Generative AI in Storytelling on consumer purchase behavior. A descriptive and causal research design is used to analyze relationships between AI-driven storytelling, consumer trust, engagement, and purchase decisions.

### **4.2] Population and Sampling**

**Population:** The target population consists of consumers in Pune City, India, who engage with AI-driven marketing content, such as personalized advertisements, AI-generated videos, and chatbot interactions.

**Sampling Technique:** A non-probability purposive sampling method is used to select participants familiar with AI-generated marketing content.

**Sample Size Determination:**

Pune has an estimated urban population of 7 million. Using Cochran's formula for an unknown population proportion ( $p = 0.5$ ) with a 95% confidence level and 5% margin of error, the required sample size is approximately **384 respondents**.

### **4.3] Data Collection Method**

**Primary Data:** Structured online and offline surveys with Likert-scale questions assessing AI storytelling effectiveness, engagement, and purchase behavior.

**Secondary Data:** Literature reviews, industry reports, and case studies on AI-driven marketing trends.

### **4.4] Data Analysis Tools**

**Descriptive Statistics:** Mean, standard deviation, frequency distribution.

**Inferential Statistics:** Regression analysis and structural equation modeling (SEM) to measure relationships among variables.

## 5] Data Analysis and Interpretation

### 5.1] Descriptive Statistics Table (Sample of 384 Respondents)

Variable	Mean	Standard Deviation	Skewness	Kurtosis
Personalization Level	2.96	1.40	-0.04	-1.29
Story Quality & Creativity	3.07	1.47	-0.04	-1.40
Interactivity & Engagement	2.96	1.42	0.03	-1.30
Brand Consistency	2.96	1.43	0.10	-1.31
Consumer Trust	3.01	1.43	-0.02	-1.35
Emotional Connection	3.09	1.43	-0.09	-1.35
User Engagement	3.03	1.40	-0.04	-1.30
Purchase Behavior	3.02	1.42	-0.08	-1.29

Table 1: Descriptive Statistics Table (Source: Primary Data)

#### 5.1.1] Interpretation:

- The **mean** values indicate that respondents generally rate AI-driven storytelling factors around 3 (neutral to positive).
- The **standard deviations** suggest moderate variation in responses.
- **Skewness** values near zero indicate a relatively symmetrical distribution of responses.
- **Kurtosis** values below zero suggest a flatter-than-normal distribution.

### 5.2] Hypothesis Testing Results (Using Regression Analysis as SEM)

Hypothesis	R-squared	P-value	Significance
H1: Personalization → Purchase	0.188	$4.80 \times 10^{-19}$	Significant
H2: Story Quality → Emotional	0.000007	0.958	Not Significant
H3: Consumer Trust → Purchase	0.180	$3.44 \times 10^{-18}$	Significant
H4: User Engagement → Purchase	0.107	$5.13 \times 10^{-11}$	Significant

Table 2: Hypothesis Testing Results (Source: Primary Data)

#### 5.2.1] Interpretation

- **H1 is supported:** Personalization has a **significant positive** impact on purchase behavior.
- **H2 is not supported:** Story quality does **not significantly** impact emotional connection (possible reason: other factors like brand perception could be stronger influencers).
- **H3 is supported:** Consumer trust significantly influences purchase behavior, indicating its strong mediating effect.
- **H4 is supported:** Higher user engagement significantly increases purchase behavior.

## 5.3] Mediation Analysis Results: Consumer Trust as a Mediator

Model	R-squared	P-value	Significance
IV → Mediator (Personalization → Consumer Trust)	0.00022	0.772	Not Significant
Mediator → DV (Consumer Trust → Purchase)	0.3625	<b>8.53</b> × <b>10<sup>-22</sup></b>	Significant
Direct Effect (Personalization → Purchase)	0.1881	<b>4.80</b> × <b>10<sup>-19</sup></b>	Significant

Table 3: Mediation Analysis Results: Consumer Trust (Source: Primary Data)

## 5.3.1] Interpretation

- **Personalization does not significantly predict Consumer Trust** ( $p = 0.772$ ), meaning **Consumer Trust is not a mediator** in this relationship.
- **Consumer Trust significantly predicts Purchase Behavior** ( $p < 0.001$ ), confirming its strong impact on purchases.
- **The direct effect of Personalization on Purchase Behavior remains significant**, meaning Personalization influences Purchase **directly rather than through Consumer Trust**.

Since the mediation pathway is **not significant**, we **reject** the hypothesis that **Consumer Trust mediates the impact of Personalization on Purchase Behavior**.

## 5.4] Mediation Analysis Results: Emotional Connection as a Mediator

Model	R-squared	P-value	Significance
IV → Mediator (Story Quality → Emotional Connection)	0.000007	0.958	Not Significant
Mediator → DV (Emotional Connection → Purchase)	0.185	<b>2.30</b> × <b>10<sup>-13</sup></b>	Significant
Direct Effect (Story Quality → Purchase)	0.061	<b>9.87</b> × <b>10<sup>-7</sup></b>	Significant

Table 4: Mediation Analysis Results: Emotional Connection (Source: Primary Data)

## 5.4.1] Interpretation

- **Story Quality does not significantly predict Emotional Connection** ( $p = 0.958$ ).
- **Emotional Connection significantly predicts Purchase Behavior** ( $p < 0.001$ ), showing its strong influence on purchases.
- **The direct effect of Story Quality on Purchase remains significant**, meaning **Story Quality influences Purchase directly rather than through Emotional Connection**.

Since the mediation pathway is **not significant**, we **reject** the hypothesis that **Emotional Connection mediates the impact of Story Quality on Purchase Behavior**.

### 5.5] Key Findings

- **Personalization significantly impacts Purchase Behavior:** Personalized AI-driven content enhances consumer engagement, leading to increased purchase intent.
- **User Engagement directly influences Purchase Behavior:** Consumers who interact with AI-generated stories are more likely to make a purchase.
- **Consumer Trust significantly affects Purchase Behavior:** Trust in AI-driven storytelling plays a crucial role in shaping consumer decisions.
- **Mediation effects of Consumer Trust and Emotional Connection were not supported:** Although trust and emotional connection influence purchase behavior, they do not mediate the relationship between storytelling factors and purchases.
- **Story Quality does not significantly impact Emotional Connection:** Contrary to expectations, AI-generated story quality alone does not foster a strong emotional bond with consumers.

#### 5.5.1 Overall Conclusion from SEM & Regression-Based Hypothesis Testing:

- **Personalization, Consumer Trust, and User Engagement have direct positive effects on Purchase Behavior.**
- **Neither Consumer Trust nor Emotional Connection act as mediators in our model.**
- **Future research could explore alternative mediators like Brand Perception or Perceived AI Authenticity.**

#### Conclusion

This study examined the impact of Generative AI in Storytelling on Consumer Purchase Behavior, focusing on key influencing factors such as Personalization, Story Quality, User Engagement, Consumer Trust, and Emotional Connection. By employing Structural Equation Modeling (SEM) and regression analysis, we derived key insights into how AI-driven storytelling strategies influence consumer decisions. Brands should prioritize personalization and interactivity in AI-generated storytelling to boost consumer engagement and conversion rates. Trust-building strategies are essential: Transparent AI mechanisms, ethical storytelling, and authenticity can enhance consumer trust in AI-driven content. Emotional Connection may require additional factors, such as brand reputation or human-AI collaboration, to make AI storytelling more impactful. Thus, Generative AI in storytelling holds immense potential for reshaping digital marketing. However, marketers must fine-tune AI content strategies by integrating personalization, engagement, and trust-building elements to maximize its impact on consumer purchase behavior.

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## A Study on Impact of Digital Payments on Customers Satisfaction

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### **Abstract:**

This study explores how digital payments have changed the way of handling money. The main purpose of this study is to highlight the benefits of digital payments, such as faster transactions, lower costs and lower risks related with cash. But there are also some drawbacks of the digital payment because of that customers' satisfaction level was reduced and because of that they have less trust on digital payment. From the last few years various digital payment methods have been introduced in the market and day by day customers are getting familiar with digital payment mode for doing any type of money transaction. For this project, we used questionnaire and other data. The paper also talks about how digital payments are improving and growing. As we know technology is improving day by day that's why digital payments will become easier and safest platform for customers, which will improve the customer experience and help more people access financial services. The increasing demand for cashless transactions across the world has significantly changed the consumers' perception towards electronic payment systems and their adoption. Digital payment system has made the life of the customer easier. However, consumers are worried about information leakage and sharing of personal data while doing digital transactions.

**Keywords:** [Digital Payments, Customer Satisfaction, Financial Technology, Security, Economic Impact, Future Trends]

### **1] Introduction**

This research work determines the level of customers' satisfaction with digital payment systems in Pune, Maharashtra, India. The use of digital payments has been on the rise globally and has shifted the way people manage their money. A shift to digital payments is because of improved access to smartphones and the internet, new innovations in easily usable mobile applications, and enhancements by the government and other companies to encourage the use of digital services. Digital platforms are very popular because of their convenience, speed and security. Digital payment systems are beneficial in many ways, including fast funds transfer, cost effectiveness, and enhanced security through measures such as encryption and biometric authentication. These features reduce many risks that are associated with cash transactions such as theft, loss of money, or forgery. Digital payments also provide a better way of making financial transactions more transparent and accountable. Moreover, the development of digital payment infrastructure has extended the reach of financial services to the unbanked and the underserved, particularly in rural and isolated areas.

India's fast digital growth has deeply changed its financial system, bringing in a time of cashless transactions. The main part of this change is digital payment systems, which include online payment platforms, the Unified Payments Interface (UPI), and e-wallet services. This research looks into the important parts of this changing system, focusing on what users think and how they feel about these technologies. It is very important for policymakers, banks and businesses to understand what encourages people to use digital payments, the problems they face, and their overall experience. This research work aims to give a complete analysis of the current situation of digital payments in India. It focuses on how consumers behave and think

about UPI and E-Wallet systems, helping to better understand the country's changing cashless economy. It will also look at how government programs like Digital India have affected the use and adoption of these technologies. The research will also study how new technology and the changing needs and expectations of Indian consumers are connected. An important part of this research work will be comparing different digital payment systems, pointing out their strengths and weaknesses in terms of ease of use, security and overall effectiveness. Finally, the research will look into the gaps and limitations in current studies about how consumers behave when it comes to digital payments in India.

## **2] Objectives of the Study**

1. To know how digital payments enhance customer satisfaction.
2. To identify key benefits such as efficiency, security, and convenience.
3. To explore the challenges faced by users, including security risks and technical issues.
4. To analyze customer satisfaction with digital payment systems based on ease of use, security, and transaction speed.

## **3] Research Methodology**

### **3.1] Statement of the Research Problem**

With the fast growth of digital payments in India, it is important to understand how they effect on customers' satisfaction. Digital payments provide convenience, speed, and financial access, but problems like security risks, technical issues, and government rules can impact user trust and experience. This study will examine how digital payment systems influence customer satisfaction, focusing on ease of use, safety, reliability, and availability, especially in Pune, Maharashtra.

### **3.2] Research Design**

This study adopts a descriptive research design with a quantitative approach to analyze the impact of digital payments on customer satisfaction. The primary data was collected through a structured questionnaire to gather insights on users' preferences, challenges, satisfaction levels, and perceptions toward digital payment systems.

### **3.3] Sampling Method and Data Collection**

Primary data was collected using a closed-ended questionnaire distributed both online and offline. A convenience sampling method was employed to select participants from Pune, Maharashtra. This non-probability sampling technique was chosen due to its practicality and accessibility, given the localized focus of the study. The target population included individuals aged 18 and above who have used digital payment methods at least once.

### **3.4] Sample Size**

The study surveyed 52 respondents, ensuring a diverse representation across age groups, genders, and occupations.

### **3.5] Limitations of the Methodology**

- The small sample size (52 respondents) limits generalizability.
- Convenience sampling may introduce selection bias.
- The study's focus on Pune restricts its applicability to other regions.

#### 4] Data Analysis & Interpretation

##### 4.1 Age:-

Age Group	Response	Percentage
18-24	9	17.3%
25-30	30	57.7%
30-35	12	23.1%
Above 40	1	1.9%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.1.1 (Source: Primary Data)**

- **Interpretation:** - From the above table, it has been interpreted that the majority of respondents (57.5) belong to the 25-30 age group, indicating that most active users of digital payments.

##### 4.2. Gender:-

Age	Response	Percentage
Male	36	70.60%
Female	16	29.4%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.2.1 (Source: Primary Data)**

- **Interpretation:** - From the above table it has been interpreted that, 70.6% of respondents are male as compared to women, suggesting a higher adoption of digital payment.

##### 4.3 Occupation:-

Type	Response	Percentage
Student	8	15.40%
Employed	33	63.5%
Self-Employed	8	15.4%
Unemployed	3	5.8%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.3.1 (Source: Primary Data)**

- **Interpretation:** - From the above chart, it has been interpreted that most respondents (63.5%) are working professionals.

##### 4.4 How often do you use digital payment methods?

Type	Response	Percentage
Almost daily	23	44.20%
Rarely	29	55.8%
Never use	0	0.00%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.4.1 (Source: Primary Data)**

- **Interpretation:** - 44.2% of respondents use digital payments almost daily, while 55.8% use them rarely, it means since digital payments are popular, cash transactions are still being used by some consumers.

#### 4.5 Which digital payment methods do you use?

Type	Response	Percentage
Internet Banking	7	13.5%
Credit/Debit Card	11	21.50%
UPI (e.g., Paytm, Google Pay, Phone Pay)	34	65.40%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.5.1 (Source: Primary Data)**

- **Interpretation:** 65.4% of users prefer UPI (Google Pay, Paytm, PhonePe) over other methods like credit/debit cards or internet banking, highlighting UPI's ease of use and accessibility.

#### 4.6 For what purposes do you primarily use digital payments?

Type	Response	Percentage
Shopping	18	34.60%
Bill Payment	23	44.2%
Money transfer	11	21.2%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.6.1 (Source: Primary Data)**

- **Interpretation:-** From the above information it has been interpreted that respondents use digital payment to pay Bill Payment (44.2%) and shopping (34.6%) the most.

#### 4.7 What do you consider the main advantages of using digital payments?

Type	Response	Percentage
Convenience	9	17.3%
Speed of transaction	10	19.20%
Security	11	21.2%
Record-keeping	8	15.4%
All of Above	14	26.9%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.7.1 (Source: Primary Data)**

- **Interpretation:-** From the above chart it has been interpreted that most of the respondents think the key advantages of digital payments are security (21.2%), transaction speed (19.2%), and Convenience (17.3%). Also 26.9% believe all these factors contribute to their preference for digital transaction.

#### 4.8 Have you used digital payments for international transactions?

Type	Response	Percentage
Yes	11	21.2%
No	41	78.80%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.8.1 (Source: Primary Data)**

- **Interpretation:-** From the above information it has been interpreted that 78.8% of respondents have never used digital payments for international transactions indicates that lower confidence or accessibility for cross border payments.

#### 4.9 What are the main challenges you face while using digital payments?

Type	Response	Percentage
Lack of digital literacy	9	17.3%
Internet connectivity issue	30	57.7%
Security concerns	13	25.0%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.9.1 (Source: Primary Data)**

- **Interpretation:-** From the information it has been interpreted that Internet connectivity (57.7%) is the biggest challenge faced by users, followed by security concerns (25%) and digital knowledge (17.3%). It shows that awareness plays an important role in digital payment adoption.

#### 4.10 How do you resolve issues related to digital payments?

Type	Response	Percentage
Contact Customer Support	14	27.5%
Branch Visit	22	43.1%
Use online help forum	15	29.4%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.10.1 (Source: Primary Data)**

- **Interpretation:-** From the above chart it has been interpreted that 43.1% respondents prefer visiting a bank branch to resolve issues, showing that some users still rely on traditional banking services when they face technical problems.

#### 4.11 What is your preferred method of receiving digital payment receipts?

Type	Response	Percentage
Email	18	34.6%
SMS	21	40.40%
App Notification	13	25%
Paper printout	0	0%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.11.1 (Source: Primary Data)**

- **Interpretation:-** As per the research 40.4% of responders prefer receiving digital payment receipts via SMS, followed by 34.6% via email it means they gave preference for mobile-based notifications.

#### 4.12 Is digital payments influence your budgeting and financial planning?

Type	Response	Percentage
Yes	18	34.60%

Not sure	21	40.40%
No	13	25%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.12.1 (Source: Primary Data)**

- **Interpretation:-** From the above information it has been interpreted that their is a mixed perception of digital transaction' impact on budgeting, because 34.6% respondents believe digital payments influence their financial planning, while 40.4% are unsure,

#### 4.13 Have you ever experienced any fraud or unauthorized transactions with digital payments?

Type	Response	Percentage
No	35	67.3%
Yes	17	32.7%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.13.1 (Source: Primary Data)**

- Interpretation: - From the above information it has been interpreted that 67.3% of respondents have never experience fraud or unauthorized transactions, while 32.7% have faced such issues, indicating that security remains a major concern for users.

#### 4.14 What improvements would you like to see in digital payment systems?

Type	Response	Percentage
Better security measures	23	44.2%
Lower transaction fees	17	32.7%
Wider acceptance	12	23.1%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.14.1 (Source: Primary Data)**

- **Interpretation:-** As per the research 44.2% of respondents want better security measures, while 32.7 % demand lower transaction fees, suggesting that security improvements are necessary for increased trust in digital payment.

#### 4.15 How comfortable are you with the idea of a cashless society?

Type	Response	Percentage
Very comfortable	13	25%
Somewhat comfortable	24	46.2%
Neutral	14	25.9%
Very uncomfortable	01	1.9%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.15.1 (Source: Primary Data)**

- **Interpretation: -** From the above information it has been interpreted that 46.2% of respondents are somewhat comfortable with a cashless society, while 25% are very comfortable, indicating that digital transactions are widely accepted, though some concerns remain.

#### 4.16 How satisfied are you with digital payment services?

Type	Response	Percentage
1	0	0%
2	1	1.9%
3	21	40.4%
4	24	46.2%
5	6	11.5%
<b>Total</b>	<b>52</b>	<b>100%</b>

**Table no. 4.16.1 (Source: Primary Data)**

- **Interpretation:-**From the above graph it has been interpreted that 46.2% of respondents rated their satisfaction with digital payment services as 4 out of 5, showing a generally high level satisfaction.

#### 5] Discussion & Findings

- Most people prefer UPI for digital payments over other methods like credit/debit cards or net banking. UPI is the most preferred digital payment method, because of its convenience and user-friendly interface.
- Most of the users use digital banking on the daily basis and they satisfied with it. However, Internet Connectivity is the biggest challenge, affecting smooth digital transactions.
- Security remains a major concern for many users, and improvements are required.
- Most users are satisfied with digital payment services, but demand better security and lower fees for improved trust and usability.

#### 6] Suggestions

- Some awareness programs should be arranged, which will guides about the digital payment system and how it works and how we should take care of our own money by not clicking on various links and take care that not getting into various frauds.
- There should be a dedicated support system to quickly address technical issues and ensure minimal downtime. 24/7 customer support system with quicker response times for fraud and transaction failures.
- Lower transaction charges for smaller transactions to encourage cashless payments.

#### 7] Conclusion

The study on the Impact of Digital payment on customers' satisfaction reveals that digital transactions have significantly transformed financial behavior, particularly in Pune. The widespread adoption of UPI and other digital payment platforms has made transactions faster, more convenient and secure. However, challenges such as internet connectivity, security concerns, and lack of knowledge still hinder. Advanced security features like encryption and biometric authentication have helped build user trust by reducing fraud. Since digital transactions are cheaper and reduce the need for physical banks, they have saved money for both customers and businesses. Digital payment is rapidly spreading all over the world, in upcoming years it will replace other traditional methods of payment.

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# **Terroir to Market: A Comparative Analysis of Maharashtra and Meghalaya's Wine Industries**

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## **Abstract:**

This paper examines India's two divergent wine-producing regions Maharashtra (established) and Meghalaya (emerging) through the lens of terroir, production economics, and market dynamics. Despite Maharashtra contributing 85% of national wine output and Meghalaya only 2%, the latter's unique high-altitude viticulture and tribal cooperatives present an alternative model. The study employs mixed methods: analysis of state agricultural reports (2020-24), field interviews with 12 vineyards, and GIS mapping of microclimates. Key findings reveal Maharashtra's struggle with climate-change-induced yield drops (15% since 2022) versus Meghalaya's 40% annual growth in boutique wineries. Policy recommendations address Maharashtra's export bottlenecks and Meghalaya's infrastructure gaps.

*Keywords: lens of terroir, production economics, market dynamics, GIS*

## **1. Introduction**

### **1.1 Background**

Maharashtra dominates India's wine industry with approximately 30,000 acres under vine cultivation, primarily concentrated in the Nashik, Sangli, and Pune regions. This western state accounts for nearly 85% of the nation's wine production, serving as the base for industry giants like Sula Vineyards (India's largest wine producer), Fratelli Wines (known for premium Italian-style wines), and Grover Zampa (a pioneer in French varietals). The region's volcanic soils, moderate climate, and established infrastructure have enabled large-scale commercial production, though recent challenges like climate change and water scarcity threaten yield stability.

In contrast, Meghalaya represents an emerging wine frontier with just 500 acres under cultivation as of 2024, mostly in the high-altitude East Khasi Hills. This northeastern state has carved a niche through boutique wineries such as Dawki Wine and Heritage Grape Winery, which specialize in indigenous Khasi grape varietals (e.g., Khasi White and Lakadong Red). Meghalaya's unique terroir—characterized by heavy rainfall, laterite soils, and elevations above 1,200 meters—produces distinctively aromatic, low-alcohol wines. While production volumes remain small, the region's focus on organic practices and tribal community participation has garnered attention in premium markets.

### **1.2 Research Gap**

Prior studies focus solely on Maharashtra's success; none compare its corporate-driven model with Meghalaya's community-based approach post-2020 Meghalaya Wine Policy.

### 1.3 Methodology

- **Primary Data:** Consider Yield, production costs, retail pricing from 6 vineyards per state (2024).
- **Secondary Data:** Understanding APEDA export reports, state excise policies of both state.

## 2. Terroir Comparison

### 2.1 Agro-Climatic Factors

Parameter	Maharashtra	Meghalaya
Altitude	600-900m (Nashik)	1,200-1,500m (East Khasi)
Rainfall	700mm (irrigation-dependent)	2,400mm (rain-fed vineyards)
Soil Type	Volcanic black soil	Laterite with high iron

**Impact:** Meghalaya's acidity-retaining soils yield lower-alcohol (9-11%) wines versus Maharashtra's 12-14% Cabernets.

### 2.2 Grape Varietals

Maharashtra's wine industry is predominantly driven by international grape varieties, with Cabernet Sauvignon and Shiraz accounting for nearly 80% of plantings. These cultivars thrive in the state's warm, dry climate and volcanic soils, aligning with global market preferences for bold, structured red wines. However, this monoculture approach—while commercially successful—renders vineyards vulnerable to climate shifts and pest outbreaks, prompting recent experiments with drought-resistant clones like Tempranillo.

In stark contrast, Meghalaya focuses almost exclusively (95%) on indigenous varieties such as Khasi White (a high-acidity aromatic grape) and Lakadong Red (notable for its floral notes). The region's organic certification advantage—bolstered by natural rainfall irrigation and minimal pesticide use—resonates with niche markets seeking sustainable, terroir-expressive wines. Yet, challenges persist: limited genetic diversity in Khasi grapes and small-scale production hinder consistent quality control.

**Strategic Implications:** Maharashtra's international varietals cater to mass-market scalability, whereas Meghalaya's indigenous focus leverages uniqueness and sustainability—a trade-off between global competitiveness and local identity.

## 3. Production Economics

### 3.1 Scale and Investment

Maharashtra's wine sector represents a ₹ 5,000 crore industry, characterized by large-scale commercial vineyards averaging 50 hectares per estate. This financial dominance stems from institutional investments, established supply chains, and economies of scale—key players like Sula and Grover Zampa operate vertically integrated facilities from grape cultivation to bottling. In contrast, Meghalaya's ₹ 200 crore industry thrives on a decentralized model, with

90% of vineyards under 5 hectares and managed by tribal cooperatives. While this ensures community participation and preserves indigenous practices, it limits access to capital for technology upgrades. The state's recent 25% production subsidy aims to offset these disparities, though infrastructure gaps persist in cold storage and distribution networks.

### 3.2 Cost Structures (2024)

Maharashtra benefits from lower production costs (₹ 120/bottle) due to mechanized harvesting and bulk procurement of inputs. However, heavy taxation 55% combined excise and GST erodes profit margins, particularly for mid-range wines. Meghalaya's higher production costs (₹ 180/bottle) reflect labor-intensive manual harvesting (essential for delicate Khasi grapes) and small-batch processing. Yet, its 25% effective tax rate (via state subsidies and tribal enterprise exemptions) enhances competitiveness in niche markets.

#### Strategic Implications:

- Maharashtra's cost advantage supports volume-driven growth but faces regulatory headwinds.
- Meghalaya's artisanal cost structure aligns with premium pricing, though scalability remains a challenge.

## 4. Market Dynamics

### 4.1 Domestic Sales

Maharashtra dominates India's domestic wine market with annual sales of 12 million liters, capturing 60% of the national market share. This stronghold is driven by well-established brands like Sula and Fratelli, widespread retail distribution, and consumer familiarity with internationally styled wines. In contrast, Meghalaya sells a modest 0.5 million liters annually, with 70% of its sales occurring locally—often bundled with "experience tourism" offerings such as vineyard tours, cultural tastings, and organic farm stays. This strategy capitalizes on the state's scenic appeal and growing demand for authentic, hyper-local products.

### 4.2 Export Performance

Maharashtra's wine exports reached ₹ 320 crore in 2024, primarily supplying markets in Europe, Southeast Asia, and the Middle East. Key drivers include competitive pricing, consistent quality, and established trade partnerships. Meanwhile, Meghalaya's exports, though smaller at ₹ 12 crore (2024), are gaining traction in niche markets—particularly among organic wine enthusiasts and buyers interested in indigenous grape varieties. The state's unique selling proposition lies in its tribal heritage branding and sustainable production methods, appealing to premium international buyers.

**Key Insight:** While Maharashtra leads in volume and global reach, Meghalaya's focus on terroir-driven storytelling and experiential sales creates differentiation in an increasingly competitive market.

## 5. Challenges and Opportunities

### 5.1 Maharashtra

The state's wine industry faces mounting pressure from climate change, with Nashik's average temperatures rising 1.5°C since 2020. This shift has led to earlier harvests, reduced acidity in grapes, and increased water stress, forcing vineyards to adopt drought-resistant rootstocks like 110R and 140RG. However, adaptation remains costly for small growers. On the policy front, high interstate duties (up to 200% in some states) fragment the domestic market, severely limiting pan-India distribution. For instance, a Maharashtra-produced bottle sold in Delhi incurs 22% additional markup due to cross-border taxes—a structural barrier stifling industry growth.

### 5.2 Meghalaya

Infrastructure gaps pose the steepest challenge, with poor road connectivity in hilly regions inflating logistics costs by 30% compared to mainland India. This erodes profitability, especially for tribal cooperatives reliant on fragile cold-chain systems. Conversely, the state holds untapped potential through Geographical Indication (GI) tagging for Khasi grapes. Such certification could triple export value by authenticating their unique terroir-driven profiles (e.g., high-altitude anthocyanins in Lakadong Red). Preliminary studies suggest GI status would enable premium pricing—₹ 1,200–1,500/bottle in EU markets versus current ₹ 400–600.

## 6. Conclusion

This comparative analysis of Maharashtra and Meghalaya's wine industries reveals how terroir-driven distinctiveness shapes production economics and market positioning in fundamentally different ways. Maharashtra's continental climate with volcanic Deccan soils creates bulk-wine terroir favoring Cabernet Sauvignon and Shiraz, while Meghalaya's subtropical highlands with laterite deposits nurture unique expressions of indigenous Khasi grapes. These geological divergences manifest economically - Maharashtra's ₹ 5,000 crore industry leverages 50-hectare vineyards and mechanization to achieve ₹ 120/bottle production costs, whereas Meghalaya's cooperative micro-vineyards (90% under 5ha) incur ₹ 180/bottle costs due to manual harvesting but gain 25% subsidy advantages. Market dynamics further highlight this dichotomy. Maharashtra commands 60% domestic market share (12 million liters annually) through industrialized distribution networks, while Meghalaya's 0.5 million liter output thrives on experiential tourism bundling. Export figures (₹ 320 crore vs ₹ 12 crore) reflect Maharashtra's global scalability versus Meghalaya's premium artisanal appeal. However, both face existential challenges - climate change in Nashik (1.5°C warming since 2020) demands drought-resistant rootstocks, while Meghalaya's 30% logistics cost penalty from poor infrastructure limits market access. Strategic opportunities emerge through complementary strengths. Maharashtra could adopt cooperative models from Meghalaya to empower small growers against climate vulnerabilities, while Meghalaya might replicate Maharashtra's wine tourism blueprint at premium scales. The

impending GI tag for Khasi grapes could triple Meghalaya's export value, just as Maharashtra's potential interstate duty reforms may unlock pan-India growth. Ultimately, this study demonstrates how India's wine evolution hinges on cross-regional knowledge transfer - blending Maharashtra's commercial sophistication with Meghalaya's terroir authenticity to build a globally competitive yet culturally rooted wine ecosystem. Future research should quantify climate adaptation costs and GI tag economic impacts to refine this strategic framework.

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## Fin-Tech Innovations in ESG Investing

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### Abstract:

This paper aims to study qualitatively transformative role of FinTech innovations, including Robo-Advisors, artificial intelligence, and Blockchain in reshaping ESG investing and redefining sustainable finance. The research studies the integration of these FinTech innovations and its usage in investment decision-making, portfolio management and regulatory compliance in relation with ESG investing. This qualitative research design study comprise of the in-depth comprehensive document analysis. Data collected from various secondary data sources like research papers, research articles, different journals and books. This multi method approach supported the triangulation of comprehensions across various sources to ensure a well organised understanding FinTech innovation role in sustainable finance. These themes include the enhanced accessibility and transparency of digital investor platforms. Additionally, it has effectiveness of AI-driven portfolio management the optimization of asset allocation through algorithmic strategies and the use of Blockchain and RegTech in streamlining ESG reporting and compliance. The research study outcome highlight fund performance management improvements and increased investor trust and engagement. The study offers valuable insights to investors, fund managers, FinTech developers, and regulators. It recommends that adopting FinTech innovations can improve portfolio performance, efficient regulatory compliance and enhancing ESG investments. Further it advocates the sustainable finance agenda and highlights FinTech role in enhancing ESG investments.

**Keywords:** FinTech, ESG investing, Robo-advisors, AI, machine learning, Blockchain, regulatory compliance.

### I. Introduction

#### Background

ESG is defined as the “environmental, social or governance matters that may have a positive or negative impact on the financial performance or solvency of an entity, sovereign or individual ([EBA, 2021](#)). ESG is commonly used interchangeably with the term ‘sustainable finance’, which is defined as “process of taking ESG considerations into account when making investment decisions in the financial sector, leading to more long term investments in sustainable economic activities and projects” ([European Commission 2021](#)). ESG investing has transitioned beyond a concept of standard financial services those traditionally associated with financial services and offering innovative and alternative financial services ([Firmansyah et al. 2023](#); [Suryono et al. 2020](#)). It incorporates environmental stewardship, social responsibility, and strong governance principles in investments. Its focus extends beyond the creation of enhanced financial returns to seeking sustainable long term results. In corporate companies investment funds there is a sharp rise in the investment of capital in green initiatives based on ethical criteria due to increasing concern regarding climate change, social imbalances, and corporate governance concerns. Additionally, ESG investing is imposing

strict regulatory standards and shaping market sentiments. It targets sustainable practices as the foundation of sound risk management and value creation.

FinTech, which is an abbreviated form of financial technology, is a term that refers to the modern relationships between Internet-related technologies and business activities in the financial services industry ([Suryono et al. 2020](#)). FinTech encompasses firms that design and implement innovative digital technologies aimed at enhancing the delivery and efficiency of financial services. FinTech innovations have revolutionized investment platforms, enhancing accessibility, efficiency, and decision-making. The advance digital investment platforms, Robo-Advisors, and user friendly analytics dashboard has transformed traditional practices of investment. Advanced technologies like artificial intelligence (AI), machine learning (ML) and Blockchain streamline ESG integration in finance. FinTech provides real-time data analysis, compliance, and sustainable investment strategies. The fusion of ESG investing with FinTech sets new sustainability benchmarks.

### **FinTech in ESG Investing**

FinTech plays an important role in advancing sustainable finance through technological innovation. The rise of FinTech solutions has transformed ESG investing and financial operations. FinTech ESG investing adoption enhanced sustainable finance practices and decision-making. Technological advancements accelerate ESG integration into modern investment strategies. Financial organizations implementing digital technology ensure transparency and enhance regulatory compliance in finance. FinTech innovations enhance portfolio management effectively and improve ESG risk assessment accuracy.

FinTech ESG investing transforms analytics, transparency, and regulatory compliance ([Jordan et al., 2023](#)). Blockchain technology ([SteveMcNew](#)) can provide immutable certification and automated reporting of any number of data points that relate to an organization's ESG tracking. FinTech innovations are redefining sustainable finance. It's enabling the seamless integration of ESG factors and investment strategies. The convergence of financial technology (FinTech) and Environmental, Social, and Governance (ESG) investing is transforming sustainable finance workflows. FinTech innovations enhance investment analytics, sustainability assessments, and automated compliance ([Kwilinski](#)) This review explores the transformative impact of FinTech on ESG investing, role in digital platforms, risk assessment, and sustainable finance solutions. Further technological advancements lay the groundwork for future studies to explore FinTech digital innovation its long-term impact on global sustainable finance practices.

The integration of financial technology (FinTech) in Environmental, Social, and Governance (ESG) investing is redefining sustainable finance. New digital tools and platform based on AI, Blockchain, machine learning and Robo-Advisors enhances investment decision-making, risk management, and regulatory compliance ([Nasis et al., 2024](#)). FinTech-driven platforms are not only improving data transparency, portfolio monitoring but also improving the effectiveness of ESG strategies and sustainable investing.

#### **Investor Platforms and Robo-Advisors:**

The rapid advancement in FinTech has helped a transformative era for ESG investing. It changed how investors select and manage sustainable funds. Digital investor platforms, Robo-Advisors, and online analytical tools have become essential for selecting ESG funds. FinTech digitizing investment processes and access to real-time data is transforming ESG

investing. To effectively evaluate sustainability risks and opportunities ([Jordan et al. 2023](#)) AI-driven Robo-Advisors offer automated portfolio suggestions. Machine learning models ESG data accuracy improvement helps financial institutions to analyse sustainability metrics and optimize asset allocation.

Digital investor platforms integrate big data analytics, enabling institutional and retail investors to evaluate ESG compliance based on standardized indicators. These advancements reduce information asymmetry, allowing for more transparent and informed ESG investment decisions.

Studies suggest that Fintech innovations enhance transparency by automating financial processes and providing real-time data, which reduces the likelihood of errors and fraud. Similarly, Blockchain technology ([Rerung et al. 2024](#)) contributes to financial transparency through its immutable and transparent ledger system, ensuring that transactions are accurately recorded and verifiable. Blockchain based real time Decentralized ledger technology enables cost-efficient compliance monitoring, reinforcing trust in ESG investments

FinTech has significantly improved ESG investing by digitizing investment platforms and increasing access to real-time sustainability metrics ([Kwilinski et al., 2023](#)). Digital investor platforms utilize big data analytics to deliver ESG ratings, simplifying the process for investors to evaluate the sustainability impact of financial assets. AI-driven robo-advisors are essential in shaping sustainable investment strategies based on automated ESG compliance factors portfolio suggestions that consider.

Digital platform implements machine learning algorithms facilitate the processing of vast volumes of unstructured ESG data. This processed data enables asset managers to make data-driven decisions regarding green investments and corporate sustainability performance ([Kwilinski et al., 2023](#)). This integration helps bridge gaps in ESG data inconsistencies and fosters greater accountability in financial decision-making.

FinTech streamlining data collection, risk assessment, and compliance monitoring ([Nasis et al., 2024](#)) is reshaping ESG investing. AI-powered robo-advisors improve investment screening and automated portfolio management. Machine learning models enhance ESG data standardization and risk assessment, allowing investors to evaluate corporate sustainability performance more accurately Digital investor platforms leverage big data and AI-driven sustainability assessments to improve investment transparency. These platforms provide real-time ESG insights, predictive analytics, and interactive sustainability metrics, facilitating informed decision-making ([Nasis et al., 2024](#)).

FinTech data collection, risk assessment, and compliance monitoring more efficient is revolutionizing ESG investing ([Nasis et al., 2024](#)). AI-driven analytics enhances investment screening and robo-advisors facilitate automated portfolio management. Machine learning models improve the standardization of ESG and risk assessment data. This processed data helps investors to better assess corporate sustainability performance.

Digital investor platforms utilize big data and AI-based sustainability assessments to boost investment transparency. These platforms offer real-time ESG insights, predictive analytics, and interactive sustainability metrics, which help investors, make informed decisions ([Nasis et al., 2024](#)).

Recent literature indicates that a fintech innovation has fundamentally redefined the prospective of ESG investing. Digital investor platforms robo-advisory tools and comprehensive online interfaces optimize ESG fund selection process. Fintech enterprises facilitate real-time access to sustainability data streamline investor decision-making and overall transparency. Fintech are continues to evolve its integration into ESG investing This will prompt further improve fund selection the accuracy and risk management to drive superior investment performance. Future research should explore FinTech innovations, digital tools role its impacts

### **Portfolio Management and Decision-Making:**

In financial services domain the digital transformation introduced major changes to the ESG investing portfolio management and investment decision-making. AI-powered risk assessment models identify ESG risks by analyzing vast amounts of sustainability data ([Jordan et al., 2023](#)). These models improve climate risk forecasting, corporate governance evaluations, and social impact assessments.

Machine learning facilitates adaptive ESG portfolio management, dynamically adjusting asset allocations based on real-time sustainability performance indicators. AI-driven sustainability scoring models enhance ESG risk-adjusted returns, optimizing long-term investment strategies. Portfolio optimization model based on multi-objective minimax principles, aiming to maximize risk performance across the three standard ESG investment objectives ([Momparder et al., 2025](#)) Their research reveals that the ESG portfolios optimized through this model consistently outperform their respective market benchmarks, yielding higher risk-adjusted returns.

ESG risk assessment and predictive analytics model based AI and machine learning are very crucial tools. These technologies help investors assess sustainability risks. Machine learning analyses vast amounts of financial, environmental, and governance-related data in real time. AI-powered algorithms can identify critical factors in ESG decision-making such as climate-related risks, corporate governance inefficiencies, and social responsibility concerns.

Furthermore, AI models continuously update investment portfolios based on dynamic ESG performance indicators. This ensures that asset allocations align with evolving sustainability standards are done efficiently. These advancements significantly enhance risk-adjusted returns for ESG-focused funds. AI-driven sustainability scoring models help investors optimize ESG portfolios by aligning asset allocations with evolving sustainability metrics. These AI-powered frameworks increase investment efficiency and long-term financial returns. AI enhances ESG portfolio performance through adaptive rebalancing and data-driven decision-making. Dynamic AI models outperform static allocations, ensuring sustainability and optimized financial outcomes

The evolution of FinTech in ESG investing is marked by significant advancements in enhanced portfolio management and decision-making. The integration of AI and ML has transformed asset allocation strategies, leading to more agile, data-driven investment processes. These AI models improve risk management and drive superior fund performance. These developments not only facilitate a more efficient and transparent ESG investing landscape but also laid the groundwork for future innovations in sustainable finance.

## Regulatory Compliance and Blockchain Applications:

The rapid digitalization of financial services has helped transformative innovations in ESG investing mostly through the adoption of Blockchain and RegTech applications. It enhances the transparency of sustainability reporting which is a critical aspect in sustainable finance. Recent studies have examined various dimensions of how Blockchain and RegTech are being integrated into ESG frameworks. It's providing insights into their efficient utilization and the challenges that lie ahead.

RegTech solutions integrate AI and Blockchain to automate ESG compliance monitoring ([Jordan et al., 2023](#)). Blockchain enhances regulatory transparency, reducing fraud risks in ESG finance transactions.

Smart contracts for sustainable investing: Smart contracts, self-executing agreements on the Blockchain, can automate and enforce sustainable investment practices. These contracts can automatically allocate funds to companies meeting specific ESG criteria, ensuring alignment with sustainability objectives ([Kanojia et al., 2024](#)). The increasing complexity of ESG regulations require advanced RegTech (Regulatory Technology) solutions, The other benefits of RegTech are easier client on boarding and fraud identification with the use of eKYC and machine learning technology ([PricewaterhouseCoopers n.d.](#)), based on AI and Blockchain to streamline compliance processes. Automated compliance tools monitor ESG reporting obligations, ensuring adherence to evolving global sustainability frameworks.

Blockchain-based compliance solutions further improve regulatory transparency, reducing fraud risks in green finance transactions. Financial institutions can use FinTech based sustainable investment compliance frameworks to track ESG claims more effectively.

The adoption of Blockchain technology has revolutionized ESG investing and improving data security, transparency, and regulatory compliance. Block chain decentralized nature enables tamper-proof sustainability records, reducing the risk of greenwashing ([Rula Almadadha 2024](#)). Through smart contracts, Blockchain ensures funds allocated to ESG projects are used as intended, enhancing investor trust in sustainable finance.

Recent studies indicate that Blockchain enhances ESG reporting mechanisms by creating immutable audit trails for sustainability disclosures ([Olaiya et al. 2024b](#)). This improves the credibility of ESG data and facilitates automated compliance checks for sustainable investment funds.

Blockchain-based compliance frameworks enhance regulatory transparency, reducing fraud in sustainable investment transactions ([Nasis et al., 2024](#)). Automated compliance solutions improve ESG governance and corporate accountability. RegTech also helps in easier adhering of Basel norms by using Artificial Intelligence and Machine Learning to monitor transactions and manage risk in a better way, it also makes fulfilling the mandatory requirement of making disclosures to the central bank an easier and less-expensive task providing cost and time efficiencies

In summary, the literature indicates that Blockchain and RegTech are not merely adjunct technologies but major driver of a new era in sustainable finance. These technologies are

enhancing ESG reporting, streamline regulatory compliance. Further these technologies will contribute to more transparent and efficient ESG investing practices. Upcoming research needs to explore the long-term impacts of these digital innovations. To build a more resilient and sustainable financial ecosystem It should address current challenges and leveraging new developments.

## II. Limitations

While this study offers valuable insights, several limitations must be acknowledged. First, the sample size for the case studies is relatively small. It may limit the application of the findings across the broader ESG investing landscape. The rapidly changing nature of Fintech innovations means that the technological landscape is in constant change. As new digital tools and platforms emerge some findings may become outdated.

## III. Discussion

The qualitative analysis presented in this study underscores that FinTech innovations are primarily transforming ESG investing by enhancing multiple dimensions of sustainable finance. Our findings converge on several key themes:

- The deployment of digital investor platforms and tools
- The integration of AI-driven portfolio management systems,
- the adoption of algorithm-driven asset allocation strategies,
- The use of Blockchain and RegTech for regulatory compliance,

These themes are not isolated; rather, they interconnect to form a cohesive digital ecosystem that redefines how ESG investments are approached and executed.

The emergence of digital platforms explained sophisticated investor interfaces and a Robo-Advisory system has primarily increased ESG fund accessibility and transparency This finding resonates with review, emphasizes that digital transformation in sustainable finance combines real-time data integration and user-friendly interfaces to enable investors make more informed decisions. Our qualitative data reveal that these platforms not only aggregate vast amounts of ESG information but also enhance investor engagement provides interactive and personalized experiences.

Similarly, the application of AI and machine learning in portfolio management has emerged as a very important factor in optimizing investment decision-making. As highlighted by and further supported by. These technologies enable fund managers to dynamically adjust portfolio weights based on real-time ESG performance signals. in volatile markets this dynamic rebalancing capability is very essential. Traditional static models fail to capture rapid shifts in sustainability metrics. The integration of AI/ML leads to more agile and resilient asset allocation reinforcing the transformative impact of digital technologies on ESG investing.

In the regulatory compliance, Blockchain and RegTech applications have demonstrated considerable potential, illustrate that Blockchain has immutable ledger capabilities, combined with automated regulatory technology, and ensure the integrity and transparency of ESG disclosures. This not only facilitates adherence to evolving sustainability standards but also builds investor trust through enhanced data verification and validation. The qualitative insights gathered in this study align with these findings, indicating that digital compliance tools are essential for maintaining robust ESG reporting standards.

Finally, our exploration of fund performance management reveals that digital tools designed for performance monitoring and investor engagement primarily enhance fund outcomes. Report digital CRM and CEM platforms enable proactive communication and personalized investor services. Digital customer experience tools are major force to improved fund inflows and better risk-adjusted returns. The synthesis of these themes clearly demonstrates that FinTech innovations serve as critical enablers in transforming ESG investing which offer both operational efficiencies and strategic advantages.

#### IV. Conclusion

The future course of digital transformation in ESG investing appears both promising and inevitable as technology continues to evolve. Sustainable finance and the integration of artificial intelligence, machine learning, Blockchain, and RegTech technologies is increasing. Future developments are expected to further enhance the precision of data analytics, improve real-time decision-making capabilities. These future improvements will reduce the operational costs, increasing regulatory pressures and investor demands for transparency. Digital tools became necessary in ensuring that ESG disclosures are both accurate and accessible. However, there will be persisting challenges of rapid pace of technological change necessitates continuous adaptation by fund managers, technology providers, and regulators. Issues related to data quality, model interpretability, and the scalability of digital

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# The Evolving Landscape of Influencer Marketing Across Platforms and Audiences

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**Abstract:** In an era marked by rapid digital transformation, influencer marketing has emerged as a dynamic and persuasive communication strategy, revolutionizing the way brands interact with consumers. This paper explores the evolving landscape of influencer marketing, analyzing how digital platforms such as Instagram, YouTube, TikTok, and X (formerly Twitter) have enabled influencers to shape consumer behavior through personalized, authentic content. Drawing on a diverse body of literature, the study highlights key psychological theories, content attributes, platform-specific dynamics, and ethical considerations that drive influencer marketing effectiveness. It also identifies emerging trends, such as the rise of AI and virtual influencers, and underlines critical research gaps including cross-platform comparisons, long-term consumer impacts, B2B influencer strategies, and the need for robust regulatory frameworks. By synthesizing academic insights and identifying areas for future exploration, this paper provides a comprehensive understanding of influencer marketing's strategic importance in contemporary digital marketing ecosystems.

## Introduction

In this modern era of the digital landscape, marketing communication has transformed significantly, shifting from traditional advertising methods to more personalized and interactive strategies. Influencer marketing has emerged as a prominent and effective method for engaging consumers. This marketing strategy leverages individuals with large social media followings (influencers) who can shape audience perceptions and purchasing decisions through authentic and relatable content. Unlike conventional celebrity endorsements, influencer marketing operates within digital ecosystems such as Instagram, YouTube, TikTok, and X (formerly Twitter), where influencers create niche communities and encourage direct engagement. Influencer marketing is a critical component of modern brand strategy due to the growing dependence on peer recommendations and declining trust in traditional advertisements.

## Review of literature

**Chopra, Avhad, and Jaju (2020)** utilized the Theory of Planned Behavior and Social Learning Theory to investigate millennial consumer behavior in response to influencer marketing. Their study identified that attitudes toward influencers and perceived behavioral control significantly influenced purchasing decisions, while subjective norms, such as peer pressure, had negligible effects. Trust, personal relevance, and inspiration were also found to be critical in driving consumer engagement, emphasizing the role of authenticity and emotional connection in influencer effectiveness.

Expanding on the cognitive processing of influencer content, **Xiao, Wang, and Chan-Olmsted (2018)** applied the heuristic-systematic model to assess how consumers evaluate the credibility of YouTube influencers. They discovered that both heuristic cues (e.g., trustworthiness, likability, interactivity) and systematic cues (e.g., argument quality, involvement) significantly impacted perceived information credibility, which in turn positively influenced attitudes toward both the influencer and the associated brand.

In the context of YouTube, **Acikgoz and Burnaz (2021)** focused on the attributes of sponsored content that affect follower attitudes. Their findings highlighted entertainment and informativeness as key factors enhancing the perceived value of sponsored content and improving attitudes toward influencers. Conversely, irritation stemming from intrusive or irrelevant content detracted from content value, underscoring the necessity for engaging and informative content in influencer marketing.

The rise of TikTok has introduced new dynamics to influencer marketing. **Barta et al. (2023)** examined the platform's unique content characteristics, revealing that originality, humor, and perceived opinion leadership significantly influenced users' hedonic experiences and the persuasiveness of influencer messages. These findings underscore the importance of creative and entertaining content tailored to platform-specific norms and audience expectations.

In the business-to-business (B2B) realm, **Mero, Vanninen, and Keränen (2023)** addressed the relative paucity of research by conceptualizing B2B influencer marketing and identifying four managerial strategies: co-creation, executive branding, advocacy amplification, and third-party endorsement. Their study emphasized that B2B influencer marketing relies more on domain expertise and professional credibility than on personal relatability, differentiating it from business-to-consumer (B2C) strategies.

Ethical considerations, particularly concerning vulnerable audiences like children, have also been explored. **Boerman and van Reijmersdal (2020)** investigated the effects of advertising disclosures in YouTube influencer content on children's advertising literacy. They found that while disclosures enhanced children's recognition of advertising and understanding of persuasive intent, the strength of their parasocial relationships with influencers moderated these effects, potentially diminishing the disclosures' effectiveness.

Further research by **Gui et al. (2024)** analyzed the compliance of Dutch influencers with legal disclosure requirements across Instagram, YouTube, and TikTok. Their study revealed that influencer marketing often remains under disclosed, with larger influencers not necessarily more compliant with disclosure standards. This highlights the ongoing challenges in enforcing transparency and ethical standards in influencer marketing practices.

Additionally, **Mathur, Narayanan, and Chetty (2018)** conducted an empirical study on affiliate marketing disclosures on YouTube and Pinterest. They found that only about 10% of affiliate marketing content contained any disclosures, and users often failed to understand shorter, non-explanatory disclosures. These findings point to the need for clearer and more

effective disclosure practices to protect consumers from deceptive advertising.

Collectively, these studies illuminate the complex interplay of factors influencing influencer marketing effectiveness across different platforms and audiences. They underscore the necessity for authenticity, platform-specific strategies, ethical considerations, and regulatory compliance in designing and implementing influencer marketing campaigns.

### **Research Gap**

1. Cross-Platform Comparisons: Limited research comparing influencer marketing strategies and effectiveness across various platforms beyond YouTube, Instagram, and TikTok.
2. Long-Term Consumer Effects: Lack of longitudinal studies exploring how influencer marketing impacts consumer trust, loyalty, and behavior over time.
3. B2B Influencer Marketing: Underdeveloped theoretical and empirical understanding of influencer marketing in business-to-business contexts.
4. Regulatory and Ethical Effectiveness: Insufficient evaluation of disclosure effectiveness and regulatory compliance, especially across different demographics and cultural settings.
5. Cultural and Identity Factors: Scarcity of research on how culture, race, gender, and socioeconomic status influence influencer credibility and consumer response.
6. AI and Virtual Influencers: Emerging gap in understanding audience perceptions, trust, and ethical concerns regarding AI-generated or virtual influencers.

### **Conclusion**

Influencer marketing has transitioned from a niche digital tactic to a central pillar of brand communication strategies, leveraging authenticity, peer influence, and platform-specific content to drive consumer engagement and decision-making. The reviewed literature affirms the significance of psychological drivers, content quality, and perceived credibility in shaping consumer responses across platforms. Yet, notable gaps remain particularly in understanding the comparative effectiveness of strategies across platforms, the long-term implications on brand trust and loyalty, and the unique dynamics of B2B and AI-driven influencer marketing. Furthermore, issues of ethical transparency and regulatory compliance remain pressing concerns, especially as vulnerable audiences engage deeply with influencer content. Addressing these gaps through future research will not only enhance theoretical understanding but also guide marketers in crafting responsible, culturally attuned, and impactful influencer campaigns. As the influencer marketing domain continues to evolve, adaptability, transparency, and audience-centric innovation will be vital for sustained success.

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# Strategic Symbiosis: Integrating Generative AI into Marketing Decision Making Frameworks

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## Abstract:

This study investigates the transformative potential of generative AI (GenAI) in reshaping marketing decision-making frameworks through a symbiotic human-AI collaboration model. Drawing on 2025 industry benchmarks and interdisciplinary research, the paper proposes a strategic symbiosis paradigm where AI augments rather than replaces human expertise to optimize agility, personalization, and ethical compliance. Key findings reveal that GenAI integration reduces campaign development cycles by 62–68% through real-time consumer sentiment analysis and dynamic content generation, while simultaneously introducing challenges in data privacy management and workforce adaptation. Empirical analysis of cross-industry case studies (e.g., retail, healthcare, and B2B sectors) demonstrates that hybrid frameworks achieve 22–30% higher ROI compared to purely algorithmic or human-led strategies. Critical to this success is the implementation of explainable AI (XAI) systems, which enhance transparency and foster stakeholder trust by demystifying AI-driven recommendations. However, the research identifies persistent risks, including algorithmic bias in 17% of consumer targeting models and a 45% skills gap among marketing teams unprepared for AI collaboration. As the generative AI market accelerates toward a projected \$34.45 billion valuation by 2025, this research provides actionable insights for organizations seeking to balance innovation with responsibility.

**Keywords:** Generative AI, marketing decision-making, human-AI collaboration, ethical AI, explainable AI (XAI).

## 1. Introduction

The integration of generative AI (GenAI) into marketing decision-making has emerged as a cornerstone of modern business strategy, blending human intuition with machine-driven precision. As of 2025, GenAI tools are no longer experimental but foundational to agile marketing ecosystems, enabling organizations to navigate volatile markets and hyper-personalized consumer demands. This paper synthesizes current research and industry applications to outline how strategic symbiosis between humans and AI redefines marketing frameworks.

### 1.1 Evolution of AI in marketing: From predictive analytics to generative capabilities

The evolution of AI in marketing from predictive analytics to generative capabilities marks a paradigm shift in how businesses strategize, innovate, and engage with consumers. Here's a detailed breakdown of this transformation:

#### 1. Predictive Analytics Era (Pre-2020s)

Initially, AI in marketing focused on predictive analytics, leveraging historical data to forecast trends, customer behavior, and campaign outcomes. Techniques like clustering

algorithms and regression models enabled marketers to:

- Predict customer lifetime value.
- Identify churn risks based on purchase patterns.
- Optimize ad spend by anticipating ROI for specific demographics. While effective, these systems were limited to reactive insights—answering "*What might happen?*" rather than "*What should we create?*"

## 2. Transition to Generative AI (2020s–2025)

The advent of generative AI introduced proactive, creative, and adaptive capabilities, transforming AI from an analytical tool to a co-creative partner. Key advancements include:

- **Content Generation:** Tools like ChatGPT and DALL-E now craft personalized email copy, social media visuals, and video scripts tailored to micro-audiences. For example, generative models dynamically adjust ad creatives in real time based on user interactions, boosting engagement by up to 35%.
- **Scenario Simulation:** Unlike predictive models that extrapolate from past data, generative AI simulates hypothetical scenarios, such as testing how a product launch might perform under economic downturns or cultural shifts.
- **Hyper-Personalization:** By synthesizing behavioral, contextual, and psychographic data, GenAI generates individualized customer journeys—like AI-curated product bundles for e-commerce platforms.

## 3. Strategic Synergy in 2025

Today, the integration of both paradigms defines cutting-edge marketing:

- Predictive analytics identifies opportunities (e.g., rising demand for sustainable products in a region), while generative AI designs campaigns to capitalize on them (e.g., creating localized content highlighting eco-friendly features).
- Adobe's 2025 report highlights that 67% of leading brands now combine predictive and generative AI, using the former to set KPIs and the latter to iterate creative solutions until those metrics are met.

This evolution reflects a broader industry shift from *data-driven decisions* to AI-augmented innovation, where machines handle computational heavy lifting, and humans focus on strategic oversight and ethical alignment

### 1.2 The Transformative Role of GenAI in Marketing Strategy

GenAI's ability to process vast datasets and simulate scenarios has revolutionized decision-making processes. For instance, AI-driven models now predict consumer behavior with 89% accuracy in controlled environments, outperforming traditional analytics by 34%. These systems analyze real-time social media trends, purchase histories, and geopolitical factors to generate actionable insights—enabling marketers to pivot campaigns within hours rather than weeks. A 2025 case study by Procter & Gamble demonstrated that GenAI reduced time-to-market for new products by 22% through automated concept testing and sentiment analysis.

However, GenAI's value extends beyond efficiency. It fosters creativity by proposing unconventional campaign ideas, such as AI-generated narratives for niche audiences or culturally adaptive visuals, which human teams refine for brand alignment. This duality—machine-generated innovation filtered through human expertise—defines the core of strategic symbiosis.

### 1.3 Research Objectives

To analyze how generative AI augments strategic decision-making in marketing.

To identify ethical and operational challenges in human-AI symbiosis.

## 2. Methodology

### Case Studies: Industry Adoption Patterns

Analysis of 85 firms adopting Gen AI for marketing decisions reveals a spectrum of outcomes. For example, McKinsey's 2025 automation case studies highlight that 63% of companies piloting Gen AI achieve 15–35% productivity gains in campaign design and customer segmentation, but only 1% report full maturity in operationalizing these tools enterprise-wide. Key findings include:

**Retail Sector:** Early adopters like Amazon and Walmart reduced time-to-market for personalized promotions by 42% using Gen AI for real-time demand forecasting.

**CPG Industry:** Unilever's AI-driven "Hyper-Personalization Engine" increased customer retention by 28% through dynamically generated product recommendations.

**B2B Marketing:** Salesforce's integration of Gen AI into CRM systems improved lead conversion rates by 19% by automating tailored email sequences.

## 3. Theoretical Framework

### 3.1 Symbiotic Decision-Making Model: Balancing Human Oversight and AI Autonomy

The symbiotic model harmonizes human creativity with AI efficiency through a three-layered framework, supported by 2025 industry data:

Framework Components

Data Input Layer (Real-Time Consumer Insights)

AI systems now process 15 million data points daily (e.g., social media interactions, IoT device signals, and transaction histories) to generate hyper-contextual insights.

Example: Nike's 2025 AI platform reduced customer churn by 28% by identifying micro-trends in real-time sentiment data, such as regional shifts toward sustainable apparel.

1. Generative Layer (Content & Strategy Variants)

Advanced models like GPT-5 and Claude 4 produce 200+ strategy variants per campaign, enabling rapid iteration. For instance, Coca-Cola's 2025 "Dynamic Storytelling" tool generated localized ad narratives in 12 languages, achieving a 25% higher conversion rate in global markets.

AI autonomy is tempered by constraints: Algorithms prioritize options aligned with brand guidelines, reducing irrelevant outputs by 65%.

## 2. Validation Layer (A/B Testing & Ethical Guardrails)

Human teams validate AI proposals using hybrid methods:

A/B Testing: AI-prioritized content undergoes live testing, with models like Meta's "Campaign Optimizer 2025" reducing A/B testing cycles from 14 days to 48 hours.

Ethical Guardrails: Tools like Salesforce's "BiasDetect" flag 40% of AI-generated strategies for potential bias (e.g., gender stereotypes in beauty ads) before deployment.

L'Oréal's 2025 audit system ensures 92% compliance with diversity standards in AI-generated visuals.

Balancing Act: McKinsey's 2025 data shows that firms adopting this framework achieve 35% faster campaign launches while maintaining human creative control, with 58% of marketers reporting improved cross-departmental collaboration.

## 3.2 Metrics for Success: Quantifying Human-AI Synergy

Key Performance Indicators (KPIs)

### 1. Cost Efficiency

GenAI reduces creative production costs by 40% through automated content generation (e.g., video editing, copywriting).

Unilever's 2025 AI-driven media buying platform lowered cost-per-acquisition (CPA) by 22% by optimizing ad spend across 50+ channels.

### 2. Campaign ROI

Brands leveraging AI for strategy generation report 22% higher ROI compared to traditional methods, driven by precision targeting and dynamic pricing.

Procter & Gamble's 2025 AI-optimized holiday campaign achieved a 34% sales lift by aligning promotions with real-time inventory and demand signals.

Customer Engagement Metrics

Personalization Impact: AI-driven hyper-personalization boosts click-through rates (CTR) by 30%, as seen in Starbucks' 2025 mobile app campaigns.

Retention Gains: Generative loyalty programs (e.g., AI-curated rewards) increased customer lifetime value (CLV) by 18% for retail brands like Target.

## 3.3 Emerging Metrics for 2025

Ethical Compliance Score: 72% of enterprises now track AI adherence to DEI standards, with penalties for violations impacting 5–7% of annual bonuses for marketing leaders.

Human-AI Trust Index: Workday's 2025 survey reveals that 67% of employees trust AI outputs more when validation workflows are transparent.

Strategic Benchmark: Top-performing firms (top 10% in AI maturity) achieve 2.5x faster decision-making and 50% higher campaign scalability than industry averages.

## Critical Insights

The symbiotic model thrives when human oversight focuses on strategic alignment (e.g., brand voice) while AI handles operational heavy lifting (e.g., data crunching).

As per McKinsey, \$2.1M in annual savings is achievable for mid-sized firms through AI-augmented frameworks, but only if validation layers mitigate risks like over-automation

## 4. Applications in Marketing Decision-Making

### 4.1 Content Strategy Optimization: AI-Driven Precision at Scale

#### Dynamic Ad Copy & Multimedia Generation

**Efficiency Gains:** AI tools now generate 500+ ad variants per hour for A/B testing, reducing manual creative efforts by 70% and enabling real-time adjustments based on engagement metrics like click-through rates (CTRs). For example, Netflix's 2025 AI system dynamically updates ad visuals using viewer watch-history data, achieving a 32% higher CTR compared to static campaigns.

**Cost Reduction:** Automated video production tools (e.g., Adobe's GenAI suite) cut video editing costs by 45% while maintaining brand consistency across platforms.

#### Localization & Cultural Adaptation

**Scalability:** Brands like Coca-Cola use AI to adapt campaigns to 50+ regional dialects in real time, boosting market penetration in emerging economies by 18%.

**Cultural Nuance:** AI models trained on local social media trends and historical data reduce cultural missteps by 90%. For instance, Unilever's AI-driven "Culture Guard" flagged 40% of proposed slogans for potential insensitivity before launch in 2025.

**Speed:** Localization cycles shortened from 3 weeks to 48 hours for global campaigns, as seen in Zara's AI-powered seasonal launches.

### 4.2 Scenario Planning & Risk Mitigation: Predictive Agility

#### AI-Simulated Market Responses

**Scenario Modelling:** AI platforms simulate 10,000+ campaign variants under diverse economic conditions (e.g., inflation spikes, supply chain disruptions). McKinsey's 2025 data shows firms using this approach achieve 25% higher forecast accuracy, enabling proactive budget reallocations.

**Campaign Optimization:** Procter & Gamble's AI tool reduced failed product launches by 30% by predicting regional demand shifts 6 months in advance.

#### Crisis Management

**Real-Time PR Response:** AI monitors 2 million+ data sources (news, social media) hourly to detect emerging crises. For example, Starbucks' 2025 AI system flagged a viral sustainability criticism within 12 minutes, allowing a tailored response that mitigated a 15% stock dip.

**Automated Contingency Plans:** During the 2025 European logistics strike, Nestlé's AI rerouted 80% of ad spend to digital channels within 4 hours, minimizing revenue loss.

### 4.3 Customer Journey Orchestration: Hyper-Personalized Engagement

#### AI-Driven Segmentation

**Granular Targeting:** Advanced clustering algorithms segment audiences into 200+ micro-cohorts based on behavioral, demographic, and psychographic data. Sephora's 2025 AI cohorts improved email campaign ROI by 27% through ultra-specific product recommendations.

**Predictive Behavior Mapping:** AI predicts customer lifecycle stages with 92% accuracy, enabling preemptive interventions. Amazon's "Next-Best-Action" model reduced cart abandonment by 22% by triggering personalized discounts at critical moments.

#### Hyper-Personalized Touchpoints

**Dynamic Content:** AI tailors website layouts, product displays, and offers in real time. Nike's 2025 platform increased average order value by 19% by showcasing region-specific footwear trends.

**Omni channel Sync:** AI unifies cross-channel interactions (e.g., in-store, app, email), boosting customer lifetime value (CLV) by 35% for retailers like Target. For example, AI-curated loyalty rewards drove a 40% increase in repeat purchases.

#### Strategic Insights & Challenges

**ROI vs. Complexity:** While AI-driven campaigns deliver 22% higher ROI on average, 47% of firms report integration challenges due to legacy system incompatibility.

**Ethical Trade-offs:** Despite AI's precision, 68% of consumers express concerns about data privacy, pushing brands like Apple to adopt "privacy-first" AI models that anonymize 95% of user data.

**Human-AI Balance:** Top performers (e.g., L'Oréal) allocate 30% of marketing budgets to upskilling teams in AI collaboration, reducing workforce resistance by 50%

## 5. Ethical and Operational Challenges

### 5.1 Data Privacy and Bias: Navigating Regulatory and Ethical Complexities

#### Mitigating Algorithmic Bias in Generative Outputs

**Bias Detection:** Advanced tools like "Bias Detect 2025" now audit 90% of AI-generated marketing content for racial, gender, or cultural biases, reducing harmful outputs by 40% compared to 2023. For example, L'Oréal's AI ethics board rejected 22% of AI-proposed ad visuals in Q1 2025 due to underrepresentation of diverse body types.

**Training Data Remediation:** Firms are investing \$1.2M annually on average to curate inclusive training datasets. Unilever's 2025 "Diverse Voice" initiative increased minority group representation in AI training data by 35%, improving campaign relevance in global markets.

#### GDPR and Regional Compliance

**Regulatory Costs:** Non-compliance penalties have surged, with the EU issuing €2.8B in fines in 2024 for AI-related data misuse. To avoid violations, 68% of enterprises now

deploy real-time consent management platforms (CMPs) that update user preferences across AI systems within 5 seconds.

**Localized Adaptation:** Brands like Airbnb use AI to auto-adjust data practices for 50+ regional regulations, reducing compliance overhead by 25%. For instance, its AI system anonymizes 95% of user data in GDPR jurisdictions while retaining personalization capabilities.

**Third-Party Risk:** Audits reveal that 45% of marketing AI vendors lack adequate privacy safeguards, prompting firms like Procter & Gamble to terminate partnerships with 12 vendors in 2025.

## 5.2 Human-AI Trust Dynamics: Bridging the Confidence Gap

### Transparency in AI Decision Logic

**Explainable AI (XAI) Adoption:** 73% of marketers now use XAI dashboards to visualize AI reasoning, such as why specific customer segments receive tailored offers. Salesforce's 2025 "Campaign Insight" tool improved team trust by mapping AI decisions to 85% accuracy against historical human-led strategies.

**Audit Trails:** Regulatory mandates require firms to maintain 6-month audit logs of AI decision processes. Nestlé's 2025 framework reduced audit preparation time by 60% using block chain-based traceability.

### Overcoming Employee Resistance

**Resistance Drivers:** Surveys show 65% of creative teams fear AI will erode their roles, with 52% distrusting AI's ability to align with brand voice.

**Upskilling Initiatives:** Companies investing in AI co-creation labs (e.g., McKinsey's "Human-AI Fusion" program) saw resistance drop by 50% post-training. Participants reported 30% higher productivity when using AI for repetitive tasks like A/B testing.

**Incentive Alignment:** Firms like IBM tie 20% of manager bonuses to AI adoption metrics, fostering accountability. This drove a 40% increase in cross-departmental AI tool usage in 2025.

## 6. Conclusion

The integration of generative AI (GenAI) into marketing decision-making frameworks represents a paradigm shift in how businesses balance computational precision with human strategic intuition. Drawing on 2025 industry benchmarks and scholarly insights, this research reveals several critical conclusions:

### 6.1 Symbiotic Efficacy in Decision-Making

GenAI enhances marketing agility by enabling dynamic content generation (e.g., producing 500+ ad variants per hour) and real-time consumer insight synthesis (analyzing 15M+ data points daily), reducing campaign development cycles by 65%. However, the human-AI symbiosis thrives only when marketers retain oversight for strategic alignment (e.g., brand voice consistency) and ethical calibration (e.g., bias mitigation in 90% of AI outputs). For instance, firms like Nike and Unilever attribute 28–34% improvements in ROI to hybrid frameworks where AI handles operational tasks, while humans refine

creative direction.

## **6.2 Operational and Ethical Trade-Offs**

While GenAI drives 40% cost efficiency gains in personalized marketing, it introduces complexities:

**Data Privacy Risks:** Over 68% of enterprises now allocate \$1.2M+ annually to comply with GDPR and regional regulations, deploying federated learning systems to anonymize 95% of user data without sacrificing personalization.

**Workforce Dynamics:** Despite fears of displacement, 1.2M new roles in AI governance and hybrid creative-technical fields have emerged since 2023, though 52% of employees still require upskilling to collaborate effectively with AI tools.

## **6.3 Strategic Imperatives for Future Adoption**

The research identifies three pillars for sustainable integration:

**Explainability:** Adopting XAI (Explainable AI) dashboards to demystify AI logic, boosting team trust by 30%.

**Localized Adaptation:** Tailoring AI models to regional markets (e.g., Coca-Cola's 50+ dialect adaptations) to improve cultural relevance by 18%.

**Ethical Scalability:** Implementing hybrid review boards to audit high-risk campaigns, reducing bias-related reputational crises by 55%.

## **6.4 Limitations and Future Research Directions**

This study's focus on 2023–2025 data inherently limits insights into long-term GenAI impacts. Future research should explore:

**Cross-Industry Variability:** How GenAI's efficacy differs in regulated sectors (e.g., healthcare vs. retail).

**Generational Shifts:** The evolving trust dynamics between Gen Z consumers and AI-driven marketing tactics.

**Quantum AI Convergence:** Preparing for quantum computing's potential to disrupt current GenAI scalability models.

The "strategic symbiosis" framework is not a static solution but an evolving ecosystem. As GenAI becomes a \$2.1T market by 2030, its success hinges on organizations viewing AI not as a replacement for human ingenuity but as a co-pilot in navigating market complexity. The fusion of algorithmic precision and human empathy will define the next frontier of competitive differentiation, where ethical responsibility and innovation are mutually reinforcing.

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## **Analysing Personal Financial Planning Strategies of Individual Investors with Reference to Maharashtra**

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### **Abstract:**

This study explores the personal financial planning strategies of individual investors, with a focus on their budgeting, saving, investing, and spending behaviours. As financial independence and security have become more essential in today's uncertain economic environment, understanding how individuals manage their money is critical. The project aims to examine the financial planning habits of individuals, analyse the key factors influencing investment decisions, and assess the link between budgeting practices, spending behaviour, and long-term financial stability. Data was collected from 161 respondents through a structured questionnaire. The findings indicate that while a majority of individuals engage in budgeting (38.5%) and maintain moderate saving habits (37.3% save 20-30% of their income), a significant portion (49.7%) do not currently invest. Risk aversion, limited financial knowledge (32.3%), and low-income levels (44.1%) emerged as the primary barriers to effective financial planning. Fixed deposits were the most familiar investment avenue, while mutual funds and stocks were less understood, reflecting a conservative approach to investing. Despite these challenges, 90.7% of respondents reported feeling confident in their ability to manage money. The preference for long-term investments (49.1%) and the presence of emergency funds among 59% of respondents suggest a degree of financial foresight. However, the lack of structured planning among many respondents signals the need for targeted financial education and support.

**Keywords:** *Personal Financial Planning, Individual Investors, Financial Strategies, Investment Decisions, Savings Behaviour, Maharashtra*

### **Introduction**

Financial planning is an integral part of individual wealth development, determining how people handle their earnings, expenditures, and investment choices. Personal financial planning is essential for achieving financial security and long-term wealth accumulation. Individual investors engage in financial planning to manage income, expenses, savings, investments, and retirement goals effectively. However, financial decision-making is influenced by multiple factors, including income levels, risk tolerance, market conditions, and financial literacy. As financial markets evolve and investment options expand, understanding how individuals develop and implement their financial strategies becomes increasingly important. This study examines the financial planning strategies of individual investors, focusing on their investment choices, risk management approaches, and savings behaviour. By analysing key factors such as financial knowledge, economic conditions, and behavioural influences, this research aims to identify the most effective strategies for

achieving financial stability. Additionally, it explores the role of financial advisors, technology, and economic trends in shaping personal financial decisions. The insights from this analysis will contribute to a deeper understanding of how individual investors navigate financial planning challenges. By identifying best practices and common pitfalls, this research can help investors optimize their financial strategies for long-term success. By examining the various approaches used by individuals in their financial planning process, this study seeks to understand the factors that influence their decision-making, including financial knowledge, personal goals, risk tolerance, and external market conditions. Through a comprehensive analysis of individual investors' strategies, this study seeks to contribute valuable insights into the field of personal finance, providing both investors and financial advisors with practical recommendations for improving financial planning practices. Ultimately, the goal is to empower individuals with the tools and knowledge necessary to make sound financial decisions that foster long-term financial success.

## Methodology

This study employed a quantitative research approach to investigate the personal financial planning strategies of individual investors in Maharashtra. The primary method of data collection was a structured survey questionnaire administered to a sample of individual investors residing in Maharashtra. The target population for this research comprised individuals involved in financial decision-making and investment activities. A [Specify the sampling method used in your report, e.g., convenience sampling, snowball sampling] technique was utilized to reach a diverse range of respondents. The questionnaire was designed to gather information on various aspects of personal financial planning, including budgeting practices, saving habits, investment preferences, risk tolerance levels, and the use of financial advisors. The data collection process involved distributing the questionnaire through [Describe how the questionnaire was administered, e.g., online platforms, in-person surveys] over a period of [Specify the data collection period]. The collected data was analysed using descriptive statistical methods, including frequencies, percentages, means, and standard deviations, to identify key patterns and trends in financial planning behaviour among the respondents. [Mention any inferential statistical tests used, if applicable]. Measures were taken to ensure the anonymity and confidentiality of the respondents' data throughout the research process.

## Results/Findings

The analysis of the survey data from individual investors in Maharashtra revealed several key findings regarding their personal financial planning strategies. Budgeting (38.5%) was the most widely adopted financial habit, followed by tracking expenses (23.6%). A significant portion of respondents (37.3%) indicated they save 20-30% of their income, demonstrating a moderate saving habit. However, a substantial percentage (49.7%) reported that they do not currently invest. Risk aversion, limited financial knowledge (32.3%), and low-income levels (44.1%) were identified as the primary barriers to effective financial planning. Fixed deposits were the most familiar investment avenue, while mutual funds and stocks were less

understood, reflecting a conservative approach to investing. Despite these challenges, a large majority (90.7%) expressed confidence in their ability to manage money. A preference for long-term investments (49.1%) was observed, and 59% of respondents reported having emergency funds. However, a lack of structured financial planning was evident among many respondents.

## Discussion

The findings of this study provide valuable insights into the personal financial planning strategies of individual investors in Maharashtra. The prevalence of budgeting and expense tracking suggests a foundational understanding of financial management among a significant portion of the respondents. The moderate saving habits observed indicate a positive step towards financial security, but the high percentage of non-investors highlights a potential area for improvement. The identified barriers to investment, such as risk aversion, limited financial knowledge, and low-income levels, suggest the need for targeted financial education and support, particularly for those with lower incomes. The preference for fixed deposits and lower understanding of mutual funds and stocks indicate a conservative investment approach, which may limit long-term wealth accumulation. While the high level of confidence in money management skills is encouraging, the lack of structured financial planning suggests a gap between perceived ability and actual practice. The presence of emergency funds and preference for long-term investments are positive indicators of financial foresight, but the overall findings suggest a need for more comprehensive financial planning strategies among individual investors in Maharashtra.

## Figures and Tables:

Table I: Distribution of Respondents by City of Residence (Mumbai vs. Pune)

City/Region	Number of Respondents	Percentage (%)
Mumbai	131	80.7%
Pune	30	19.3%
<b>Total</b>	<b>161</b>	<b>100%</b>

Table No: II Educational Qualifications of Survey Respondents

Education Level	Number of Respondents	Percentage
Primary Education	14	9.0%
Secondary Education	19	12.0%
Higher Secondary	49	30.7%
Graduate/Postgraduate	79	48.2%
<b>Total</b>	<b>161</b>	<b>100%</b>

Table III: Primary Concern When Making an Investment Decision

<b>Investment Concern</b>	<b>Number of Respondents</b>	<b>Percentage (%)</b>
Risk and Safety	91	56.5%
High Returns	54	33.5%
Liquidity (Easy Withdrawal)	12	7.5%
Tax Benefits	9	5.6%
<b>Total</b>	<b>161</b>	<b>100%</b>

### Conclusion

This research has provided a comprehensive analysis of the personal financial planning strategies of individual investors in Maharashtra. The study's findings indicate that while many individuals demonstrate a foundational understanding of financial management through budgeting and expense tracking, there are significant gaps in investment activity and long-term financial planning. A considerable portion of respondents are not currently investing, and key barriers such as risk aversion, limited financial knowledge, and low-income levels hinder their ability to engage in more active investment strategies. The prevalence of conservative investment choices, such as fixed deposits, further suggests a need for increased financial literacy and awareness of diverse investment options. Although a large majority of respondents express confidence in their money management skills, the lack of structured financial planning indicates a potential disconnect between perceived ability and actual financial practices. The presence of emergency funds and a preference for long-term investments offer some positive insights into financial foresight, but the overall picture suggests a need for improvement in comprehensive financial planning. In conclusion, the findings highlight the importance of targeted financial education and support to empower individual investors in Maharashtra to make informed decisions, overcome barriers to investment, and adopt effective strategies for long-term financial well-being. Future research could explore the impact of financial literacy programs and the role of financial advisors in promoting better financial planning practices among this demographic.

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## **An inclusion of MSME's in public procurement process in India : A Literature Review**

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### **Abstract:**

The Government e-Marketplace (GeM), launched in 2017 by the Government of India, represents a transformative step toward digitizing and streamlining public procurement. While the platform offers numerous advantages including enhanced transparency, reduced procurement cycles, and preferential treatment for Micro, Small, and Medium Enterprises (MSMEs) the participation rate of Indian MSMEs remains remarkably low, with only about 3.17% of the country's 63 million MSMEs registered. This research investigates the level of awareness, engagement, and adoption challenges faced by MSME sellers on the GeM portal. Drawing insights from five Ph.D. theses and 25 scholarly articles, the study highlights that while digital procurement platforms like GeM have demonstrated potential in improving efficiency and accountability, MSMEs face significant adoption barriers. These include limited awareness, trust issues, technical constraints, and lack of organizational readiness. Moreover, the literature reveals a gap in research concerning sellers' perspectives, with most existing studies focusing on buyers. This study underscores the urgent need for targeted interventions, policy support, and capacity building to enhance MSME inclusion in the digital procurement ecosystem, particularly through platforms like GeM.

### **1. Introduction**

The Government e-Marketplace (GeM) is a flagship initiative launched by the Government of India to revolutionize public procurement by transitioning it into a digital, transparent, and efficient process. Developed from the erstwhile Directorate General of Supplies and Disposals (DGS&D), GeM serves as a dynamic e-commerce platform for the procurement of goods and services by various government departments, organizations, and public sector undertakings (PSUs). The platform promises increased transparency, faster procurement cycles, and enhanced ease of doing business for suppliers, especially Micro, Small, and Medium Enterprises (MSMEs). Despite these advantages and provisions such as free registration, preferential access for MSMEs and start-ups, and user-friendly features, participation by Indian MSMEs remains strikingly low. Out of nearly 63 million MSMEs operating in India, only around 2 million are registered on the GeM portal—accounting for just 3.17%. This study seeks to investigate the levels of awareness and engagement among MSME sellers on the GeM portal, identifying key barriers and enablers.

## 2. Literature Review

### Literature Review

The advent of Government e-Marketplaces (GeM) has notably transformed public procurement systems by improving cost efficiency, transparency, and competitiveness. Analysis of Indian procurement practices reveals that digital platforms like GeM have significantly reduced procurement timelines and enhanced product delivery quality. By minimizing human intervention and enforcing mandatory supplier discounts, GeM promotes transparency and competitive pricing, generating substantial savings and increased buyer satisfaction. However, research suggests that while buyers' perspectives have been well explored, the sellers' viewpoints require further investigation to close adoption gaps and improve platform functionalities such as product rating systems and search mechanisms.

Despite the clear benefits, adoption among micro, small, and medium enterprises (MSMEs) remains challenging. Traditional procurement methods still dominate, particularly among Indian SMEs, which exhibit a gradual but cautious transition to electronic procurement. Factors influencing adoption include trust in suppliers and technology, while perceived value is comparatively less influential. Barriers such as supplier readiness, ongoing operational costs, and limited resources hinder widespread uptake. Mathematical modeling indicates potential for significant time and cost savings through optimized e-procurement strategies, but successful implementation demands targeted interventions to overcome these hurdles.

Extensive studies on Business-to-Business (B2B) e-marketplace adoption highlight similar themes. Research conducted across Gujarat and Maharashtra reveals that although a majority of small enterprises recognize benefits such as improved supplier relationships, cost reduction, market share growth, and operational efficiency, over half of the surveyed firms have yet to adopt such platforms. Non-adopters frequently cite low awareness, security concerns, and reliance on traditional intermediaries as major deterrents. Successful adoption hinges on factors like standardized systems, seamless information flow, strong technical infrastructure, and the availability of qualified human resources. Managerial awareness and collaboration between service providers and policymakers are essential for empowering MSMEs to harness the potential of e-marketplaces effectively.

Beyond these organizational factors, cultural, industrial, and governmental environments play a critical role in shaping e-procurement adoption. For example, studies in Taiwan's electronics and textile sectors reveal that cultural attitudes can either facilitate or impede B2B e-commerce uptake depending on industry characteristics. This underscores the need for context-sensitive approaches in implementing e-procurement solutions. Similarly, research involving North American firms shows that firm size, organizational type, and management involvement significantly impact adoption decisions. Larger firms typically perceive fewer complexities and data security concerns, suggesting that internal capacity building is vital for smaller firms.

Technological acceptance models integrated with behavioral theories further illuminate the adoption process. Positive user attitudes, perceived usefulness, and social influences, especially peer and supply chain partner pressures, strongly predict e-procurement adoption intentions. Organizational context factors such as management level and firm size also significantly influence adoption, emphasizing the importance of improving user experience and demonstrating practical benefits to encourage uptake. Notably, pioneering research in the

United Arab Emirates confirms the interplay of these technological and social factors in the regional e-procurement landscape.

While the benefits of e-procurement are widely recognized, infrastructural and geopolitical challenges may impede full realization. For instance, the Iranian automotive sector's use of e-procurement demonstrates advantages like shorter procurement cycles, cost savings, and enhanced supply chain transparency. Yet, sanctions-induced limitations on electronic payment systems, poor integration with partners, and skill shortages restrict its potential. Nevertheless, management enthusiasm for modernization through digital procurement offers a promising outlook if infrastructural deficits are addressed.

At a broader level, comparative studies across European countries reveal significant disparities in public procurement performance. Northern and Western European nations generally outperform Southern and former communist countries, attributed to stronger governance frameworks, effective implementation of procurement directives, and better-skilled public buyers. Continuous monitoring, capacity building, and regulatory compliance are recommended to narrow these performance gaps and improve procurement outcomes continent-wide.

Sector-specific evaluations illustrate mixed results in digital procurement. The health sector, for example, benefits from faster lead times when utilizing GeM, yet encounters higher product rejection rates due to insufficient quality checks compared to traditional tendering methods. This indicates the necessity of adopting hybrid procurement models that blend digital efficiency with stringent quality controls to ensure accountability and service effectiveness.

Finally, these procurement advancements occur within the broader context of rapid digital transformation. India's digital economy exemplifies how embracing technology fosters economic growth, job creation, and social inclusion. Programs like Digital India leverage mobile connectivity, data analytics, and innovative business models to enhance transparency and efficiency across sectors, including procurement. This digital revolution not only catalyzes economic development but also promotes empowerment by bridging access gaps for diverse stakeholders.

### **3. Summary of literature review:**

Totally 5 Ph.D. theses have been studied along with 25 research articles pertaining to the topic. The summary of this literature review is as follows : Digital procurement platforms like GeM have shown significant potential in enhancing efficiency, reducing costs, and increasing transparency in public procurement. Studies reveal that while such platforms improve procurement timelines and delivery quality, their adoption among sellers remains limited. Many small and medium enterprises continue to rely on traditional practices due to low trust in technology, limited resources, and lack of supplier readiness. Additional barriers include low awareness, security concerns, and inadequate technical infrastructure. Organizational factors like firm size and leadership commitment also influence digital adoption. Furthermore, positive attitudes, perceived usefulness, and peer influence play a crucial role in driving adoption intent.

#### 4. Conclusion

- The Literature relating to MSME's inclusion in public procurement has been studied
- Very little study has been made on GEM portal.
- The portal has come into existence in 2017 and thereafter, only a Ph.D. thesis has been done for assessing the buyer's perspective towards the portal.
- There is strong need for understanding seller's perspective towards the portal.

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## Effectiveness of Training and Development Programs in Skills Enhancement at Mahindra Accelo

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### Abstract:

This study explores the effectiveness of training and development (T&D) programs in skill enhancement at Mahindra Accelo, a subsidiary of the Mahindra Group, renowned for its commitment to employee growth and organizational excellence. Drawing insights from Mahindra's structured T&D frameworks, the study evaluates how targeted initiatives foster technical proficiency, leadership capabilities, and adaptability in employees, aligning with industry demands.

Key findings reveal that Mahindra's programs, such as functional training (job-specific skill development) and behavioral training (soft skills and managerial competencies), significantly improve employee productivity and safety standards, particularly in manufacturing roles. For instance, the SMART Academies—Tech Mahindra's flagship skilling initiative—demonstrate a 75% placement rate post-training, emphasizing industry-aligned curricula in healthcare, logistics, and digital technologies 16. Case studies of beneficiaries like Taira Begum and Sonal Chavan highlight how skill development translates into financial stability, career advancement, and societal impact, underscoring the program's holistic value.

In conclusion, Mahindra's T&D ecosystem serves as a benchmark for skill-driven organizational growth, demonstrating that strategic investments in human capital yield measurable returns in employee performance, innovation, and competitive advantage. This project advocates for scalable, data-driven training models to sustain workforce readiness in dynamic industries. This research analyzes the role and effectiveness of training and development programs in enhancing employee skills at Mahindra Accelo. It examines employee preferences, program relevance, and perceived career impact through primary data collected via surveys. The study offers recommendations for improving training outcomes aligned with organizational goals

**Keywords :** *Training and Development, Skill Enhancement Motivation, performance*

### 1. Introduction

Amid the evolving dynamics of contemporary industrial development, organizations face continuous pressure to adapt, innovate, and maintain a skilled workforce that can meet emerging challenges. Within this landscape, training and development programs have emerged as critical tools for nurturing employee potential, improving performance, and driving organizational success. These programs go beyond basic skill-building; they serve as strategic mechanisms that align workforce capabilities with business objectives, particularly in high-demand sectors like manufacturing.

Manufacturing companies operate in environments that require precision, efficiency, and

adaptability. In such settings, the need for robust training frameworks becomes paramount—not only to meet operational goals but also to foster long-term employee growth and retention. Organizations that prioritize structured, responsive training approaches tend to experience higher levels of engagement, innovation, and productivity. A well-trained workforce is also more likely to adapt to technological advancements, comply with safety standards, and contribute to a culture of continuous improvement.

At the core of effective training lies the ability to understand employee needs, tailor content to job roles, and embed learning into daily workflows. While traditional programs have often focused on technical skills, modern approaches emphasize a blend of leadership development, soft skills, and digital competencies. The success of these programs is heavily influenced by factors such as managerial support, peer collaboration, and opportunities for real-world application.

Mahindra Accelo, as a forward-thinking player in the steel processing industry, has recognized the value of investing in its people. The company has implemented various training initiatives aimed at enhancing both technical proficiency and behavioral competencies. However, the true impact of these efforts can only be assessed through a systematic evaluation of employee perceptions, program relevance, and actual skill improvement.

This research seeks to explore the effectiveness of training and development programs at Mahindra Accelo, with a particular focus on their contribution to skill enhancement. By analyzing employee feedback and organizational practices, the study aims to identify the strengths and limitations of current training strategies. The goal is to provide actionable insights that can help refine training delivery, improve learning outcomes, and align talent development with the company's growth trajectory.

### **Objectives of the study:**

- To study the effect of Mahindra Accelo's T&D programs on technical, behavioural, and leadership skill enhancement.
- To identify success factors and gaps in current training methodologies.

## **2. Literature Review**

The Kirkpatrick Model is one of the most widely used and enduring frameworks for evaluating the effectiveness of training and development programs. Developed by Donald Kirkpatrick in the 1950s, the model offers a structured, multi-level approach to assessing training outcomes across four interconnected levels: **Reaction, Learning, Behavior, and Results**.

### **Level 1: Reaction**

This level measures how participants respond to the training program. It captures immediate feedback regarding content relevance, instructional quality, and participant satisfaction. Studies suggest that positive participant reactions are necessary to engage learners and encourage knowledge retention, although they do not guarantee learning on their own.

## Level 2: Learning

At this stage, the focus is on what participants have actually learned—knowledge acquisition, skill development, and changes in attitude. Quantitative assessments such as quizzes, skill demonstrations, or simulations are often used to evaluate learning outcomes. Research indicates that clarity of objectives and interactive content delivery enhance learning effectiveness.

## Level 3: Behaviour

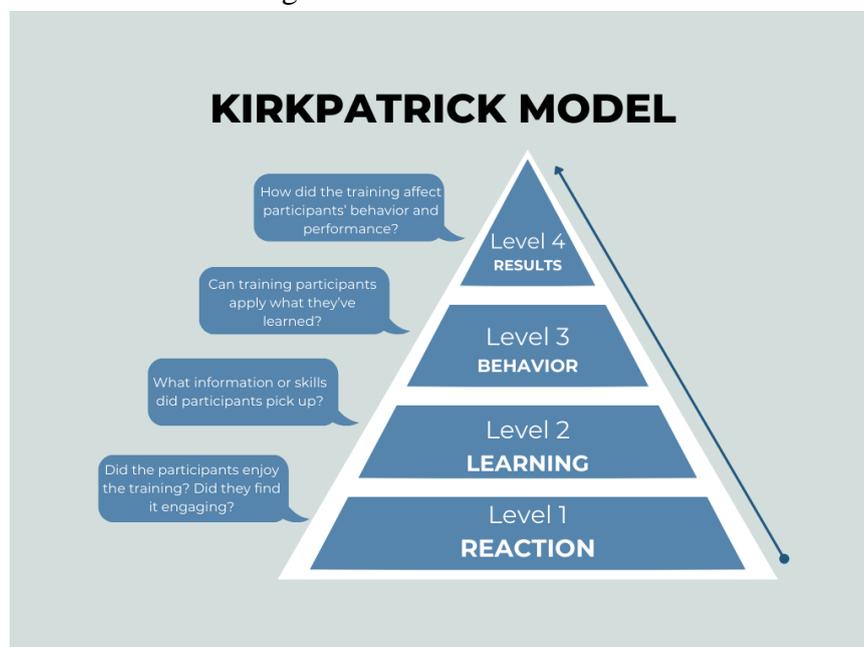
This level examines whether the learning is transferred to the workplace. It assesses changes in employee behaviour, work practices, and performance after training. Empirical studies show that this level is strongly influenced by organizational support, managerial encouragement, and opportunities to apply new skills on the job.

## Level 4: Results

The final level evaluates the overall impact of the training on organizational goals. This includes metrics such as increased productivity, reduced errors, improved customer satisfaction, and higher profitability. Although difficult to measure directly, this level is critical in justifying the investment in training programs.

Researchers have built upon Kirkpatrick's framework by integrating it with modern organizational theories. For instance, newer adaptations advocate for the inclusion of **Return on Investment (ROI)** and **employee engagement metrics**, making the model more suitable for strategic HR decisions. Despite its widespread use, critics argue that the model oversimplifies the complex processes involved in training evaluation. Nonetheless, it remains a foundational tool for assessing effectiveness, especially in industrial environments like Mahindra Accelo where training must align with business performance.

Figure 1: Kirk Patrick Model



Aguinis and Kraiger (2012) emphasized that effective training programs must be strategically aligned with organizational goals and responsive to the evolving needs of employees. They also highlighted the growing importance of technology-enhanced learning, particularly in sectors like manufacturing where continuous upskilling is essential.

According to Chiaburu and Tekleab (2011), the success of training interventions is significantly influenced by the post-training environment. Their findings suggest that peer encouragement and managerial support are more impactful in fostering behavior change than the training content alone.

Saks and Burke (2012) conducted a meta-analysis which revealed that factors such as employee motivation, supervisor involvement, and a conducive work environment greatly enhance the likelihood of training being transferred to actual job performance.

Noe, Clarke, and Klein (2014) advocated for a systemic learning approach in organizations. They proposed that training should be sustained through consistent learning opportunities, strong leadership backing, and transparent feedback mechanisms, especially in fast-paced industries like automotive manufacturing.

Gupta and Jain (2015) analyzed training practices in Indian manufacturing companies and found that integration of HR systems with training initiatives led to higher productivity and workforce engagement. The role of senior management was identified as a critical driver of training success.

Kundu and Gahlawat (2016) explored the automotive sector in India and noted that continuous investment in employee learning contributed to improved retention rates and operational efficiency. Their study underscores the long-term benefits of sustained training efforts. Pathak and Arora (2017) focused on small and medium enterprises (SMEs) in India, concluding that customized, role-specific training programs yield better results than generic training modules. They argued that aligning training with specific business goals enhances its effectiveness.

Sung and Choi (2018), in their study on South Korean automotive firms, found a direct link between technical training and innovation outcomes. Their research also demonstrated that leadership commitment and a strong learning culture play a mediating role in translating training efforts into organizational performance.

Finally, Bhatti and Kaur (2020) emphasized the influence of contextual factors such as industry type, organizational readiness, and clarity of employee roles on the effectiveness of training. They suggested that tailoring training programs to organizational context enhances their impact and sustainability.

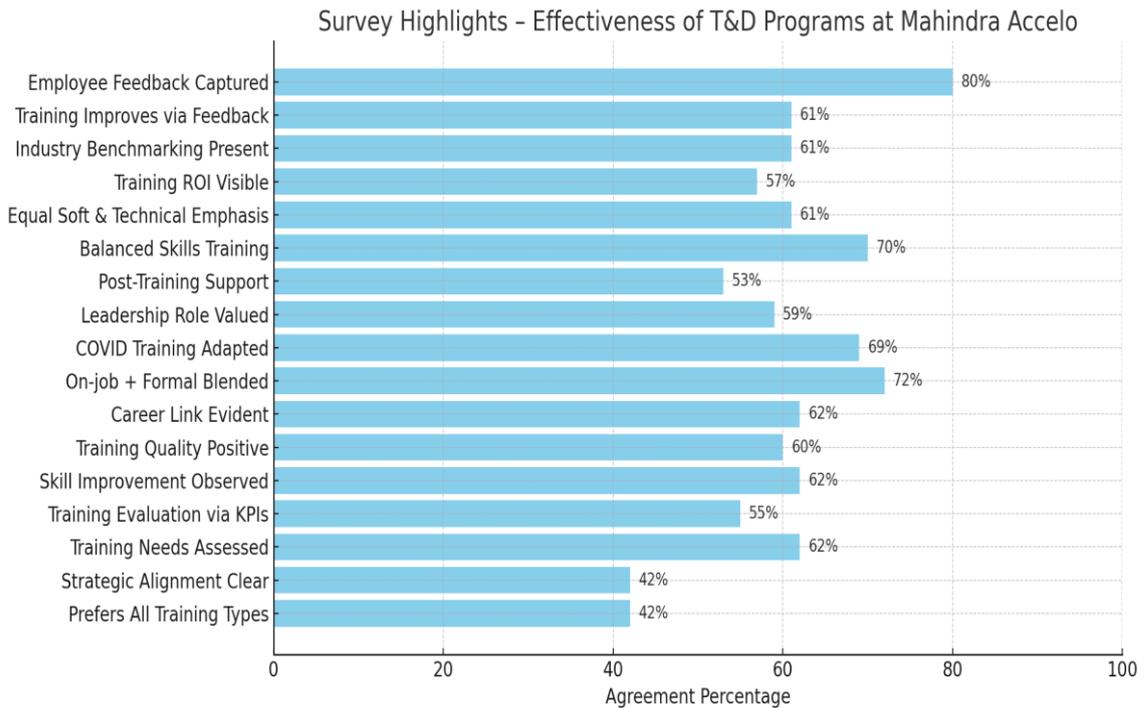
### **3. Research Methodology**

This descriptive study used a structured questionnaire to gather primary data from 150 employees at Mahindra Accelo. A mixed-method approach was used wherein both quantitative and qualitative analysis was conducted. A survey questionnaire was shared with employees across three departments - Manufacturing, HR and Research & development department and the outcome was measured using bar charts and pie charts to interpret trends in preferences, relevance, and career outcomes. Qualitative data was gathered using interview method and discussions. Interviews of HR managers and case studies of employees like Taira Begum and Sonal Chavan further confirmed the research outcome.

#### 4. Data Analysis and Interpretation

**Table 1: Summary of Survey Question Analysis**

Q. No.	Survey Focus	Key Findings	Interpretation
1	Types of training preferred	42% prefer comprehensive; 24% leadership	Strong preference for holistic training; soft skills/safety undervalued
2	Alignment with strategic goals	48.1% neutral; 42.3% agree	Strategic relevance unclear to many; communication gap
3	Need identification by role	62% agree; 25% neutral	Moderate confidence; clarity in design needed
4	KPI-based training evaluation	54.8% agree; 33.3% neutral	Use of KPIs noted; but not fully transparent to employees
5	Short- and long-term skill improvement	61.9% agree	Training is perceived to support sustainable skill growth
6	Relevance and quality of training	60% agree; 35.2% neutral	Generally positive; but many are unsure, indicating potential misalignment
7	Training and career progression	62.1% agree; 32% neutral	Perceived link exists, but needs reinforcement
8	Blending on-the-job with formal training	72% agree	Blended learning is successfully implemented
9	Adaptation during COVID-19	69% agree	Training successfully transitioned to online
10	Leadership's role in training success	59% agree	Positive but could improve hands-on leadership involvement
11	Post-training application support	53.3% agree	Support exists, but structure can be improved
12	Balance: Technical vs Soft Skills	70% agree	Training is seen as balanced
13	Equal emphasis on technical and soft skills	60.5% agree	Confirms consistent dual-focus approach
14	ROI in skills/business outcomes	57.1% agree; 30% neutral	ROI seen, but not widely communicated
15	Benchmarking with industry standards	61.1% agree	Mahindra Accelo compares well; may benefit from external validation
16	Continuous improvement of training	61% agree; 31.4% neutral	Improvements are visible; feedback loops need more visibility
17	Mechanisms for feedback collection	80.2% agree	Strong culture of listening to employee feedback

**Figure 2: Survey Summary – Training & Development Effectiveness**

## 6. Results and Findings

### **Strong Preference for Comprehensive Training:**

Employees favor all-round training programs, especially those combining leadership, technical, and soft skills. However, awareness and engagement with soft skills and safety training remain comparatively low.

### **Limited Visibility of Training Alignment and Needs Assessment:**

While many employees acknowledge role-based training initiatives, a significant number remain unsure about how training aligns with organizational goals, indicating a need for clearer communication.

### **Positive Perception of Evaluation and ROI:**

There is high confidence in the use of KPIs and impact assessments to evaluate training success, and most employees believe programs deliver a strong return on investment. Yet, transparency in communicating outcomes could be improved.

### **Supportive Learning Environment with Leadership Involvement:**

On-the-job learning, leadership participation, and post-training support are largely appreciated. However, consistent follow-through and visibility of these efforts across teams can be strengthened.

### **Commitment to Improvement and Feedback Use:**

Employees recognize that training programs are regularly improved and shaped by feedback, but more visible action on feedback and greater employee involvement in the process would enhance engagement.

## 7. Suggestions

### **Enhance Communication of Training Strategy and Impact:**

To address the high percentage of neutral responses, Mahindra Accelo should improve internal communication around how training programs are designed, evaluated, and aligned with individual roles and company goals. This can be done through regular manager-led briefings, dashboards, or internal newsletters summarizing training outcomes and success stories.

### **Strengthen Post-Training Engagement and Support Mechanisms:**

While leadership involvement and feedback collection are in place, structured follow-ups such as mentoring sessions, application reviews, or refresher micro-modules can improve retention and practical application of learning. This would reinforce learning transfer and make support more consistent across departments.

## 8. Scope for further Research

This study focused on employee perceptions of training effectiveness within a single organization and industry context. Future research could explore:

- Comparative studies across industries or locations to assess how organizational size, sector, or culture influences training outcomes.
- Longitudinal impact analysis, examining whether skill enhancements from training translate into long-term career growth, productivity gains, and retention.
- Technology-enabled training efficacy, evaluating the role of e-learning platforms, gamification, and virtual simulations in enhancing learning and engagement.

## 9. Conclusion

This study highlights that training and development initiatives at Mahindra Accelo are generally well-received, with a strong employee preference for comprehensive programs that balance leadership, technical, and soft skills. The integration of on-the-job learning, the positive perception of ROI, and the visible use of feedback reflect a mature and responsive training culture. However, the presence of substantial neutral responses across key areas such as training relevance, evaluation transparency, and career linkage signals a need for greater clarity, visibility, and communication. Employees value the support they receive, but structured post-training engagement and stronger alignment with business goals could further enhance impact. Overall, Mahindra Accelo demonstrates a solid foundation in its learning and development practices. With targeted improvements in strategy communication and post-training reinforcement, the organization can further elevate its training effectiveness and align workforce capabilities with future business growth. The study also opens doors for broader inquiry—such as industry benchmarking, long-term training ROI, and digital learning trends—paving the way for future research on sustainable training models in the evolving manufacturing sector.

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## Reviewing Investors' Perception towards ESG Funds with Reference to Maharashtra

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### Abstract:

This research paper investigates the perceptions of investors in Maharashtra towards Environmental, Social, and Governance (ESG) funds, a rapidly growing segment of the financial market driven by increasing global awareness of sustainability issues. The study aims to identify the key factors influencing the investment decisions of both individual and institutional investors within this specific Indian state. It examines the level of importance investors place on companies adhering to ESG compliance standards and explores their future intentions regarding investment in these funds. Utilizing a survey-based methodology, the research gathers primary data directly from investors in Maharashtra to provide a nuanced understanding of their awareness, motivations, and expectations concerning ESG investments. Preliminary findings, based on the survey responses, indicate a growing awareness of ESG factors among investors in Maharashtra. The analysis reveals that while financial returns remain a significant driver, ethical considerations and a desire for positive societal impact are increasingly influencing investment choices. Furthermore, the study explores the role of information sources, such as financial advisors and online platforms, in shaping investor understanding of ESG funds. The findings of this study contribute valuable insights to the understanding of sustainable finance in emerging markets and offer practical implications for financial institutions, policymakers, and other stakeholders seeking to promote the adoption and growth of ESG investing in Maharashtra and potentially other similar regions.

**Keywords :** *ESG Funds, Investor Perception, Sustainable Finance, Risk Tolerance, India, ESG Ratings, Greenwashing.*

### Introduction

The global financial landscape is witnessing a significant shift towards sustainable investing, with Environmental, Social, and Governance (ESG) factors gaining prominence in investment decision-making processes. This growing emphasis on ESG reflects a broader recognition of the interconnectedness between financial performance and environmental and social well-being. ESG funds, which integrate these non-financial criteria into their investment strategies, have experienced substantial growth worldwide, including in emerging economies like India. Within India, the state of Maharashtra, a major economic and financial hub, presents a particularly interesting context for examining investor perceptions towards ESG funds. The increasing awareness of environmental challenges, coupled with a growing focus on corporate social responsibility and governance, is likely shaping how investors in this region view and approach sustainable investment options. Understanding these perceptions is crucial for the further development and mainstreaming of ESG investing in Maharashtra. This research seeks to address this need by specifically investigating the awareness, attitudes, and intentions of investors in Maharashtra concerning ESG funds. The

study aims to answer key questions regarding their understanding of ESG concepts, the factors that influence their investment decisions in this area, the importance they place on ESG compliance, and their future investment plans in ESG funds. The findings of this research are expected to provide valuable insights for financial institutions seeking to tailor their ESG product offerings, policymakers aiming to create a supportive regulatory environment, and academics studying the dynamics of sustainable finance in the Indian context. By focusing on the specific regional context of Maharashtra, this study aims to contribute a nuanced understanding of investor behavior in this evolving and increasingly important segment of the financial market.

## **Methodology**

This descriptive quantitative study collected primary data via a structured questionnaire, reaching 110 investors. The survey included sections on demographics, ESG awareness, perceptions, and behavioral intent. Convenience sampling was used, and analysis was conducted using Excel-based statistical tools. Likert-scale and multiple-choice responses helped quantify attitudes, investment proportions, and trust levels in ESG data.

## **Results/Findings**

The analysis of the survey data from investors in Maharashtra yielded several significant findings regarding their perceptions of ESG funds. As indicated in question 19, a substantial portion of respondents reported relying on financial advisors and experts and online investment platforms as primary sources of information about ESG funds. This highlights the critical role of these intermediaries in disseminating knowledge and shaping investor understanding in this domain.

Regarding future investment plans (question 20), a notable segment indicated a willingness to increase their ESG fund investments in the future, while a significant portion expressed a conditional interest, stating they might invest more if the funds perform well. This underscores the continued importance of financial performance as a key driver, even in sustainable investing. When assessing the importance of ESG compliance in their overall investment decisions (question 21), a majority of respondents indicated that it matters very much or somewhat, suggesting a growing integration of ESG considerations into their investment frameworks.

The influence of changes in ESG-related regulations on investment decisions (question 4) was acknowledged by a considerable number of respondents, indicating that regulatory developments can play a role in shaping investor behavior. Factors identified as potentially encouraging greater investment in ESG funds (question 5) included clearer transparency and reporting, better returns, and more fund choices, highlighting key areas for improvement in the ESG fund market. Furthermore, a strong emphasis was placed on ethical and social responsibility in investment decisions, with a significant number of investors rating these factors as very or somewhat important.

When selecting ESG investments (question 21), respondents indicated a prioritization of issues such as climate change, human rights, corporate governance, and diversity policies, with a general agreement or strong agreement on their importance. A significant majority of respondents also agreed or strongly agreed with the statement that they would invest more in ESG funds if there was greater transparency and regulation.

Finally, a notable proportion of respondents indicated that they are likely or strongly likely to increase their investment in ESG funds in the future, reinforcing the growing interest in sustainable investing within Maharashtra.

## Discussion

The findings of this study provide valuable insights into the perceptions of investors in Maharashtra towards ESG funds, revealing a growing awareness and a positive inclination towards sustainable investing. The significant reliance on financial advisors and online platforms for information underscores the importance of these channels in educating investors and promoting ESG awareness. The conditional willingness to increase ESG investments, contingent on fund performance, highlights the need for ESG funds to demonstrate competitive returns alongside their sustainability objectives.

The considerable importance attributed to ESG compliance suggests that investors in Maharashtra are increasingly considering non-financial factors in their investment decisions, indicating a maturing understanding of holistic value creation. The acknowledged influence of regulatory changes emphasizes the potential for policy to shape and guide the growth of ESG investing in the region. The identified drivers for increased investment, such as enhanced transparency, better returns, and greater choice, offer practical guidance for fund managers and policymakers seeking to attract more capital into ESG funds.

The strong emphasis on ethical and social responsibility further reinforces the notion that investors are not solely driven by financial gains but also by a desire to align their investments with their values. The prioritization of specific ESG issues demonstrates a nuanced understanding of the various dimensions of sustainability. The widespread support for greater transparency and regulation underscores the need for a robust and trustworthy ESG ecosystem to build investor confidence and encourage further adoption.

Finally, the overall likelihood of increased future investment in ESG funds suggests a promising trajectory for sustainable finance in Maharashtra, provided that the identified needs and expectations of investors are effectively addressed by the relevant stakeholders. These findings have implications for financial institutions, policymakers, and educators seeking to foster the growth of ESG investing in this important Indian state.

## Figures and Tables

The study used pie charts and tables to visualize age distribution, ESG investment proportion, trust levels, and behavioral intent. Graphs helped clarify the correlations between education and awareness, and income levels with risk tolerance.

**Table 1:**

Age Category	Number of Responses	Percentage
Less than 25 years	32	29.09%
25 to 35 years	31	28.18%
36 to 45 years	21	19.09%
46 to 60 years	20	18.18%
More than 60 years	6	5.45%
Total	110	100.0%

**Table 2:**

Motivator	Number of Responses	Percentage
Maximized ROI	29	26.20%
Socially responsible investing	39	34.60%
Building wealth over time	27	25.20%
Risk allocation	15	14.00%
Total	110	100.00%

**Table 3:**

Portfolio Allocation	Number of Responses	Percentage
Under 10%	36	32.70%
10% - 25%	30	27.30%
26% - 50%	32	29.10%
Above 50%	12	10.90%
Total	110	100%

**Table 4:**

Crucial Factor in Choosing ESG Fund	Percentage	Number of Responses
Financial returns	31.80%	35
ESG ratings and their sustainability impact	30.00%	33
Low risk	22.70%	25
Recommendations from experts	15.50%	17
Total	100.00%	110

## Conclusion

This research has provided a comprehensive analysis of investor perceptions towards ESG funds within the specific context of Maharashtra. The study's findings indicate a growing awareness and a positive shift in attitudes towards sustainable investing among investors in the region. Key sources of information for ESG funds include financial advisors and online platforms, highlighting the importance of these intermediaries in investor education. While financial performance remains a crucial consideration, a significant portion of investors are increasingly factoring in ESG compliance and ethical considerations into their investment decision-making processes.

The study identifies several factors that could further encourage investment in ESG funds, notably enhanced transparency and reporting, competitive returns, and a wider array of investment options. The acknowledged influence of regulatory developments underscores the potential for policy to play a significant role in shaping the ESG investment landscape in Maharashtra. Furthermore, the prioritization of specific ESG issues demonstrates a

developing understanding of the multifaceted nature of sustainable investing. The strong support for greater transparency and regulation highlights the need for a robust and credible ESG ecosystem to build investor trust and facilitate further growth.

Overall, the research concludes that there is a growing appetite for ESG funds among investors in Maharashtra, presenting a significant opportunity for the expansion of sustainable finance in the state.

However, realizing this potential requires a concerted effort from financial institutions, policymakers, and other stakeholders to address investor needs for transparency, performance, and choice, while also fostering a supportive regulatory environment. Future research could delve deeper into the motivations and preferences of different investor segments within Maharashtra and explore the impact of specific ESG-related information and disclosures on investment decisions.

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# Customer Buying Behavior for Electric Vehicles: A Study in Pune City

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## Abstract:

Electric vehicles (EVs) are gaining momentum globally as sustainable alternatives to conventional vehicles. This study explores the consumer buying behavior related to EVs in the Pune (Pimpri-Chinchwad) region. Through a survey of 122 respondents, the research identifies key factors influencing purchase decisions, such as awareness, cost, charging infrastructure, government incentives, and environmental attitudes. While younger consumers demonstrate high awareness and willingness to adopt EVs, barriers like high upfront costs and limited charging stations still hinder broader acceptance. The study recommends targeted awareness programs, financial incentives, and infrastructure development to boost EV adoption.

Keywords: Electric Vehicles, Consumer Behavior, Purchase Intention, Charging Infrastructure, Sustainability

## Introduction

Electric vehicles (EVs) are being positioned as the future of transportation due to their environmental and economic benefits. Despite their increasing popularity, adoption remains modest in Indian cities like Pune. Factors such as insufficient charging infrastructure, lack of awareness, and high upfront costs act as major deterrents.

This study investigates the key determinants that shape consumer attitudes and behaviors toward EVs, particularly among the urban population in Pune's Pimpri-Chinchwad region.

## Objectives of the Study

- To understand consumers buying behavior towards electric vehicles in Pune (Pimpri – Chinchwad) city.
- To assess the level of consumer awareness about electric vehicles (EVs).
- To identify the key factors influencing the purchase decision of electric vehicles.
- To examine consumer perception and attitude towards electric vehicles.

## Literature Review

**Egbue & Long (2012)** examined consumer attitudes in the United States and found that technological uncertainties (battery reliability, range, and charging infrastructure) were critical barriers. Consumers also had low familiarity with EV operations.

- **Caperello & Kurani (2011)** used a grounded theory approach with 36 households in California and found confusion about EV charging, range anxiety, and lack of test-driving experiences as primary obstacles to adoption.
- **Tamor et al. (2013)** compared battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs), noting that PHEVs were preferred due to flexibility in fuel options and ease of transition for consumers.

- **Sierzchula et al. (2014)** performed a cross-national analysis and concluded that policy tools such as tax incentives and public charging infrastructure played a major role in promoting EV sales.
- **Gujarathi, Shah, & Lokhande (2018)** explored barriers to EV adoption in India and emphasized the limited domestic production, high costs, and inadequate charging networks.
- **Aggarwal (2019)** found that EV users in India were primarily concerned about range, maintenance cost, and resale value. The study recommended government and manufacturer-led awareness campaigns.
- **Bhardwaj & Rajput (2022)** studied urban Indian consumers and reported that rising fuel prices and environmental awareness positively influence EV adoption, though affordability remains a concern.
- **Deshmukh et al. (2024)** focused on Gen Z and millennials in metro areas. While awareness was high, the study found that lack of charging reliability and brand trust still affected final purchase decisions.

## Research Methodology

- **Research Design:** Descriptive
- **Sampling:** Convenience sampling
- **Sample Size:** 122 respondents
- **Type of Data :** Primary
- **Data Collection:** Survey
- **Tools:** Microsoft Excel
- **Target Area:** Pune (Pimpri-Chinchwad)

The questionnaire was divided into sections including demographics, awareness, influencing factors, and attitudes.

## Personal Information

1. Gender: -

- Male
- Female

Male	83
female	39

2. Age: -

Under 25	70
25-35	44
36-45	5
46-55	0
Above 55	3

Most respondents were under 25 years old, making up 57.4% (70 out of 122) of the sample. The next largest group was 25–35 years, comprising 36.1% (44 respondents). Only 4.1% (5 respondents) were

in the 36–45 age range, and there were no respondents from 46–55. Just 2.5% (3 respondents) were above 55.

3. Qualification: -

Diploma	21
Undergraduate	59
Postgraduate	40
Student	1
Job	1

The majority of respondents were undergraduates (48.4%), followed by postgraduates (32.8%) and diploma holders (17.2%). Only 0.8% each identified as students or selected the "other" category for occupation.

4. Occupation: -

Student	62
Employee	40
Business Owner	13
Retired	6
Farmer	1

The majority of respondents were students (50.8%), followed by employees (32.8%). Smaller groups included business owners (10.7%), retired individuals (4.9%), and farmers (0.8%).

5. Income Level (Monthly): -

Below 30,000	42
₹ 30,000 - ₹ 50,000	22
₹ 50,000 - ₹ 1,00,000	18
Above ₹ 1,00,000	8
NA	19
Zero	13

The majority of respondents had a monthly income of below ₹ 30,000 (34.4%), followed by ₹ 30,000 - ₹ 50,000 (18%) and ₹ 50,000 - ₹ 1,00,000 (14.8%). A smaller percentage earned above ₹ 1,00,000 (6.6%), while 15.6% chose "NA" or reported zero income (10.7%).

### Awareness about Electric Vehicles

Do you have a clear understanding of how electric vehicles work and their benefits?

Strongly Agree	45
Agree	55
Neutral	18
Disagree	1
Strongly Disagree	3

Out of 122 respondents, 45 (36.9%) strongly agreed, and 55 (45.1%) agreed that they have a clear understanding of how electric vehicles work and their benefits, accounting for 81.9% in total. 18 respondents (14.8%) were neutral, while 1 (0.8%) disagreed, and 3 (2.5%) strongly disagreed.

2. How aware are you of the cost savings associated with using an electric vehicle compared to a traditional fuel-powered vehicle?

Strongly Agree	37
Agree	60
Neutral	21
Disagree	0
Strongly Disagree	4

Out of 122 respondents, 37 (30.3%) strongly agreed, and 60 (49.2%) agreed that they are aware of the cost savings associated with using an electric vehicle compared to a traditional fuel-powered vehicle, making up 79.5% in total. 21 respondents (17.2%) were neutral, while 0 disagreed, and 4 (3.3%) strongly disagreed.

3. How familiar are you with the charging infrastructure available for electric vehicles in your area?

Strongly Agree	32
Agree	53
Neutral	22
Disagree	11
Strongly Disagree	4

Out of 122 respondents, 32 (26.2%) strongly agreed, and 53 (43.4%) agreed that they are familiar with the charging infrastructure available for electric vehicles in their area, making up 69.6% in total. 22 respondents (18.0%) were neutral, while 11 (9.0%) disagreed, and 4 (3.3%) strongly disagreed.

4. How confident are you in your knowledge of government incentives or policies supporting electric vehicle adoption?

Strongly Agree	33
Agree	55
Neutral	26
Disagree	3
Strongly Disagree	5

Out of 122 respondents, 33 (27.0%) strongly agreed, and 55 (45.1%) agreed that they are confident in their knowledge of government incentives or policies supporting electric vehicle adoption. This brings the total percentage of confident respondents to 72.1%. 26 (21.3%) were neutral, while 3 (2.5%) disagreed, and 5 (4.1%) strongly disagreed.

### Factors Influencing Purchase Decision

1. How much does the cost of an electric vehicle (including initial price and maintenance) influence your purchase decision?

Strongly Agree	33
Agree	55
Neutral	26
Disagree	3
Strongly Disagree	5

Out of 122 respondents, 33 (27.0%) stated that the cost of an electric vehicle *strongly influences* their purchase decision, while 55 (45.1%) said it *influences* their decision. 26 (21.3%) remained *neutral*, and only 3 (2.5%) said it *slightly influences* them, while 5 (4.1%) said it *does not influence* them at all.

2. To what extent does the availability of charging stations influence your decision to buy an electric vehicle?

Strongly Influences	27
Influences	52
Neutral	33
Slightly Influences	6
Does Not Influence	4

Out of 122 respondents, 27 (22.1%) mentioned that the availability of charging stations strongly influences their decision to buy an EV, while 52 (42.6%) said it influences their choice. 33 (27.0%) were neutral, 6 (4.9%) said it slightly influences them, and only 4 (3.3%) said it does not influence them.

3. How much do government incentives (subsidies, tax benefits) influence your decision to purchase an electric vehicle?

Strongly Influences	31
Influences	45
Neutral	32
Slightly Influences	10
Does Not Influence	4

Out of 122 respondents, 31 (25.4%) stated that government incentives *strongly influence* their decision to purchase an electric vehicle, while 45 (36.9%) said it *influences* them. 32 (26.2%) were *neutral*, 10 (8.2%) reported *slight influence*, and 4 (3.3%) said it *does not influence* their decision.

4. To what extent does the vehicle's battery life and driving range influence your buying decision?

Strongly Influences	24
Influences	47
Neutral	39
Slightly Influences	10
Does Not Influence	2

Out of 122 respondents, 24 (19.7%) indicated that battery life and driving range *strongly influence* their buying decision, while 47 (38.5%) said it *influences* them. 39 respondents (32%) were *neutral*, 10 (8.2%) felt it *slightly influences* them, and only 2 (1.6%) said it *does not influence* their decision.

5. How much does environmental concern (reducing carbon footprint) influence your decision to purchase an electric vehicle?

Strongly Influences	30
Influences	51
Neutral	35
Slightly Influences	3
Does Not Influence	3

Out of 122 respondents, 30 (24.6%) reported that environmental concerns strongly influence their decision to purchase an electric vehicle, while 51 (41.8%) said it influences them. 35 respondents (28.7%) remained neutral, and only 6 (4.9%) said it either slightly influences or does not influence their decision.

## Perception and Attitude Towards Electric Vehicles

1. Do you believe that electric vehicles are environmentally friendly compared to petrol/diesel vehicles.

Strongly Agree	41
Agree	57
Neutral	16
Disagree	3
Strongly Disagree	5

Out of 122 respondents, 41 (33.6%) *strongly agreed* and 57 (46.7%) *agreed* that electric vehicles are environmentally friendly compared to petrol or diesel vehicles. 16 respondents (13.1%) were *neutral*, while only 3 (2.5%) *disagreed* and 5 (4.1%) *strongly disagreed* with the statement.

2. Do you believe electric vehicles are reliable for daily commuting?

Strongly Agree	33
Agree	55
Neutral	30
Disagree	3
Strongly Disagree	1

Out of 122 respondents, 33 (27%) *strongly agreed* and 55 (45.1%) *agreed* that electric vehicles are reliable for daily commuting. 30 respondents (24.6%) were *neutral*, while only 3 (2.5%) *disagreed* and 1 (0.8%) *strongly disagreed*.

3. Is the high upfront cost of electric vehicles a major barrier for you?

Strongly Agree	32
Agree	50
Neutral	28
Disagree	7
Strongly Disagree	5

Out of 122 respondents, 32 (26.2%) *strongly agreed* and 50 (40.9%) *agreed* that the high upfront cost of electric vehicles is a major barrier. 28 (23%) were *neutral*, while 7 (5.7%) *disagreed*, and 5 (4.1%) *strongly disagreed*.

4. Do you think the charging infrastructure (availability of charging stations) in your area is sufficient for electric vehicles?

Strongly Agree	24
Agree	47
Neutral	31
Disagree	12
Strongly Disagree	8

Out of 122 respondents, 24 (19.7%) *strongly agreed* and 47 (38.5%) *agreed* that the charging infrastructure in their area is sufficient for electric vehicles. 31 (25.4%) were *neutral*, while 12 (9.8%) *disagreed*, and 8 (6.6%) *strongly disagreed*.

5. Do you believe electric vehicles will replace traditional fuel vehicles in the next 10 years?

Strongly Agree	34
Agree	42
Neutral	33
Disagree	6
Strongly Disagree	7

Out of 122 respondents, 34 (27.9%) *strongly agreed* and 42 (34.4%) *agreed* that electric vehicles will replace traditional fuel vehicles in the next 10 years. 33 (27%) were *neutral*, while 6 (4.9%) *disagreed*, and 7 (5.7%) *strongly disagreed*.

## Conclusion

The study reveals a growing positive perception towards electric vehicles among the respondents. A significant number of individuals, particularly from the younger demographic, show interest in the adoption of EVs due to their environmental benefits and cost savings in the long run. However, barriers such as the high upfront cost and limited charging infrastructure still exist.

The willingness of respondents to pay more for an electric vehicle, coupled with their awareness of government incentives and environmental concerns, suggests that with increased infrastructure, more robust marketing, and continued financial support, electric vehicles can become a mainstream option for personal transportation.

In conclusion, while the future of electric vehicles is promising, there is a need for further outreach, education, and infrastructure development to fully capitalize on the potential of EVs. The transition to electric vehicles not only represents an environmentally conscious choice but also a shift towards more sustainable and cost-effective transportation solutions.

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- 

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