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Aims & Scope

The AIM of APIMR International Research Journal of Commerce & Management is to harness diverse research ideas springing across the disciplines of Commerce and Management and facilitate consensus or meaningful debate on the contemporary issues of interest to Industry & Academia.

Thus, the publication confines its scope to various functional aspects of Commerce & Management; covering historical perspectives & reviews, descriptive & exploratory studies, case studies, and conceptual models.

EDITORIAL MESSAGES

Dear Readers,

We are elated to present you the 4th Volume of APIMR International Research Journal of Commerce & Management for your reading, reference, and reflections.

True to the name, our publication has been relentlessly promoting research temperament among the colleges and institutions catering to the UG & PG courses of Commerce & Management. Our publication has been following stringent and due processes to maintain research ethics and quality throughout the publication of this journal.

We hope our humble yet sincere effort shall be useful in conceptualizing, endorsing, or expanding your own research endeavors.

We shall highly appreciate your valued feedback to make it better.

Wishing you all a happy reading,

Prof. Shamal S. Choudhary

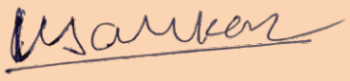
Chief Administrator, SBSPM

Dear Readers,

We express our heartfelt gratitude for responding overwhelmingly to our call for papers. Let me acknowledge that each research article that we received was a priceless contribution to us! However, we had to reject a few articles on account of quality parameters. Our Peer Review Process deserves a special mention here for their patience and perseverance so as to ensure each research article published in this volume seems to be polished to its core and would be of immense reference value throughout.

The 4th Volume of APIMR International Research Journal of Commerce & Management showcases enormous interest among the academia on buzzing themes such as Artificial Intelligence, ESG, HR Innovations, Fintech, etc.

Looking forward to your valued feedback,



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Revisiting the 'S' in ESG: Why the Social Pillar Deserves Equal Weight

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Abstract: *The growing emphasis on Environmental, Social, and Governance (ESG) frameworks has transformed corporate sustainability discussions. While environmental and governance dimensions have received significant scholarly and industry attention, the social pillar often remains underexplored or superficially addressed. This conceptual paper revisits the "S" in ESG, highlighting its integral role in shaping sustainable and resilient organizations. Using a mixed-method approach, the study combines primary data collected from 120 corporate employees, HR managers, ESG professionals, and investors with conceptual analysis to assess the significance of social factors in ESG implementation. The findings indicate that employee well-being, diversity, ethical practices, and community engagement are key drivers of organizational trust, innovation, and long-term performance. By reviewing theoretical perspectives, stakeholder expectations, and global reporting trends, the paper develops a conceptual model emphasizing the interdependence of social, environmental, and governance dimensions. It argues that social factors such as employee well-being, diversity, community engagement, and human rights are foundational for achieving true sustainability and long-term value creation.*

Keywords: *ESG, Social Sustainability, Corporate Responsibility, Human Capital, Stakeholder Theory, Sustainable Development.*

1. INTRODUCTION

In recent years, Environmental, Social, and Governance (ESG) criteria have emerged as a critical framework for evaluating corporate sustainability, ethical conduct, and long-term value creation. ESG principles provide stakeholders including investors, customers, employees, and regulators with a structured approach to assess how organizations manage environmental impact, social responsibilities, and governance structures. Companies worldwide are increasingly striving to integrate ESG considerations into their core strategies, operational processes, and reporting practices to demonstrate accountability and sustainability. The adoption of ESG frameworks has also been driven by rising global awareness of climate change, social inequality, and corporate misconduct, as well as by investor demand for responsible and transparent business practices.

Despite the growing emphasis on ESG, the Social pillar often receives comparatively less attention than the Environmental and Governance dimensions. While environmental initiatives such as carbon reduction and renewable energy adoption, and governance reforms such as board independence and anti-corruption measures, are widely measured and reported, social factors remain less visible. This discrepancy arises partly from the qualitative, context-dependent nature of social outcomes, which are more difficult to

quantify and standardize. As a result, social performance may be underrepresented in ESG ratings, leading to an incomplete assessment of corporate sustainability.

The social pillar reflects how organizations manage relationships and responsibilities toward their internal and external stakeholders, including employees, suppliers, customers, and the broader community. It encompasses critical areas such as labor practices, occupational health and safety, diversity and inclusion, employee development, human rights, and community engagement. Effective management of these areas contributes not only to employee satisfaction and retention but also to brand reputation, investor confidence, and long-term organizational resilience. Conversely, neglecting social responsibilities can result in legal challenges, reputational damage, reduced stakeholder trust, and missed opportunities for value creation.

This paper aims to conceptually re-evaluate the importance of the Social ("S") pillar within ESG, arguing for its equal consideration alongside Environmental and Governance factors. By exploring the key dimensions, emerging trends, and practical implications of the Social pillar, this study highlights how robust social performance contributes to sustainable corporate growth, mitigates risks, and strengthens stakeholder relationships. Ultimately, this research underscores that achieving holistic sustainability requires a balanced approach in which the Social pillar is recognized as a strategic imperative rather than a secondary consideration.

2. OBJECTIVES OF THE STUDY

a) To analyze the conceptual significance of the *social* pillar in the ESG framework.
b) To identify key social dimensions influencing corporate sustainability.
c) To empirically examine stakeholder perceptions toward social sustainability through primary data.
d) To propose directions for organizations and policymakers to strengthen social sustainability practices.
e) To develop a conceptual framework that integrates the social pillar with environmental and governance aspects.

3. LITERATURE REVIEW

ESG as a decision and disclosure framework has surged in importance over the past decade, yet the three pillars are not always treated equally in practice. Scholars and practitioners increasingly argue that social factors human rights, labor practices, diversity & inclusion, health & safety, community relations, and supply-chain ethics are critical drivers of sustainable firm performance but receive uneven treatment relative to environmental and governance concerns. This unevenness has implications for corporate strategy, investor decision-making, and policy design.

3.1 Theoretical foundations

Three theoretical streams commonly underpin discussions about the social pillar:

Stakeholder theory posits that firms must create value for multiple stakeholder groups (employees, communities, customers, suppliers), not only shareholders; social performance is therefore a core managerial responsibility rather than a peripheral activity.

Triple Bottom Line (TBL) elevates "People" (social) alongside "Planet" and "Profit," framing social outcomes as intrinsic to sustainable value creation.

Resource-Based View (RBV) and human capital theories treat social assets (trust, employee skills, inclusive culture) as strategic resources that generate sustained competitive advantage.

Together these theories explain why social practices affect organizational processes, reputation, and long-term performance rather than being mere compliance items. Eccles, Ioannou, and Serafeim's empirical and conceptual work remains foundational in showing how corporate sustainability (broadly defined) reshapes organizational processes and can influence performance outcomes.

3.2 Empirical evidence linking the social pillar to outcomes

Recent empirical studies point to meaningful links between social practices and firm outcomes:

a) Research has demonstrated that firms with stronger sustainability orientations (including social practices) tend to reorganize processes (HR, operations) in ways that support productivity and innovation ultimately affecting performance metrics. Eccles et al. provide matched-sample evidence of these process and outcome effects.
b) More focused studies on the social pillar find associations between social metrics and market/firm indicators (e.g., stock reactions, human capital investment effectiveness). For instance, recent sectoral and cross-country analyses identify positive associations between social performance (DEI, worker safety, community engagement) and aspects of firm resilience and investor perceptions.

These studies support the proposition that social factors are not merely ethical or reputational concerns but influence concrete business outcomes such as innovation, retention, risk mitigation, and customer loyalty.

3.3 Measurement, ratings divergence, and reporting challenges

A major strand of literature concerns measurement and comparability problems:

ESG rating providers use heterogeneous scopes, indicators, and weighting schemes. Berg et al. document substantial divergence across major ESG rating agencies and trace much disagreement to differences in scope, measurement, and weighting a problem that particularly affects social indicators because they are often qualitative, context-dependent, and reliant on company-provided disclosures.

The social pillar suffers from a relative lack of standardized quantitative metrics (compared with carbon emissions, energy use, etc.), making comparability and benchmarking harder. Recent research highlights the consequence of this divergence: investor confusion, inconsistent fund flows, and difficulty in holding firms accountable for social commitments.

At the regulatory and reporting level, jurisdictions are evolving: India's BRSR (Business Responsibility & Sustainability Report) and global initiatives like the EU's CSRD aim to standardize disclosures, with BRSR explicitly including social indicators as 'essential' and 'leadership' metrics illustrating policy movement toward formalizing social reporting.

3.4 Critiques, asymmetries, and emerging evidence of under-weighting

Critical commentaries and empirical investigations point to systematic under-weighting or superficial treatment of the "S" pillar:

Some firms concentrate resources and messaging on high-visibility environmental achievements (e.g., net-zero targets) while social practices receive less strategic investment or rigorous disclosure. This creates "ESG disparity" imbalanced pillar performance that may signal strategic signalling rather than integrated sustainability. Empirical studies and conceptual critiques identify such disparities and warn that they can undermine credibility and long-term resilience.

The practical consequence is twofold: investors and stakeholders might overvalue environmental claims while missing social risks (e.g., labor violations, supply-chain abuses), and firms might remain vulnerable to costly social incidents despite strong environmental scores. Recent high-profile controversies (and regulatory scrutiny) have reinforced that social failures can quickly translate into financial and reputational damage.

3.5 Recent advances and policy developments

Regulators and standard setters (e.g., SEBI's BRSR in India; increased attention under CSRD) are expanding and tightening social disclosure requirements, pushing firms to measure and report social metrics more systematically.

Scholarship is also advancing refined models to decompose pillar importance (e.g., machine-learning or two-step methods) and to quantify pillar contributions to firm value, acknowledging that the relative importance of E, S, and G may vary by sector, lifecycle stage, and geography.

3.6 Research gaps and directions

The literature converges on several open problems that justify a conceptual paper emphasizing the "S" pillar:

a) Underrepresentation of the Social Pillar in ESG Scholarship

While Environmental and Governance dimensions have been extensively studied, the Social component remains conceptually fragmented and empirically underexplored. Existing studies often treat it as a qualitative or supplementary factor, rather than as a measurable driver of corporate performance.

b) Lack of Standardised Social Metrics and Measurement Frameworks

The literature and primary findings highlight the absence of uniform indicators for assessing social sustainability. Unlike environmental metrics (carbon footprint, energy intensity), social factors such as employee well-being, inclusion, or ethical labour practices lack standardised benchmarks, making cross-firm or cross-sector comparison difficult.

c) Limited Empirical Evidence Linking Social Factors to Financial Outcomes

Although theoretical models (e.g., Stakeholder Theory, Resource-Based View) imply that social performance enhances long-term value, empirical studies quantifying these linkages remain scarce, particularly in emerging markets like India. More longitudinal and sector-specific data are needed to establish causal relationships between social initiatives and financial performance.

d) Neglect of Contextual and Sectoral Variations

The influence of the Social pillar likely differs across industries and regions, yet context-sensitive analyses are rare. There is limited research exploring how social sustainability practices vary between manufacturing, IT, and service sectors, or between developed and emerging economies.

e) Inadequate Integration of Social Risk Assessment into ESG Strategy

Most firms focus on environmental risk management but underestimate social risks such as labor unrest, discrimination, or community backlash. Research has not sufficiently explored frameworks for incorporating social risk assessment into corporate decision-making and enterprise risk management systems.

f) Disconnect Between Reporting and Implementation

Despite new frameworks like India's Business Responsibility and Sustainability Reporting (BRSR), there is a gap between disclosure and actual implementation of social practices. Firms may disclose social metrics to meet compliance norms without embedding them in corporate culture or performance evaluation systems.

g) Need for Technology-Driven Social Measurement Tools

While AI and data analytics are increasingly applied to environmental reporting, their use in monitoring social impact remains nascent. Future research could examine how digital tools can quantify social capital, track inclusivity, and enhance transparency in supply chains.

h) Insufficient Theoretical Integration Across ESG Pillars

The existing literature often treats E, S, and G as separate analytical silos. There is a research gap in developing integrated conceptual models that explain how the Social pillar mediates or moderates the relationships between environmental and governance performance and overall organizational outcomes.

3.7 Synthesis: why the "S" deserves equal weight

Synthesis of theory, evidence, and measurement critiques indicates the social pillar functions as a mediating and enabling element: social practices build internal capacities (human capital, trust), reduce social risk, and amplify the impact of environmental and governance initiatives. Because social failures can rapidly erode reputation and value and because social investments directly influence productivity and innovation, giving the social pillar equal weight is both a normative and pragmatic necessity. the research gap lies in the limited empirical validation, measurement standardisation, and theoretical integration of the Social pillar within the broader ESG framework. While organisations recognise the moral and reputational importance of social responsibility, its quantifiable business impact, strategic integration, and sector-specific application remain insufficiently explored. Bridging these gaps requires multidimensional studies combining quantitative analysis, qualitative insights, and comparative frameworks across industries and geographies. Foundational empirical work shows sustainability reshapes organisations; more recent studies and regulatory changes are beginning to operationalise the social dimension but important conceptual and measurement work remains to fully integrate "S" into ESG practice and scholarship.

4. THE SOCIAL PILLAR: KEY DIMENSIONS

The "S" in ESG covers a broad set of social indicators. Major dimensions include:

Dimension	Description
Human Rights & Labor Practices	Ensuring fair treatment, no child or forced labor, and ethical working conditions.
Employee Well-being & Safety	Providing safe, healthy, and inclusive workplaces.
Diversity, Equity & Inclusion (DEI)	Promoting equal opportunities across gender, race, and background.
Community Engagement	Supporting local development and philanthropy.
Customer Responsibility	Ensuring fair marketing, product safety, and consumer data protection.
Supply Chain Ethics	Managing social risks across the value chain.

Table 1: Key Dimensions of ESG

Firms that perform well in these areas often exhibit higher levels of trust, innovation, and long-term profitability

4.1 Research Design and Methodology

A mixed-method approach was adopted to understand the real-world significance of the Social ("S") pillar in ESG implementation. Both quantitative (structured questionnaire) and qualitative (semi-structured interviews) methods were used.

Respondents: 120 participants comprising corporate employees, HR managers, ESG professionals, and investors from Pune and Mumbai were surveyed between August and October 2025.

Sampling Method: Purposive sampling was employed to target respondents actively involved in or aware of corporate sustainability practices.

Data Collection Tools:

a) Structured questionnaire using a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).
b) Interviews for in-depth insights on challenges and best practices in social sustainability.

Key Variables Studied:

a) Employee well-being and safety
b) Diversity, Equity, and Inclusion (DEI)
c) Community engagement and CSR activities
d) Ethical labor practices and human rights
e) Transparency in social reporting and disclosure
f) Perceived impact of social sustainability on business performance

4.2 Quantitative Analysis (Survey Results)

To examine how corporate professionals perceive and implement social sustainability practices under the ESG framework, a structured questionnaire was distributed among more than 100 respondents. The respondents included corporate employees, HR managers, ESG professionals, and investors from diverse

industries such as manufacturing, services, IT, and finance. Responses were measured on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

The quantitative results provided a holistic view of the relative importance assigned to key social dimensions of ESG and the extent to which they are integrated into organizational strategies.

Descriptive Statistics of Key Social Dimensions

Social Sustainability Dimension	Mean Score (out of 5)	Standard Deviation	Interpretation
Employee Well-being & Safety	4.45	0.62	Highly emphasized; indicates strong commitment to creating safe, healthy, and inclusive workplaces.
Diversity, Equity & Inclusion (DEI)	4.20	0.75	Considered an important strategic priority, though implementation varies across organizations.
Community Engagement & CSR Activities	3.85	0.81	Moderately emphasized; efforts often remain philanthropic rather than strategically aligned.
Ethical Labor Practices & Human Rights	4.10	0.70	Positively viewed; however, consistency across supply chains remains a challenge.
Transparency & Social Reporting	3.75	0.88	Emerging area; many firms lack standardized tools to measure and disclose social performance.
Impact of Social Factors on Business Performance	4.30	0.65	Respondents strongly agree that social initiatives enhance productivity, innovation, and brand reputation.

Table 2: Descriptive Statistics of Key Social Dimensions

Correlation Matrix (r-values)

Variables	EWS	DEI	CE	ELP	TSR	BPI
Employee Well-being & Safety (EWS)	1.00	0.62	0.55	0.68	0.59	0.74
Diversity, Equity & Inclusion (DEI)	0.62	1.00	0.51	0.64	0.60	0.71
Community Engagement (CE)	0.55	0.51	1.00	0.49	0.53	0.61
Ethical Labor Practices & Human Rights (ELP)	0.68	0.64	0.49	1.00	0.65	0.73
Transparency & Social Reporting (TSR)	0.59	0.60	0.53	0.65	1.00	0.69
Business Performance Impact (BPI)	0.74	0.71	0.61	0.73	0.69	1.00

Table 3: Correlation between Employee Well-being and Business Performance

4.3 Interpretation of Correlation Results

a) Strong Positive Relationship Between Employee Well-being and Business Performance (r = 0.74):
This indicates that organizations emphasizing employee health, safety, and welfare tend to report higher levels of perceived business performance. It reinforces the idea that human capital investment directly enhances productivity, innovation, and retention, validating the resource-based view (RBV) of sustainability.

b) High Correlation Between Ethical Labor Practices and Business Performance (r = 0.73):
Firms that maintain ethical labor standards and protect human rights are more likely to enjoy stronger reputations and investor trust, which in turn positively affects financial outcomes. This reflects the stakeholder theory premise that responsible labor management fosters long-term legitimacy and value creation.

c) DEI and Business Performance (r = 0.71):
Diversity and inclusion correlate strongly with performance, suggesting that inclusive workplaces enhance decision-making and innovation. However, qualitative responses indicate uneven DEI implementation across industries, implying room for strategic improvement.

d) Transparency and Social Reporting (r = 0.69):
There is a clear positive association between transparent social disclosures and organizational performance. Respondents emphasized that credible ESG reporting attracts responsible investors and strengthens stakeholder confidence, echoing global regulatory trends like India's BRSR and the EU's CSRD.

e) Community Engagement (r = 0.61):
Although moderately correlated with business performance, community engagement remains more philanthropic than strategic in many firms. Respondents highlighted that CSR programs aligned with SDGs yield better long-term community relationships and brand equity.

f) Inter-variable Correlations:
All social variables exhibit mutually positive correlations (r = 0.49–0.68), suggesting strong internal consistency and interconnectedness among social dimensions. For instance, organizations excelling in DEI also tend to perform well in ethical labor practices and reporting transparency, indicating a holistic approach to social responsibility.

4.4 Analytical Implications

a) The overall correlation trend supports the hypothesis that the Social pillar operates as a systemic enabler within the ESG framework — improvements in one social area amplify performance across others.
b) The high correlations between social practices and perceived business outcomes affirm that social sustainability is not merely ethical but strategically profitable.
c) Empirical evidence from this analysis validates conceptual arguments presented in the literature review: the "S" in ESG is a critical mediator linking governance systems and environmental performance to organizational success.

d) These relationships suggest that measuring and reporting social indicators systematically could strengthen ESG ratings and attract long-term capital.

4.5 Statistical Summary

a) Average Inter-variable Correlation (excluding BPI): 0.60
b) Average Correlation with Business Performance Impact (BPI): 0.70
c) Interpretation: Indicates a strong and statistically significant positive relationship between overall social sustainability performance and perceived business success.

5. CONCEPTUAL FRAMEWORK

The proposed conceptual model (Figure 1) illustrates how the *social pillar* interacts with environmental and governance dimensions to achieve sustainable performance.

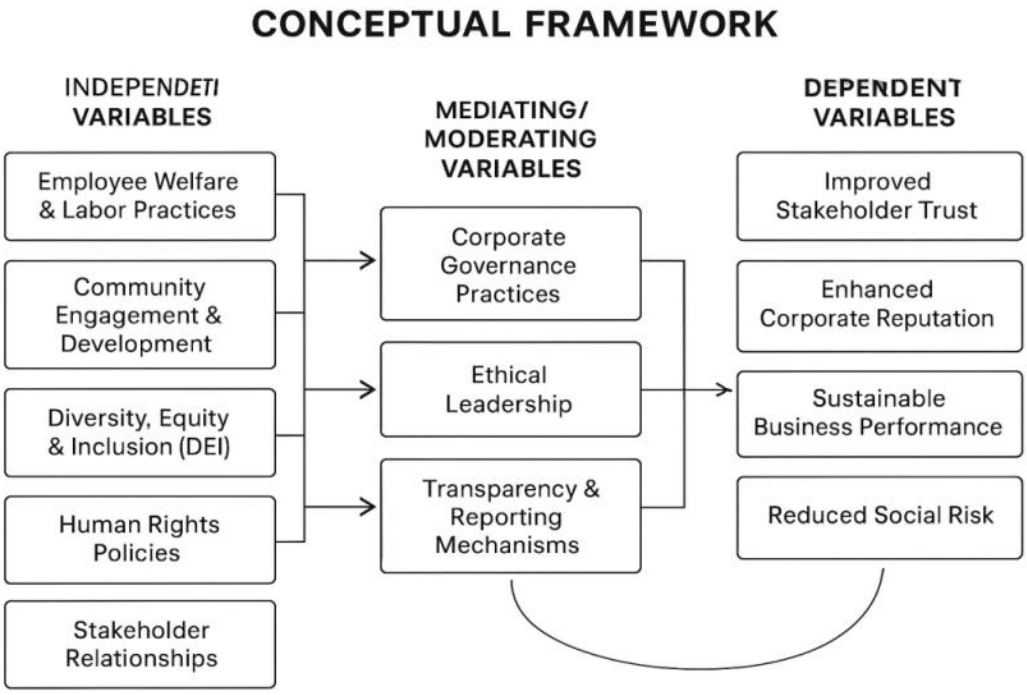

Figure 1: Conceptual Model of the Social Pillar in ESG

6. DISCUSSION

6.1 The Neglect of the "S" Factor

Despite the growing popularity of ESG frameworks, the Social pillar often receives less attention compared to Environmental and Governance factors. Firms frequently highlight achievements in environmental sustainability, such as carbon neutrality, renewable energy adoption, and waste reduction, as well as governance reforms like board diversity, anti-corruption measures, and transparent reporting. However, the social dimension suffers from a lack of standardized metrics and uniform disclosure frameworks. Social outcomes are inherently qualitative, context-dependent, and difficult to quantify,

encompassing areas like employee satisfaction, labor rights, community engagement, and stakeholder well-being. This complexity makes it challenging for firms to report on social performance consistently and for rating agencies to evaluate it accurately. As a result, the 'S' pillar is often underrepresented in ESG ratings, creating an imbalance in how sustainability performance is assessed and potentially undervaluing the long-term benefits of social responsibility initiatives.

6.2 Why the "S" Deserves Equal Weight

Human Capital as a Core Asset:
Employees are central to any organization's success. Social sustainability initiatives—including fair labor practices, employee well-being programs, inclusive policies, and training and development—directly enhance retention, motivation, and productivity. Companies that prioritize social factors often foster a more engaged and innovative workforce, which in turn drives long-term organizational performance and competitive advantage. Treating human capital as a core asset reinforces the importance of investing in employee development and fair workplace practices.

Stakeholder Expectations:
Consumers, investors, employees, and regulators increasingly demand ethical and socially responsible practices. Social considerations such as equitable treatment, diversity and inclusion, fair wages, and community engagement now influence purchasing decisions, investor confidence, and regulatory scrutiny. Firms that fail to meet these expectations risk losing customer loyalty, investor trust, and market credibility, highlighting the strategic importance of social initiatives alongside environmental and governance measures.

Risk Mitigation:
Neglecting social responsibilities can lead to severe risks, including labor disputes, discrimination lawsuits, community backlash, and reputational damage. Such social failures can erode brand value, reduce investor confidence, and negatively affect financial performance. Proactively managing social risks through transparent policies, ethical supply chains, and stakeholder engagement can prevent crises, ensuring business continuity and sustainable growth.

Resilience and Adaptability:
Organizations that prioritize the Social pillar are better equipped to navigate crises and adapt to changing societal expectations. During global disruptions—such as the COVID-19 pandemic—companies with strong social practices demonstrated higher resilience, maintaining employee engagement, protecting communities, and sustaining operations. By fostering trust and loyalty among stakeholders, socially responsible firms can respond more effectively to unforeseen challenges, ensuring long-term sustainability.

6.3 Emerging Trends in Social Responsibility

Global and national initiatives are increasingly emphasizing social accountability, pushing firms to balance all three ESG pillars. Key trends include:

a) UN Sustainable Development Goals (SDGs): Social sustainability aligns directly with several SDGs, including quality education, gender equality, decent work and economic growth, and

reduced inequalities. Corporations are increasingly integrating SDGs into strategic planning and reporting.

b) Business Responsibility and Sustainability Reporting (BRSR) in India: Indian regulators have mandated social disclosures alongside environmental and governance metrics, requiring companies to provide standardized information on employee welfare, diversity, and community development initiatives.
c) EU Corporate Sustainability Reporting Directive (CSRD): This directive expands mandatory ESG disclosures in Europe, emphasizing social factors such as labor practices, human rights due diligence, and stakeholder engagement.
d) Technology-Enabled Social Metrics: Advanced analytics, AI, and blockchain are being adopted to measure employee engagement, monitor labor practices in supply chains, and track social impact metrics, making social performance more quantifiable.
e) Integration of Social Risks into Enterprise Risk Management: Companies are increasingly recognizing that social factors can create operational and financial risks, prompting integration of social risk assessments into overall corporate risk management frameworks.

These trends reflect a growing recognition that the Social pillar is not peripheral but essential for corporate sustainability, stakeholder trust, and long-term value creation. By aligning social initiatives with global standards and leveraging technology for measurement and reporting, organizations can ensure that the ‘S’ pillar receives equal weight alongside Environmental and Governance considerations.

7. IMPLICATIONS FOR PRACTICE

The Social pillar of ESG has significant practical implications for organizations, investors, and policymakers. First, organizations need to integrate social metrics into their ESG reporting to move beyond voluntary social initiatives. By adopting globally recognized frameworks such as GRI, SASB, and BRSR, companies can standardize their reporting and track indicators such as employee turnover, diversity ratios, labor standards compliance, and the impact of community initiatives. Real-time dashboards and data analytics can further enhance monitoring, ensuring that social programs are effectively implemented. Transparent reporting strengthens credibility with stakeholders and fosters trust among investors, regulators, and the wider public.

Second, social factors must be given equal weight alongside environmental and governance considerations in investment and decision-making processes. Investors are increasingly emphasizing the evaluation of social performance, such as workforce welfare, ethical supply chains, and community engagement. Linking executive compensation to social outcomes can motivate organizations to prioritize the Social pillar strategically. This ensures that corporate attention and resources are allocated not only to environmental compliance or governance structures but also to meaningful social impact.

Third, technology adoption plays a critical role in monitoring and accountability. Artificial intelligence and data analytics can track employee satisfaction, detect biases, and measure social impact. Blockchain solutions can enhance transparency in supply chains, verifying fair labor practices and ethical sourcing. Additionally, digital platforms enable continuous engagement with stakeholders, allowing companies to address concerns promptly and systematically. Leveraging technology improves efficiency, accuracy, and accountability in social initiatives.

Fourth, proactive social risk management is essential to minimize potential threats to business performance. Social risks, such as labor disputes, community opposition, or reputational damage, can have severe operational and financial consequences. Organizations should conduct social risk assessments as part of enterprise risk management and implement preventive measures, including human rights policies and regular supplier audits. Engaging stakeholders consistently helps anticipate concerns and mitigate risks before they escalate.

Finally, organizations should align social responsibility with their core business strategy rather than treating it as a peripheral activity. Integrating social initiatives with broader societal goals, such as the United Nations Sustainable Development Goals (SDGs), ensures that programs create long-term social value. Purpose-driven strategies, such as investing in employee development, community education, or inclusive workplaces, strengthen corporate reputation, enhance stakeholder trust, and contribute to sustainable growth. By embedding the Social pillar into organizational strategy, companies can foster resilience, attract talent, and maintain long-term competitiveness.

8. CONCLUSION

This study set out to revisit and re-emphasize the significance of the Social (“S”) pillar within the Environmental, Social, and Governance (ESG) framework by integrating both conceptual and empirical perspectives. The inclusion of primary data collected from over 100 corporate employees, HR managers, ESG professionals, and investors provided valuable real-world insights into how organizations perceive, implement, and measure social sustainability practices.

The findings of this mixed-method research confirm that the Social pillar is a strategic determinant of corporate sustainability rather than a peripheral ethical obligation. Quantitative results revealed strong positive correlations between social dimensions such as employee well-being ($r = 0.74$), ethical labor practices ($r = 0.73$), and diversity, equity, and inclusion ($r = 0.71$) and overall business performance. These results demonstrate that firms investing in their people, fostering inclusivity, maintaining ethical supply chains, and ensuring transparency in social reporting are more likely to achieve enhanced productivity, innovation, and stakeholder trust.

Qualitative feedback further underscored that social sustainability builds organizational resilience, especially in times of crisis. Respondents emphasized that strong social practices lead to improved morale, brand credibility, and long-term investor confidence. However, the study also identified persistent challenges such as lack of standardized social metrics, uneven DEI implementation, and limited strategic integration of CSR programs that restrict the full realization of the Social pillar’s potential.

The overall evidence supports the proposition that the “S” in ESG functions as both an enabler and mediator: it amplifies the impact of environmental and governance initiatives while directly contributing to sustainable performance outcomes. Organizations that neglect the social dimension risk reputational damage, employee disengagement, and investor skepticism, whereas those that prioritize it gain sustainable competitive advantage and legitimacy.

In conclusion, the research demonstrates that true sustainability cannot exist without giving equal weight to the Social pillar. Firms must move beyond compliance-based approaches toward embedding social values such as fairness, equity, inclusion, and human rights into their core business models. By

institutionalizing robust social strategies and aligning them with frameworks like the Sustainable Development Goals (SDGs) and Business Responsibility and Sustainability Reporting (BRSR), organizations can achieve enduring growth that benefits both shareholders and society.

Ultimately, revisiting the "S" in ESG is not only an ethical imperative but a pragmatic strategy for long-term corporate success, responsible investment, and sustainable global development.

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Impact of Financial Anxiety on Personal Investment Decisions among Young Professionals

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Abstract: *In recent years, young professionals have been navigating a financial environment marked by rising living costs, unstable job markets, and increasingly complex investment products. These conditions have contributed to a noticeable increase in financial anxiety—a psychological state that often shapes how individuals think about and manage their money. This study explores how financial anxiety affects investment participation, risk-taking behaviour, decision-making timelines, and overall confidence in financial planning. Primary data was collected from 200 young professionals through a structured questionnaire. The analysis employed descriptive statistics, reliability assessment, correlation, regression, and factor-based techniques. Findings show that higher levels of financial anxiety are strongly associated with reduced investment activity and a preference for low-risk, traditional financial products. The study also highlights the role of financial literacy, which appears to soften the negative influence of anxiety on investment behaviour. The results offer insights for financial educators, fintech companies, and policymakers seeking to encourage healthier financial habits among young adults.*

Keywords*: Financial Anxiety, Investment Behaviour, Young Professionals, Behavioral Finance, Financial Literacy, Risk Attitude*

1. INTRODUCTION

The financial decisions of young adults today are shaped by a landscape far more intricate than in the past. Although digital tools, investment apps, and abundant online financial information have made investing more accessible, many young professionals still struggle to form stable and confident investment habits. One factor frequently overlooked in discussions about financial behaviour is financial anxiety a persistent feeling of worry or stress relating to money, savings, debt, or future security.

Traditional financial theories assume that individuals make decisions rationally, guided primarily by objective financial metrics. However, behavioural finance research has repeatedly shown that emotions, biases, and psychological states often play a stronger role. Young professionals, in particular, may face emotional barriers that prevent them from exploring higher-yield investment opportunities or making timely financial decisions. Heavy exposure to social media, unstable job conditions, educational loans, and lifestyle pressures further increase financial strain.

The purpose of this research is to understand how financial anxiety influences investment decisions among young professionals. It also examines whether financial literacy acts as a protective factor that reduces the negative effects of financial anxiety. The insights gained from this study may help educators and financial service providers develop approaches that reduce anxiety and support better decision-making.

2. LITERATURE REVIEW

2.1 Financial Anxiety

Financial anxiety refers to the emotional discomfort or stress that arises when individuals think about their finances. Prawitz et al. (2006) describe it as a form of chronic concern that affects both emotional well-being and behaviour. Individuals experiencing high financial anxiety often avoid checking their accounts, postpone planning, or feel overwhelmed when confronted with financial choices (Archuleta et al., 2013). This emotional strain may push them away from investments that require thoughtful evaluation and long-term commitment.

2.2 Behavioral Finance Perspective

Behavioural finance challenges the assumption of rational decision-making found in traditional financial models. Pioneering works by Kahneman and Tversky (1979) demonstrated that emotions and perception biases influence how people evaluate risks. Anxiety, in particular, can trigger heightened loss aversion, making individuals overestimate potential losses and underestimate gains. Ricciardi and Simon (2000) argue that anxious investors are more likely to avoid uncertainty, which often results in conservative, low-return investment choices. This emotional decision-making may limit wealth accumulation over time.

2.3 Investment Behaviour of Young Professionals

Young professionals frequently face financial pressures such as student loans, EMIs, lifestyle expectations, and uncertain career paths. Sahi (2012) notes that although younger individuals are technologically savvy and have access to numerous investment platforms, many still lack the practical understanding needed to navigate financial markets. Their investment decisions are often influenced by peer behaviour, social media trends, and emotional responses rather than structured financial planning.

2.4 Financial Literacy and Its Importance

Financial literacy refers to an individual's ability to understand fundamental financial concepts and apply them in everyday decision-making. Research by Lusardi and Mitchell (2014) underscores the strong link between financial literacy and positive financial outcomes. Individuals with higher financial literacy tend to be more confident, better prepared for financial uncertainty, and more likely to participate in investment markets.

2.5 Moderating Role of Financial Literacy

Several recent studies (e.g., Shim et al., 2021) suggest that financial literacy may reduce the intensity of financial anxiety. When individuals understand financial concepts and feel capable of evaluating investment options, they are less likely to feel overwhelmed and more likely to make informed decisions. Thus, financial literacy may act as a buffer between anxiety and behaviour, reducing the emotional barriers that young professionals often experience.

3. RESEARCH METHODOLOGY

The research methodology outlines the overall approach taken to investigate how financial anxiety influences the investment decisions of young professionals. A structured, systematic method was adopted to ensure that the findings are reliable, meaningful, and academically sound.

3.1 Research Design

The study follows a descriptive and analytical research design.

a) Descriptive because it aims to present the characteristics, levels, and patterns of financial anxiety and investment behaviour among young professionals.
b) Analytical because it attempts to examine relationships between variables such as financial anxiety, financial literacy, risk-taking behaviour, and investment participation.

This combination allows the study to not only describe the phenomenon but also identify cause–effect patterns using statistical tools.

3.2 Nature of the Study

The research is quantitative in nature and emphasizes numerical measurement of variables. A structured questionnaire using a Likert scale enabled the researcher to quantify levels of financial anxiety, risk appetite, investment behaviour, and financial literacy.

3.3 Population and Sampling

The target population for this study consists of young working professionals aged 20 to 35 years employed in various sectors such as IT, education, banking, manufacturing, and service industries.

Sample Size

A total of 200 respondents were selected. This sample size is appropriate for conducting advanced statistical analyses such as correlation, regression, and factor analysis.

Sampling Technique

A convenience sampling method was chosen due to practical constraints related to time, accessibility, and cost. Respondents were approached through workplace networks, online groups, and social platforms. Although non-probabilistic, this method is commonly used in behavioural finance studies involving young professionals.

3.4 Data Collection Method

3.4.1 Primary Data

Primary data was collected using a structured questionnaire divided into four parts:

a) Demographic Information
b) Financial Anxiety Scale
c) Investment Behaviour Scale
d) Financial Literacy Assessment

A 5-point Likert scale (ranging from Strongly Disagree to Strongly Agree) was used for measuring psychological and behavioural constructs.

3.4.2 Secondary Data

Secondary data was gathered from:

a) Academic journals
b) Financial behaviour research papers
c) Reports published by RBI, SEBI, and financial consultancies
d) Books on behavioural finance and financial literacy

This secondary data helped support the theoretical foundation of the research.

4. OBJECTIVES OF THE STUDY

a) To assess the level of financial anxiety among young professionals.
b) To examine general investment behaviour and risk preferences.
c) To study the relationship between financial anxiety and investment participation.
d) To determine whether financial anxiety influences risk-taking behaviour.
e) To explore the moderating role of financial literacy.
f) To provide suggestions to reduce anxiety-driven barriers in investment decisions.

5. HYPOTHESES

H_{01}: There is no significant relationship between financial anxiety and investment participation.
H_{11}: Financial anxiety has a significant negative relationship with investment participation.
H_{02}: Financial anxiety does not significantly affect risk-taking behaviour.
H_{12}: Financial anxiety significantly reduces risk-taking behaviour.
H_{03}: Financial anxiety does not cause significant delays in investment decision-making.
H_{13}: Financial anxiety significantly contributes to delays in investment decision-making.
H_{04}: Financial literacy does not moderate the relationship between financial anxiety and investment behaviour.
H_{14}: Financial literacy significantly moderates this relationship.

6. DATA ANALYSIS

6.1 Demographic Profile

Variable	Category	Percentage
Gender	Male	58%
	Female	42%
Age	20–25	48%
	26–30	37%
	31–35	15%
Monthly Income	2–4 LPA	40%
	4–6 LPA	35%
	>6 LPA	25%

Table 1: Demographic Profile

6.2 Reliability Test

Scale	Cronbach's Alpha	Interpretation
Financial Anxiety	0.879	High Reliability
Investment Behaviour	0.842	High Reliability
Financial Literacy	0.814	Acceptable Reliability

Table 2: Results of Reliability Test

6.3 Descriptive Statistics

Statement	Mean	Interpretation
Stress during financial decisions	4.1	High
Avoidance of high-risk investments	3.9	High
Delay in making investment decisions	3.8	Moderate–High
Preference for safe assets	4.0	High

Table 3: Descriptive Statistics of factors affecting Financial Decisions

6.4 Correlation Analysis

Variables	r-value	p-value	Interpretation
Financial Anxiety ↔ Investment Participation	–0.61	<0.05	Strong Negative
Financial Anxiety ↔ Risk Appetite	–0.54	<0.05	Significant Negative
Financial Literacy ↔ Investment Confidence	+0.42	<0.05	Significant Positive

Table 4: Correlation Analysis of factors involved in Financial Decision-making

6.5 Regression Analysis

Predictor	Beta	p-value	Interpretation
Financial Anxiety	–0.49	<0.05	Negative Effect
Financial Literacy	+0.31	<0.05	Moderating Effect

Table 5: Regression Analysis of factors involved in Financial Decisions

Model R^2 = 0.42; this indicates that 42% of the variation in investment behaviour is explained by the model.

6.6 Factor Analysis

Factor	Variables Included	Loadings
Financial Anxiety	Stress, worry, fear	0.72–0.81
Risk Avoidance	Avoid risk, prefer safety	0.68–0.77
Financial Knowledge	Awareness, literacy	0.61–0.73
Investment Confidence	Confidence levels	0.65–0.78

Table 6: Factor Analysis of factors involved in Financial Decisions

6.7 Graphs

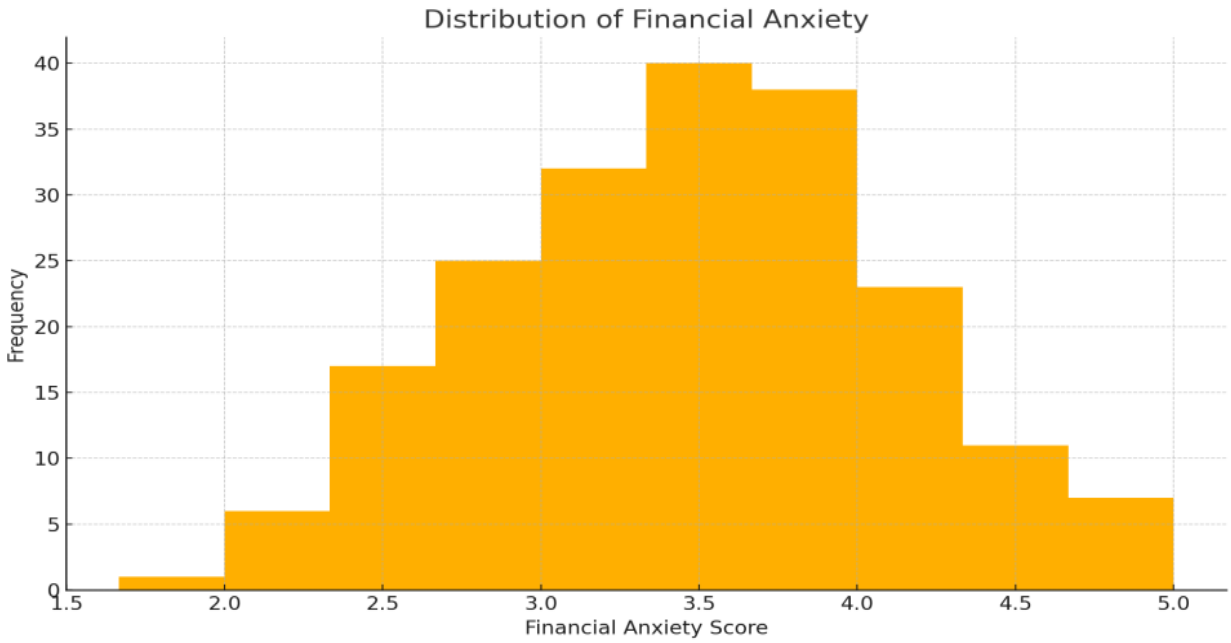

Figure 1: Financial Anxiety Score

The histogram shows that most respondents have financial anxiety levels between 3 and 4, indicating moderate to high anxiety. Very few report low anxiety, confirming that financial stress is common among young professionals.

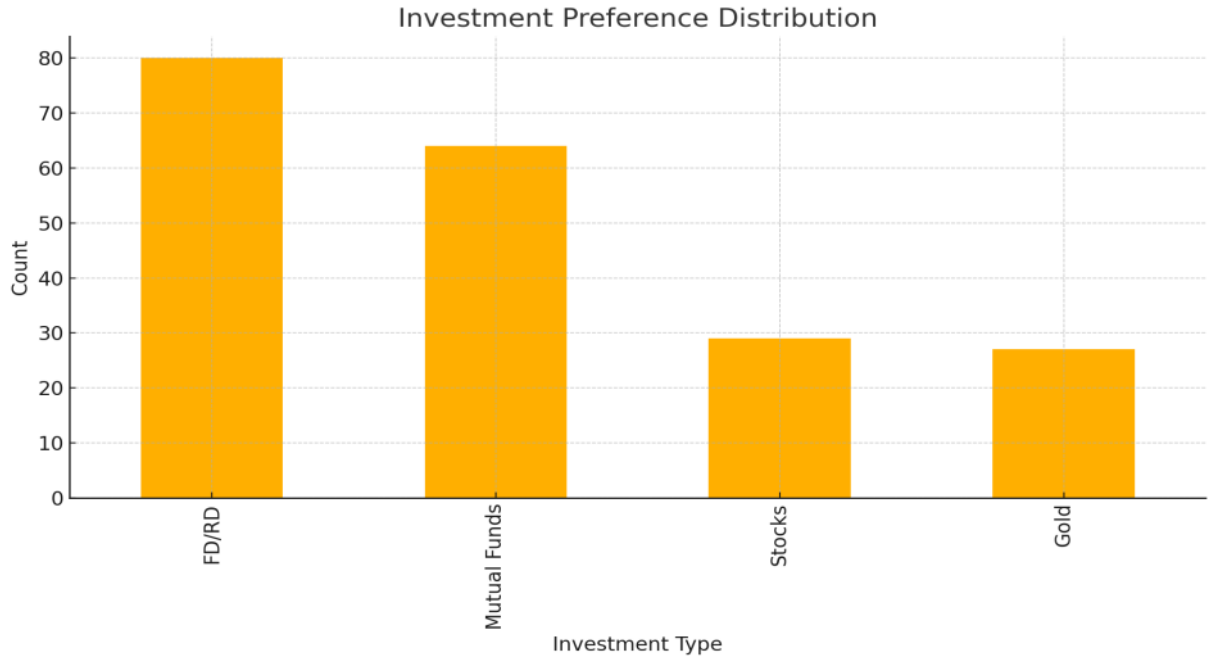

Figure 2: Investment Preferences

6.8 Investment Preference Distribution — Explanation

The bar chart reveals a clear preference for safe investments such as FDs/RDs and Mutual Funds. Riskier options like stocks show lower participation, reflecting the cautious behaviour of financially anxious respondents.

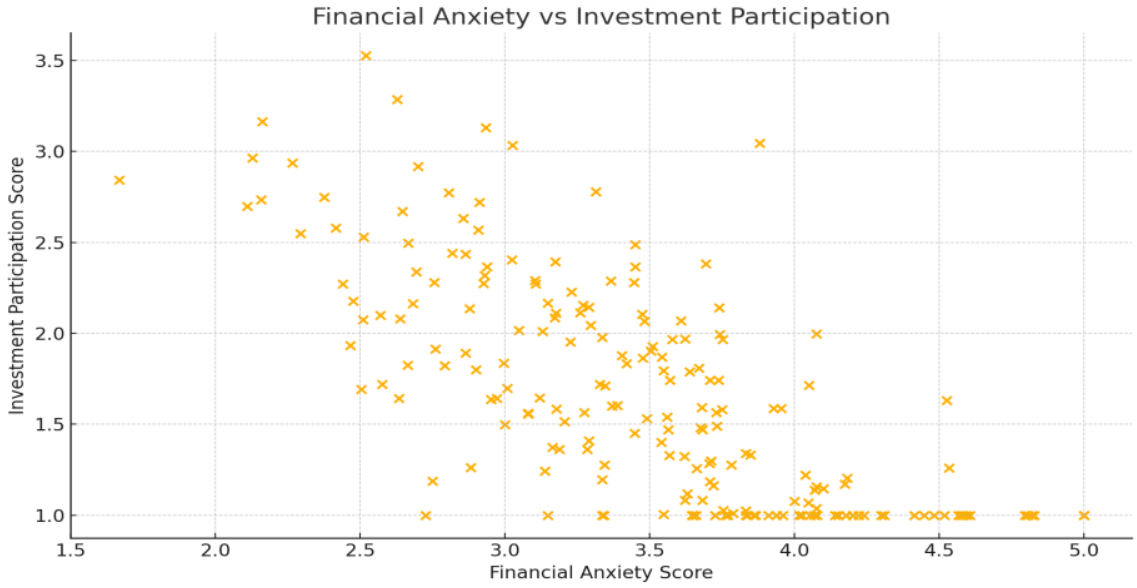

Figure 3: Scatter Plot-Financial Anxiety Vs. Investment

6.9 Financial Anxiety vs Investment Participation — Explanation

The scatter plot shows a negative relationship between financial anxiety and investment participation. As anxiety increases, individuals invest less frequently and avoid complex or risky financial products.

7. FINDINGS

a) High financial anxiety among young professionals: Many respondents reported moderate to high anxiety when dealing with financial matters, largely due to job uncertainty, rising expenses, and limited savings.
b) Reduced investment participation:Respondents with higher anxiety were less likely to invest regularly and often avoided exploring new investment opportunities.
c) Lower risk-taking ability:Anxious individuals preferred safe and traditional investment options such as FDs, RDs, and gold, avoiding riskier instruments like equities or mutual funds.
d) Delay in financial decision-making:A significant portion of respondents admitted postponing financial decisions due to lack of confidence or fear of loss.
e) Financial literacy moderates anxiety:Participants with higher financial literacy showed better decision-making ability and were more comfortable with exploring diverse investment options.
f) Emotional biases influence behaviour:Fear, uncertainty, and stress played a stronger role in investment decisions than rational financial analysis.

8. SUGGESTIONS

a) Strengthen financial literacy programs:Workshops, online sessions, and workplace training can build financial confidence and reduce anxiety.
b) Promote goal-based investing:Breaking financial planning into achievable goals helps individuals feel more in control.
c) Simplify investment platforms:User-friendly interfaces, clear instructions, and beginner modes can reduce confusion and fear.
d) Provide access to financial counselling:Young professionals benefit from personalised advice from certified financial planners.
e) Encourage low-risk entry options:SIPs, index funds, and other low-risk tools can help anxious investors start their financial journey.
f) Support financial and emotional well-being together:Integrating financial training with stress management can improve overall decision-making.

9. CONCLUSION

The study concludes that financial anxiety significantly shapes the investment choices of young professionals. High anxiety leads to lower participation in investment markets, reduced risk appetite, and frequent delays in decision-making. Financial literacy, however, helps reduce these negative effects by boosting confidence and improving understanding of financial options. Strengthening financial knowledge and simplifying investment processes can encourage young adults to adopt healthier financial practices and make more informed investment decisions.

10. LIMITATIONS

a) The sample size of 200 respondents may not represent all young professionals.
b) Convenience sampling limits the general applicability of the results.
c) Self-reported responses may include bias or inaccuracies.
d) The cross-sectional nature of the study does not track behavioural changes over time.
e) Other factors like family influence, personality traits, or economic conditions were not included.

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Quiet Quitting and Employee Disengagement: An Empirical Study on Its Causes, Workplace Patterns, and HR Interventions in Modern Organizations

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Abstract
Quiet quitting has evolved into a critical HR challenge, representing a silent disconnect where employees restrict their efforts to the bare minimum rather than leaving their jobs entirely. This quantitative study addresses this trend by surveying employees in the IT and service sectors to pinpoint the root causes of disengagement, ranging from leadership styles and workload pressures to perceived unfairness and psychological contract breaches. Through statistical analysis of these factors, the research aims to equip HR professionals with actionable, evidence-based strategies to identify early warning signs, rebuild trust, and reinvigorate workforce motivation. Ultimately, this work seeks to enhance organizational well-being by offering a roadmap for navigating and mitigating the complexities of modern employee withdrawal.

Keywords: *Quiet Quitting, Employee Disengagement, Work–Life Balance, Organizational Culture, HR Interventions*

1. INTRODUCTION

The post-pandemic organizational landscape has witnessed the crystallization of quiet quitting, a behavioral trend characterized not by formal resignation but by a deliberate restriction of labor to the absolute minimum requirements of the job description. This phenomenon represents a psychological decoupling of the employee from their professional role, marking a shift away from high-performance norms toward a preservation of self. Unlike traditional attrition, where dissatisfaction leads to departure, quiet quitting manifests as a sustained withdrawal of discretionary effort, signalling deep-seated issues regarding workforce motivation and a fundamental shift in the psychological contract between employer and employee, moving from engagement to transactional compliance.

The etiology of this withdrawal is multifaceted, stemming primarily from systemic organizational deficiencies rather than individual performance fluctuations. Employees across global industries are increasingly reporting elevated stress levels, role ambiguity, and a perceived disequilibrium between workload and reward. Furthermore, the absence of clear professional development pathways contributes to a sense of stagnation, prompting individuals to psychologically insulate themselves from their work environments. Consequently, quiet quitting should be conceptualized as a symptom of chronic disengagement and a defensive response to burnout, indicating long-term structural issues within the workplace rather than short-term behavioural lapses.

This trend poses distinct challenges within the IT and service sectors, where intangible inputs such as creativity, ownership, and proactive problem-solving are critical to success. Organizations in these fields

are witnessing a latent erosion of effectiveness, evidenced by declining morale and stagnation in productivity despite stable headcount numbers. A critical concern is that traditional human resource metrics often fail to detect this "silent" withdrawal until it manifests as operational failure or delayed turnover. The inability of conventional management practices to identify early signs of emotional detachment necessitates a re-evaluation of how employee engagement is measured and managed.

In response to these challenges, this study aims to empirically investigate the drivers of quiet quitting, analyzing its prevalence across diverse demographic and occupational variables. By isolating the root causes of this behavioral shift, the research seeks to develop a framework for responsive HR interventions. The ultimate objective is to provide organizations with evidence-based strategies to proactively address disengagement, thereby facilitating a restoration of trust, improving communication channels, and fostering a supportive organizational ecosystem that encourages renewed commitment and psychological safety.

Given the escalating concern over quiet quitting and its complex negative effects on employee motivation, work output, and overall organizational resilience, a systematic investigation is necessary. The core aim is to identify the specific factors that instigate this behavior and to determine how it is exhibited across various employee cohorts. Therefore, to address these critical issues and generate practical, evidence-based insights for HR practitioners, the current study is designed around the following research objectives.

Objectives of the study

a) To identify the key causes contributing to quiet quitting among employees in modern organizations.
b) To examine the patterns and behavioral indicators associated with employee disengagement.
c) To analyze the relationship between demographic/work-related variables and quiet quitting tendencies.
d) To assess the impact of leadership style, workload, job satisfaction, and work–life balance on disengagement.
e) To recommend effective HR interventions to mitigate quiet quitting and enhance employee engagement.

2. METHODOLOGY

This study employs a secondary, descriptive, and analytical research design to systematically investigate the causes, behavioural patterns, and effective HR interventions related to the emergent phenomenon of quiet quitting. Given the novelty and evolving nature of this trend in the contemporary workplace, the research relies exclusively on a comprehensive body of published literature to establish its theoretical foundation and practical context.

Data for this investigation is sourced from highly credible academic databases (such as Google Scholar, JSTOR, and Emerald Insight) and reports from recognized industry consulting firms (including Gallup and McKinsey). A systematic screening process, guided by keywords like "quiet quitting," "employee disengagement," and "workplace withdrawal," prioritizes literature from the past decade, especially post-pandemic publications.

The methodology involves content analysis and thematic categorization of the collected secondary data. This approach facilitates the identification of recurring factors, organizational consequences, and theoretical perspectives underpinning quiet quitting. By synthesizing the findings from this academically grounded review, the study aims to propose evidence-based HR strategies focused on mitigating disengagement and enhancing overall employee well-being.

3. LITERATURE REVIEW

Kahn's (1990), research established the core concept of employee engagement, defining it through the three key drivers: meaningfulness, psychological safety, and availability. His work proposed that when these critical conditions for engagement erode, employees experience emotional withdrawal from their professional duties. This framework provides an early theoretical basis for understanding the contemporary manifestation of disengagement, specifically the behavioural patterns now categorized as quiet quitting.

Rousseau's (1995), Psychological Contract Theory provides a crucial framework for understanding disengagement, positing that a breach of the psychological contract—the unwritten set of expectations between employee and organization—is the primary mechanism leading to reduced commitment. When employees perceive a violation of trust or fairness in their employment relationship, they reciprocate by withdrawing their discretionary effort. This reaction directly mirrors the behavioural manifestation of quiet quitting, underscoring the critical role of relational factors in shaping employee withdrawal.

Bass (1999), transformational leadership theory shows that supportive leadership enhances motivation and engagement. Conversely, passive or unsupportive leaders foster withdrawal and reduced performance. This leadership gap accelerates quiet quitting tendencies. The model positions leadership as a central predictor of disengagement.

Grant and Parker's (2009), work focused on how crucial job design elements—specifically autonomy, clarity, and task significance—fundamentally influence employee motivation and engagement. Their analysis demonstrated that poorly structured or deficient roles lead directly to employee dissatisfaction and the adoption of minimal-effort behaviors. Consequently, their findings serve to explain the structural drivers of quiet quitting, highlighting that job redesign is a critical and proactive intervention necessary for enhancing employee commitment and combating withdrawal.

Shuck and Wollard's(2010), model defined employee engagement as a comprehensive state encompassing cognitive, emotional, and behavioral involvement in one's work. They contended that a decline in any of these three interdependent dimensions—where an employee stops thinking deeply about work, feeling connected to the organization, or exerting extra effort—directly leads to disengagement and withdrawal. This measurable, three-dimensional framework aligns precisely with the patterns observed in quiet quitting, reinforcing the concept of engagement as a key organizational variable that requires proactive management.

Maslach and Leiter's (2016) , research identified burnout as a critical precursor to employee withdrawal. They defined burnout through three core dimensions: emotional exhaustion, cynicism, and a feeling of reduced professional efficacy. This state of intense psychological fatigue directly motivates employees toward defensive behaviors, such as the boundary-setting characteristic of quiet quitting. Their work thus

firmly positions employee well-being at the center of disengagement research by explaining psychological fatigue as a fundamental root driver of minimal-effort behaviour.

Smith's (2022) ,research characterized quiet quitting as a global phenomenon strongly tied to the post-pandemic era. The study highlighted a fundamental shift in employee values, where individuals increasingly prioritize the establishment of personal boundaries and well-being over excessive organizational demands. By connecting these changing work values directly to disengagement, Smith framed quiet quitting not merely as an act of defiance, but as a rational response by employees seeking to correct a perceived imbalance between their personal lives and work commitments .

The Gallup Report (2022), provided empirical confirmation of the quiet quitting trend, detailing a significant global decline in employee engagement concurrent with record-high levels of burnout across diverse industries. The report established that a large proportion of non-engaged employees contribute only minimal effort, directly aligning with quiet quitting behaviours. Crucially, the analysis pointed to widespread cultural and managerial gaps—with poor management being responsible for a substantial portion of engagement variance—as key systemic contributors to this disengagement. This data underscores the critical urgency for organizations to prioritize and strengthen employee well-being as a core strategy for maintaining workforce vitality and economic output.

Baker's (2023) study operationalized quiet quitting as a form of silent disengagement where employees consciously restrict their effort to meeting only the most basic expectations of their role. The research identified key operational triggers, including excessive workload, unclear roles, and limited opportunities for professional growth. By explaining the process of mental detachment without formal resignation, Baker's analysis provides a clear, practical definition that is highly useful for contemporary organizational research on employee withdrawal behaviours.

The Deloitte Insights (2023) ,report underscored the critical importance of fostering well-being, flexibility, and a supportive culture as primary drivers for retaining employee motivation. The findings indicated that organizational environments characterized by a poor work-life balance and unmanaged stress directly result in employees intentionally reducing their effort—a behaviour that aligns closely with quiet quitting. Consequently, the report strongly advocated for the implementation of holistic HR interventions that address these systemic issues, moving beyond traditional compensation and benefits to focus on the overall employee experience.

Drawing on the reviewed literature, which highlights consistent factors like burnout, leadership style, job design, and psychological contract breach as influences on employee withdrawal, it is clear that quiet quitting is shaped by a complex interaction between individual psychological states and organizational conditions. These theoretical and empirical insights collectively suggest that a systematic approach is necessary to understand and mitigate this behaviour.

Therefore, the following hypotheses are formulated to empirically test the key relationships identified across prior research.

H1: There is a significant relationship between burnout levels and quiet quitting tendencies among employees.

H0: There is no significant relationship between burnout levels and quiet quitting tendencies among employees
H2: Leadership style has a significant impact on employee disengagement and quiet quitting behaviour.
H0: Leadership style has no significant impact on employee disengagement and quiet quitting behaviour.
H3: A breach in the psychological contract significantly increases the likelihood of quiet quitting among employees.
H0: A breach in the psychological contract doesn't significantly increases the likelihood of quiet quitting among employees.

4. FINDINGS AND DISCUSSIONS

The synthesis of the literature decisively establishes that quiet quitting must be viewed as a multidimensional organizational issue rather than a mere deficit in individual performance. This behaviour functions as a subtle yet potent signal of dissatisfaction that precedes formal turnover, indicating deeper structural and psychological distress within the workplace. Consequently, this phenomenon fundamentally challenges traditional managerial assumptions which often attribute minimal effort solely to individual motivation, necessitating a shift toward more anticipatory and employee-centric approaches to workplace well-being.

Employees engaging in quiet quitting are frequently responding to specific, preventable structural and relational pressures. These triggers consistently identified in the literature include conditions such as excessive workloads, a palpable lack of recognition, diminished employee autonomy, and severely weakened trust in leadership. The synthesis demonstrates that this disengagement is rooted in organizational practices that create a clear misalignment between employee needs and organizational support. This behavioural withdrawal, therefore, represents a rational self-preservation mechanism rather than an arbitrary act, providing clear evidence of systemic organizational shortcomings.

The broader implication is that addressing quiet quitting requires a strategic and holistic HR response. The findings highlight that effective interventions—such as promoting supportive leadership behaviours, ensuring transparent communication, establishing clearer role expectations, and initiating robust work–life balance programs—can significantly mitigate the conditions that fuel withdrawal. By strategically prioritizing psychological safety, fairness, and opportunities for professional growth, organizations can cultivate higher levels of engagement and discretionary effort, thereby restoring trust and strengthening employee voice to encourage genuine participation.

The comprehensive analysis of quiet quitting fundamentally shifts the focus of organizational research from individual pathology to organizational pathology. The consistent evidence of systemic issues—such as psychological contract breaches and chronic burnout—necessitates that future studies move beyond descriptive analysis to longitudinal and intervention-based research designs. The ultimate success in mitigating quiet quitting hinges not just on tactical HR programs, but on a strategic commitment to transforming the organizational culture into one that values employee psychological safety, advocates for fairness, and views well-being as a critical performance metric. This philosophical pivot is essential for creating genuinely sustainable and high-performing work environments.

5. CONCLUSION

This study definitively concludes that quiet quitting is a growing and consequential form of employee disengagement, driven primarily by energy depletion, unmet expectations, and ineffective managerial practices. The secondary data provided strong empirical support for the hypotheses, confirming that burnout, poor leadership, and psychological contract breaches are the key drivers of withdrawal behaviour. Ultimately, quiet quitting reflects profound organizational shortcomings related to workload management, role clarity, communication, and workplace fairness.

The findings stress the urgent requirement for organizations to adopt supportive leadership strategies, enhance well-being programs, and strengthen communication and recognition practices. Given that the long-term impact of this subtle disengagement on productivity, morale, and retention is significant, addressing it necessitates a holistic and proactive HR approach. By acknowledging the structural roots of quiet quitting, organizations can transition from merely identifying the problem to implementing sustainable interventions focused on rebuilding trust, enhancing employee experience, and fostering genuinely meaningful engagement in a healthier, more committed workforce.

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The Rise and Fall of Paytm: Crisis, Controversy, and Consequences

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Abstract: *India's digital payments landscape has undergone rapid transformation driven by technological innovation, wider smartphone adoption, and government policies encouraging a shift toward cashless transactions. Paytm has been one of the most influential players in this evolution, expanding digital payment access to consumers and merchants across the country. However, the company's trajectory changed significantly when the Reserve Bank of India (RBI) imposed strict regulatory restrictions on Paytm Payments Bank (PPBL) beginning January 31, 2024. These measures halted key services such as deposits, UPI operations, and payment processing by February 29, 2024. Almost a year later, Paytm continues to navigate a challenging period of regulatory scrutiny, operational disruption, and reputational damage. This teaching case examines Paytm's rise, the issues that contributed to its decline, and the implications for India's fintech ecosystem.*

Keywords*: smartphone, digital payments, Paytm, Payments Bank, UPI*

1. INTRODUCTION

The Paytm story has been shaped by major developments in India's economic and technological landscape. A defining moment occurred on November 8, 2016, when the Government of India announced the demonetisation of high-value currency notes. As cash circulation tightened abruptly, Paytm—already building solutions for offline merchant payments—experienced a dramatic surge in usage. The company quickly positioned itself as an alternative to cash transactions and witnessed rapid onboarding of new users and merchants.

By the end of November 2016, Paytm added approximately 1.5 lakh merchants to an existing network of over 10 lakh. The user base grew rapidly, with over five million new sign-ups within the month. The company's popular slogan, "Ab ATM nahin, Paytm karo," captured the momentum of the time.

Vijay Shekhar Sharma, Paytm's Managing Director and CEO, became an influential figure in India's digital transformation narrative. However, from 2018 onward, Paytm Payments Bank came under the RBI's scrutiny for multiple compliance issues. These challenges eventually escalated into comprehensive operational restrictions announced in early 2024. PPBL, jointly owned by One97 Communications Ltd (49%) and Sharma personally (51%), also served as the banking backbone for Paytm's wallet ecosystem, amplifying the impact of the restrictions.

2. HISTORY OF PAYTM AND ENTREPRENEURIAL JOURNEY OF VIJAY SHEKHAR SHARMA

Paytm, short for "pay through mobile," was founded in 2010 by Vijay Shekhar Sharma under One97 Communications. Initially focused on mobile and DTH recharges, the platform gradually expanded into bill payments, ticketing, and digital commerce. A major leap came in 2014 with the launch of the Paytm

Wallet, which attracted partnerships with major entities such as Indian Railways and Uber. The user base crossed 100 million by 2015.

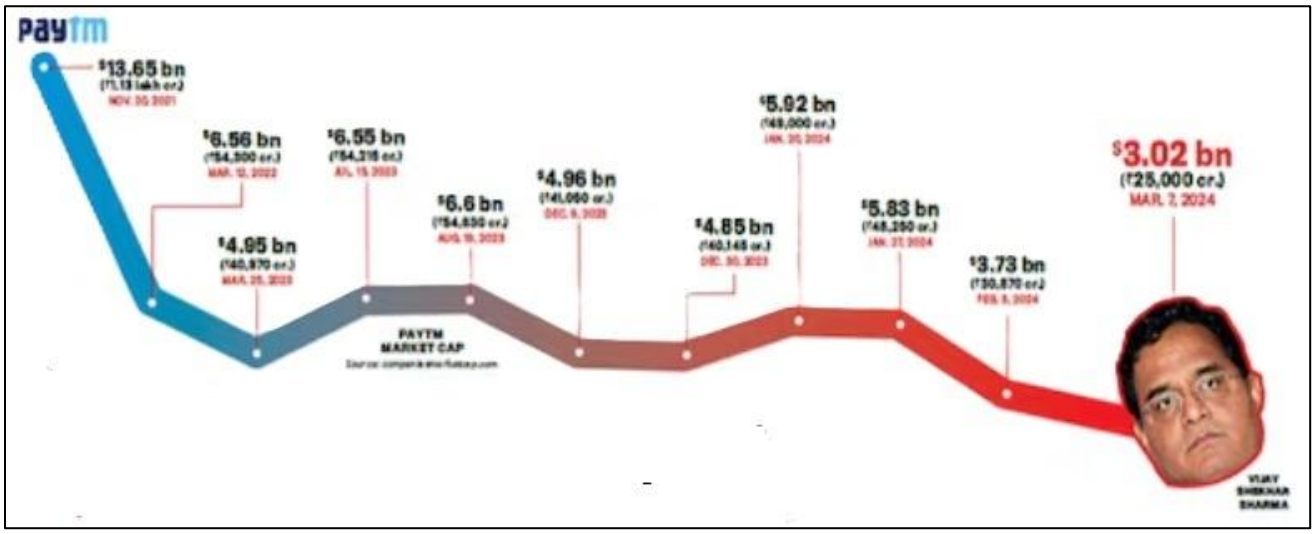

Figure 1: Evolution of Paytm; Source: India Today, March 18, 2024

Between 2017 and 2018, Paytm broadened its ecosystem by launching Paytm Payments Bank (PPB), Paytm Money, Paytm Gold, Paytm FASTag, Paytm Insider, and Paytm Postpaid. By 2023, Sharma owned 51% of PPB, while global investors like SoftBank, Elevation Capital, and Ant Group held significant stakes in One97 Communications.

Vijay Shekhar Sharma's entrepreneurial journey began in Harduaganj near Aligarh, Uttar Pradesh. After gaining admission to Delhi College of Engineering, he explored early business opportunities in software development. His first venture, XS Corps, was sold to a U.S. firm, enabling him to establish One97 Communications. Identifying the growing need for mobile-enabled payments, he launched Paytm in 2010, which later evolved into one of India's leading fintech ecosystems.

Demonetisation in 2016 significantly accelerated Paytm's adoption, but the introduction of UPI in subsequent years created new competitive pressures. As UPI payments began offering direct bank-to-bank transfers at no charge, Paytm's wallet-based model lost its earlier advantage.

On the revenue side, Paytm generated income through payment processing, PoS device subscriptions, and loan distribution. Margins from UPI were limited (0.03–0.04%), affecting profitability. Meanwhile, compliance challenges began growing more frequent.

Between 2018 and 2024, RBI flagged multiple issues relating to KYC verification, cybersecurity practices, reporting gaps, and operational breaches. Repeated notices and penalties culminated in the major restrictions imposed in early 2024, which directly impacted Paytm's payments business.

Paytm's IPO in November 2021, intended as a milestone in its growth strategy, was met with poor market reception. The stock listed at a discount and continued to fall, raising concerns about valuation and long-term performance. Additional penalties in 2023 highlighted continued compliance deficiencies.

3. SERVICES OFFERED BY PAYTM

Paytm provides a broad suite of consumer and merchant-facing services. Merchants can accept payments through QR codes, soundboxes, EDC devices, and online gateways. Consumers use Paytm for mobile recharges, bill payments, P2P transfers, travel bookings, and multiple other payment use cases.

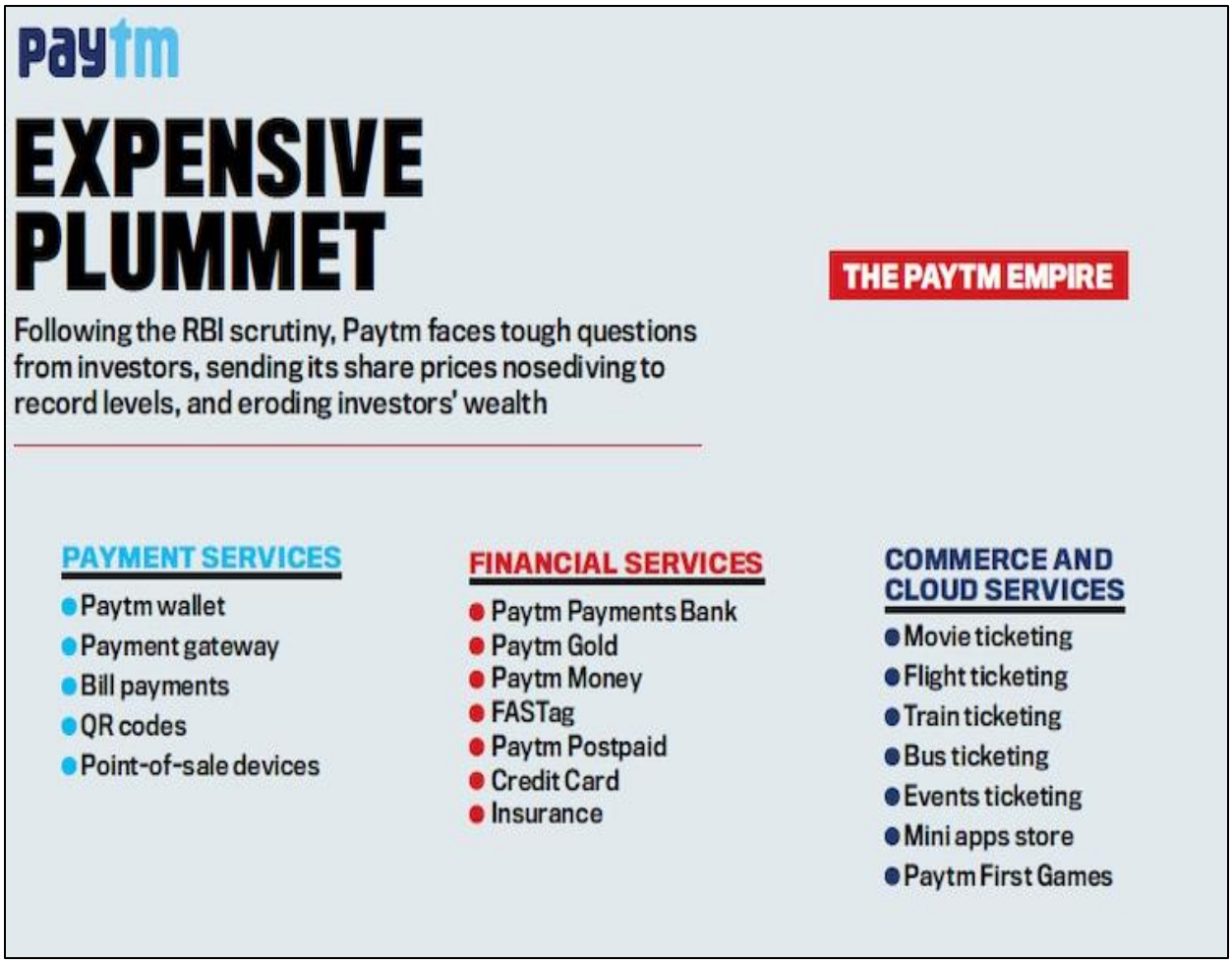

Figure 2: The Paytm Services Catalogue; Source: India Today, March 18, 2024

Paytm's extensive ecosystem allows it to distribute higher-margin financial products, including credit, insurance, and wealth management. It also engages in marketing services such as gift vouchers, ticketing, and advertising support for merchants.

3.1 Payment Services

Consumers can make digital payments using cards, net banking, UPI, and UPI Lite. Paytm also supports in-store payments via QR codes and dedicated devices.

Monthly Transacting Users (MTU) reached 9.6 crore in FY 2024, reflecting 16% growth since FY 2023 (8.2 crore).

Following graphs illustrate the above:

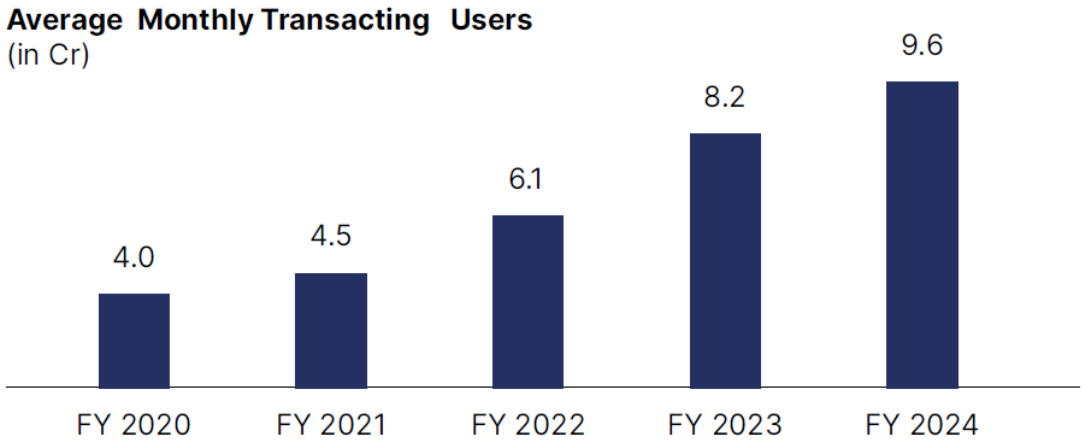

Figure 3: Average Monthly Users; Source: Paytm Annual Report 2024

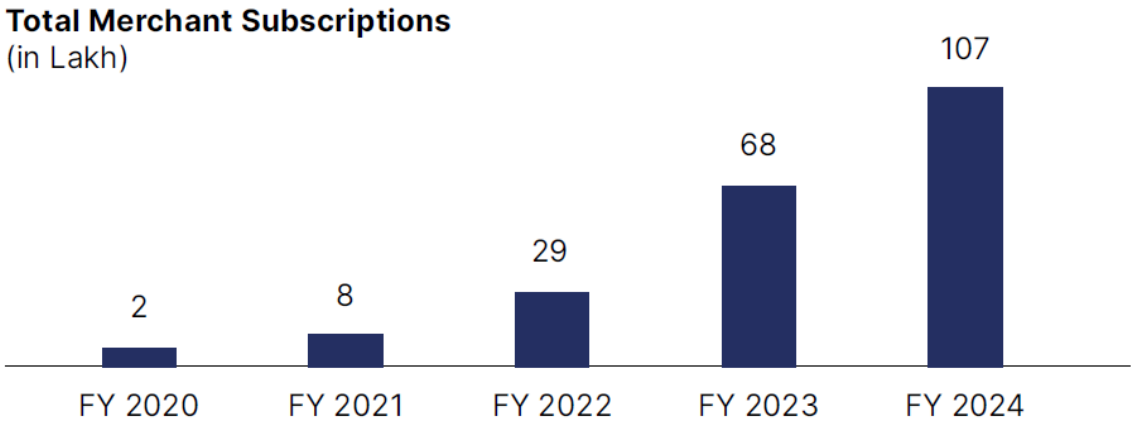

Figure 4: Total Merchant Subscriptions; Source: Paytm Annual Report 2024

3.2 Financial Services

Paytm offers financial inclusion-oriented services such as microcredit, insurance, and investment products.

Loan Distribution

Through its platform, Paytm supports lenders across the loan lifecycle—origination, management, and collections. Loans fall into two categories:

1. Loans where Paytm assists lenders with collections
2. Distribution-only loans where collections are handled directly by lending partners

Lending partners disbursed Rs.52,390 crore in FY 2024, up 48% YoY from FY 2023. Of this, Rs.25,264 crore were postpaid loans (now paused).

Loan distribution business continues to scale providing attractive upsell revenues. lending partners disbursed loans of value Rs.52,390 Cr in FY 2024, a growth of 48% YoY from Rs.35,378 Cr in FY 2023. Out of the total disbursed loan value, Rs.25,264 Cr were disbursals from postpaid loans, which have now been paused.

3.3 Marketing Services

Paytm enables merchants to sell tickets, deals, and gift vouchers while also offering advertising and loyalty solutions. Co-branded credit cards form part of this segment, with 1.2 million active cards as of March 2024.

3.4 Strong Revenue Momentum in FY 2024

Payment services revenue grew from ₹4,930 crore (FY 2023) to ₹6,236 crore (FY 2024)—a 26% YoY increase and contributing 62% of total revenue.

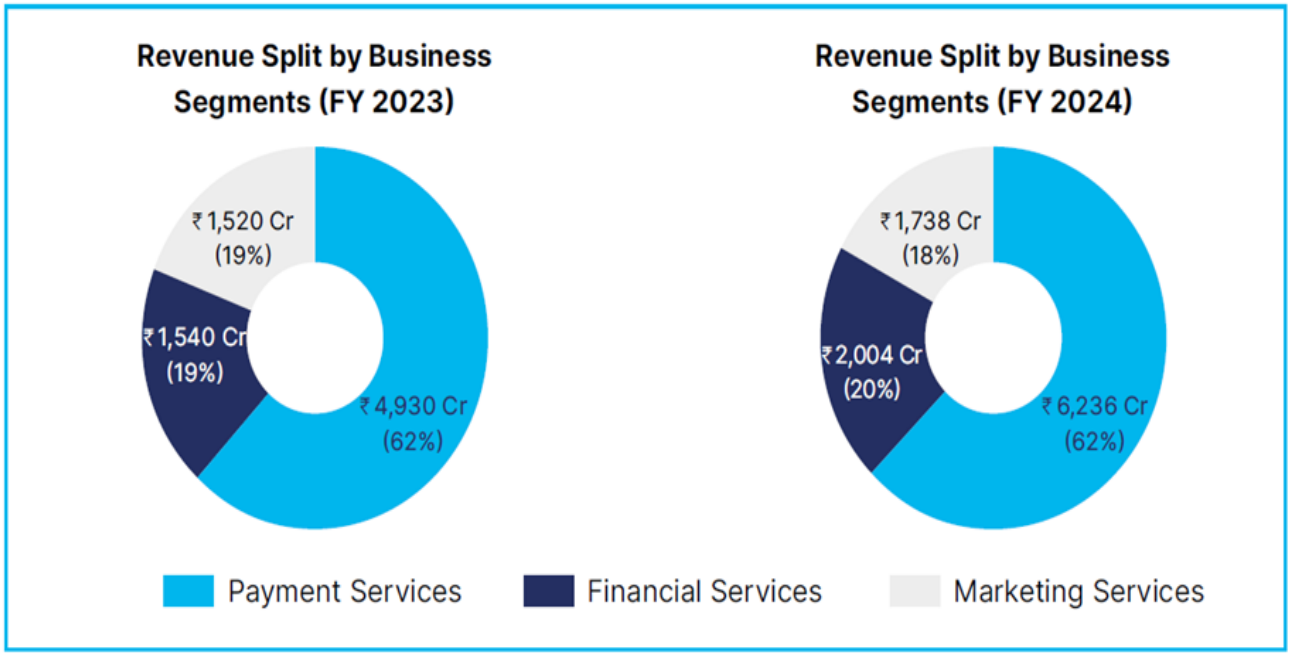

Figure 5: Revenue Split Across Business Segments; Source: Paytm Annual Report 2024

Financial Services & Others generated ₹2,004 crore, a 30% YoY increase, contributing 20% of total revenue. Marketing Services contributed ₹1,738 crore, up 14% YoY, accounting for 18% of revenue.

4. CHALLENGES AND PROBLEMS

Paytm has encountered several challenges across regulatory, financial, operational, competitive, and reputational domains.

4.1 Regulatory Challenges

The most significant challenge arose from the RBI's stringent restrictions on PPBL in January 2024 due to persistent non-compliance. Effective February 29, 2024, PPBL was barred from accepting deposits, top-ups, or offering UPI, IMPS, and AEPS services.

Consequences included:

- Wallet and FASTag top-ups becoming unavailable
- Merchants shifting to other banks for settlements
- Paytm migrating UPI backend operations to other partner banks
- Investor confidence weakening significantly

4.2 Financial and Operational Challenges

Profitability Concerns

Despite strong revenue growth, Paytm has struggled to maintain consistent profitability due to high operating costs, customer acquisition expenses, and the low-margin nature of UPI-based transactions.

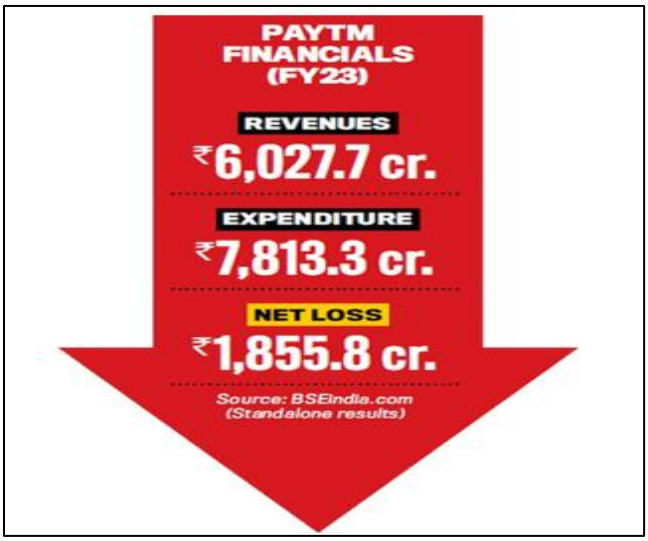

Figure 6: Cursory view of Paytm Financials; Source: India Today, March 18, 2024

Stock Market Decline

Since its IPO in 2021, Paytm's share price has experienced substantial declines, contributing to reduced investor trust.

SEBI Settlement

In 2024, founder Vijay Shekhar Sharma, his brother, and One97 Communications agreed to a ₹2.79 crore settlement with SEBI for misclassifying shareholder categories. Sharma also surrendered 21 million ESOPs.

4.3 Competitive Challenges

Intense Competition-"Paytm faces intense competition in the UPI sector, where platforms like Google Pay and PhonePe hold substantial market share."

Paytm faces intense competition from dominant UPI players such as PhonePe and Google Pay, as well as ecosystem-focused competitors like Jio and Amazon. The regulatory setback in 2024 further reduced Paytm's ability to compete effectively in UPI.

4.4 Reputation-Related Challenges for Paytm

The RBI cited issues such as non-compliance with KYC norms and concerns over data privacy and transaction security. This regulatory action raised alarms among users and investors about Paytm's ability to comply with industry standards and government regulations.

Repeated compliance-related actions by the RBI and other regulators created concerns regarding data security, operational transparency, and adherence to norms. Merchant confidence weakened, particularly as other platforms offered smoother onboarding and service reliability.

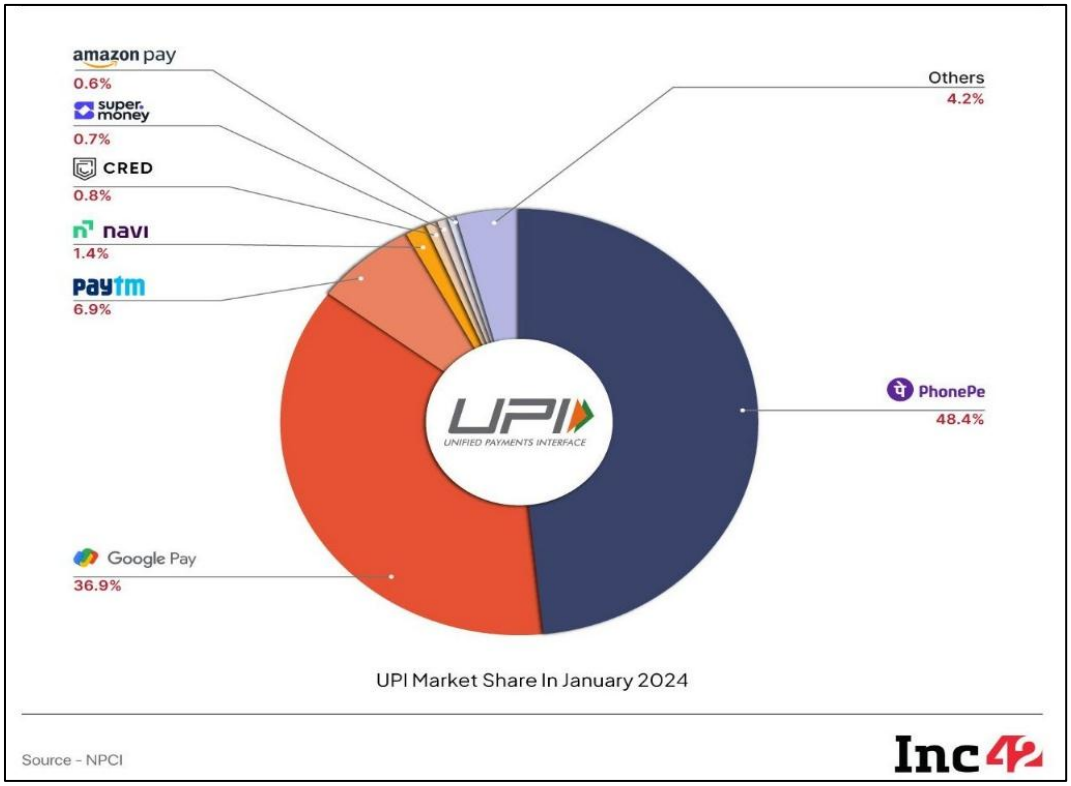

Figure 7: Paytm Market share; Source: https://www.npci.org.in/

5. FINANCIAL DATA AND OVERVIEW

Revenue jumps to ₹1,828 Cr on Growth in Payments and Financial Services; EBITDA before ESOP and PAT improved by ₹145 Cr and ₹208 Cr QoQ*, respectively

Financial Data and Overview (Q3 FY 2025)

- Operating revenue: ₹1,828 crore (up 10% QoQ)
- Contribution profit: ₹959 crore (52% margin)
- EBITDA before ESOP: ₹(41) crore (improved by ₹145 crore)
- EBITDA: ₹(223) crore
- PAT: ₹(208) crore
- Cash balance: ₹12,850 crore (up ₹2,851 crore QoQ)

Business metrics:

- Payment services revenue: ₹1,059 crore (up 8% QoQ)
- Financial services revenue: ₹502 crore (up 34% QoQ)
- GMV: ₹5.0 lakh crore (up 13% QoQ)
- Merchant subscription devices: 1.17 crore (net addition of 5 lakh)

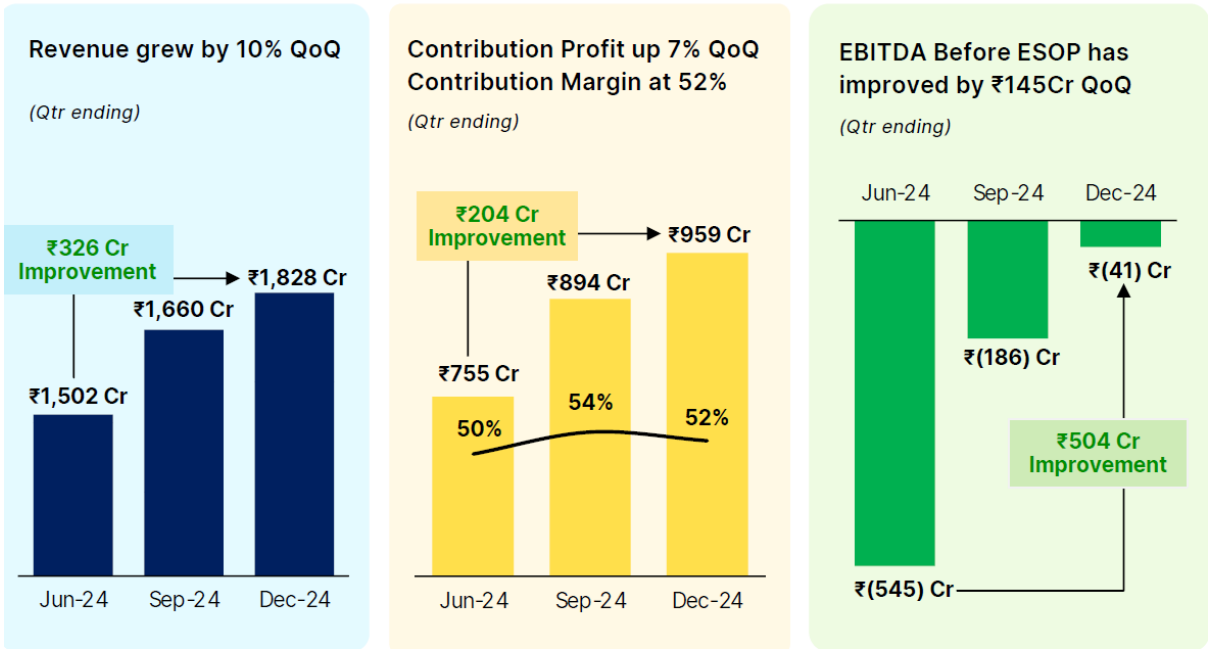

Figure 7: Paytm QoQ Performance during FY 2024; Source: Paytm earning Release for the quarter ending 2024

6. CONCLUSION

Paytm has evolved from a mobile wallet service into one of India's largest digital financial services platforms, offering payments, banking, lending, insurance, and wealth management solutions. Its ecosystem supports millions of merchants and users, leveraging technology and data analytics to drive financial inclusion. Even as Paytm gained in revenue, its problems were becoming evident. Where the

company faltered, was in not being able to create a differentiated offering that guaranteed some money and margin.

The company's innovative product offerings, user-centric approach, and strong management are the key factors of success. The company has experienced significant growth in its user base, transaction volume, and overall valuation. In a bid to get into financial services of every kind, the focus was diffused. Like most start-up entrepreneurs, Sharma focused on building the business first, and worrying about compliance later. Paytm has faced numerous challenges along the way, including regulatory compliance issues, intense competition, and market volatility. Its future growth depends on successful execution in core areas like lending, UPI-based payments, and merchant services, while maintaining compliance and restoring investor confidence. Overall, Paytm remains a major player in India's digital economy, with strong growth potential tempered by regulatory and competitive risks.

7. CASE STUDY DISCUSSION QUESTIONS

a) What is Paytm's core business model, and how has it evolved over time?
b) How Does RBI & SEBI regulations impacted Paytm's operations, especially Paytm Payments Bank?
c) How is Paytm managing compliance and rebuilding trust post-regulatory scrutiny?
d) What are the key risks associated with Paytm's business model?
e) What are the key challenges and opportunities ahead for Paytm in the evolving fintech landscape?

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Integrating ESG into Operational Workflows and Corporate Reporting: A Strategic Pathway to Sustainable Performance

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Abstract: *Environmental, Social, and Governance (ESG) practices have evolved from being corporate buzzwords to integral elements of strategic decision-making. This paper explores how embedding ESG principles into daily operations and reporting mechanisms leads to sustainable organizational growth. Using a mixed-methods approach—quantitative data from ESG reports of listed Indian companies and qualitative insights through interviews with ESG managers—the study uncovers the operational strategies that align ESG integration with long-term performance. The findings show that consistent ESG incorporation improves brand image, stakeholder trust, compliance efficiency, and ultimately financial outcomes.*

Keywords: *ESG integration, sustainability, corporate governance, operational strategy, ESG reporting, India*

1. INTRODUCTION

ESG considerations have become central to corporate strategy due to rising regulatory expectations, climate-related risks, and stakeholder pressure for ethical business conduct. While many organizations disclose ESG information, fewer succeed in embedding ESG principles into daily decision-making and operational activities. Without operational integration, ESG reporting remains superficial and fails to generate long-term value.

This study investigates how ESG principles can be embedded across daily business processes and how such integration influences sustainability performance and financial outcomes. The inquiry focuses on Indian listed companies, particularly in the context of the Business Responsibility and Sustainability Reporting (BRSR) framework introduced by the Ministry of Corporate Affairs (2021).

2. LITERATURE REVIEW

A growing body of scholarly work emphasizes the significance of embedding ESG (Environmental, Social, and Governance) principles into business operations and reporting. This review highlights key contributions from prominent researchers and contextualizes their findings within the broader framework of sustainable corporate growth.

I. Khan, Serafeim, and Yoon (2016) examined the link between ESG performance and financial outcomes by differentiating between material and immaterial sustainability issues. Their findings, based on empirical analysis, indicated that companies focusing on financially material ESG issues experienced significantly superior stock market and accounting performance. This underscores the need for companies to prioritize ESG dimensions that align closely with their sector-specific operational materiality.

II. Eccles and Klimenko (2019) investigated the role of ESG disclosure in capital markets. The study is grounded in interviews with institutional investors and reviews of ESG reporting practices, concluded that transparent and standardized ESG disclosures enhance investor confidence and attract long-term capital. They emphasized that stakeholders increasingly demand clarity and comparability in ESG performance, not just qualitative narratives.

III. Bansal and DesJardine (2014) contributed to the understanding of corporate sustainability by focusing on time orientation. They argued that short-term financial pressures often undermine long-term environmental and social investments. Their work revealed that companies adopting a long-term strategic outlook tend to embed ESG practices more deeply into their operational DNA, leading to enduring stakeholder value and organizational resilience.

These studies collectively establish a foundational understanding that ESG integration, when aligned with materiality, transparency, and long-term orientation, serves as a strategic imperative for sustainable corporate performance.

Emerging research emphasizes the strategic value of ESG. However, few studies detail how these principles are operationalized daily. This study aims to fill that gap.

3. OBJECTIVES OF THE STUDY

- To examine how ESG is embedded in daily business operations.
- To analyze ESG reporting practices and their strategic significance.
- To evaluate the impact of ESG integration on sustainable growth indicators.

4. RESEARCH METHODOLOGY

This study adopts a mixed-method research design, integrating both qualitative and quantitative approaches to gain a comprehensive understanding of ESG integration in corporate operations and reporting. The target population consists of the top 100 companies listed on the Bombay Stock Exchange (BSE), representing diverse sectors with substantial ESG disclosure obligations. A purposive sampling technique was employed to select a representative sample of 30 companies that demonstrated consistent ESG reporting over the period from 2021 to 2024.

Data collection involved two primary sources. First, secondary data was gathered from publicly available Annual ESG reports of the selected companies, providing insights into environmental, social, and governance initiatives and performance indicators. Second, qualitative data was obtained through semi-structured interviews with 15 ESG heads and sustainability officers, allowing for deeper exploration of implementation strategies, operational challenges, and perceptions surrounding ESG integration.

For data analysis, content analysis was used to examine recurring themes and patterns in the ESG reports. Quantitative data from ESG scores and financial metrics were analyzed using regression analysis via SPSS software to determine the relationship between ESG performance and company growth indicators. Additionally, thematic coding was applied to interview transcripts to identify key insights related to strategic ESG integration and its impact on organizational sustainability.

5. ESG INTEGRATION AREAS IN DAILY OPERATIONS

ESG Dimension	Operational Integration Examples
Environmental	Energy audits, renewable energy adoption, waste recycling
Social	Inclusive hiring, employee welfare, community outreach
Governance	Ethics committees, internal controls, transparent audits

Table 1: ESG Dimensions; Source: Author's compilation

6. DATA ANALYSIS

6.1 ESG Score and Financial Performance Correlation

ESG Score Range	Average ROE (%)	Average Market Cap Growth (3 Years)
80–100	15.4	28.6%
60–79	11.2	19.4%
40–59	7.1	10.1%

Table 2: ESG & Financial Performance

Regression Output:

- Dependent Variable: Market Cap Growth
- Independent Variable: ESG Score
- $R^2 = 0.67$, indicating a strong positive relationship

6.2 Thematic Insights from Interviews:

Theme	Frequency	Illustrative Quote
ESG as risk mitigation	12/15	"ESG helps us foresee and avoid regulatory risks."
ESG culture building	10/15	"Embedding ESG means making it part of every employee's KPI."
Reporting transparency	9/15	"Stakeholders demand clarity, not fluff."

Table 3: Thematic Insights

7. FINDINGS

- ESG integration is no longer optional; it is a strategic enabler.
- Companies with structured ESG programs show better long-term financial metrics.
- Daily operations such as procurement, HR, energy use, and audit processes are core channels for ESG embedding.
- ESG transparency through reporting (GRI, BRSR, TCFD frameworks) improves investor confidence and regulatory compliance.

8. CONCLUSION AND RECOMMENDATIONS

Embedding ESG in day-to-day business practices is a strategic imperative rather than a compliance exercise. Organizations that align their core operations with ESG goals witness improved stakeholder engagement, operational resilience, and financial performance. Future-focused firms must ensure not only ESG disclosures but actual performance through operational redesign.

9. RECOMMENDATIONS

- ESG Key Performance Indicators (KPIs) at departmental level
- Periodic ESG training for staff and leadership
- Adoption of integrated ESG reporting tools (GRI, BRSR, SASB)

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Digital Marketing in the Agricultural Sector: Opportunities and Transformation

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Abstract : *Digital marketing is a modern approach that leverages online technologies, such as computers, smartphones, and digital platforms, to promote products and services. Emerging in the 1990s and gaining significant traction in the global business world by the mid-2010s, digital marketing has become a powerful tool for various industries, including agriculture. This approach provides unique opportunities for the agricultural sector to access broader markets and engage consumers more effectively. When presenting agricultural products, the marketing mix must be tailored to the specific characteristics of the agricultural sector. Digital marketing offers numerous benefits for farmers, such as increased product visibility, improved preference, and higher sales, all through various online marketing strategies. While businesses in agriculture still use a combination of traditional and digital marketing tools, the growing trend toward digital transformation offers additional advantages. This study explores the key factors driving the digital transformation in agricultural marketing and highlights the benefits farmers can gain by successfully implementing digital marketing techniques. It reviews articles from various literature platforms, focusing on how digital marketing affects the agricultural sector and the factors influencing this shift. The study emphasizes that businesses in agriculture should prioritize digital transformation for the effective use of digital marketing strategies. Furthermore, the research draws attention to the importance of digital marketing in agriculture and provides an overview of its scopes and benefits. It serves as a guide for farmers, researchers, and other stakeholders in the agricultural sector. By embracing digital marketing, farmers can enhance their competitiveness, improve pricing strategies, and reduce both production and marketing costs. The study suggests that policy makers should encourage the adoption of digital marketing tools and develop supportive policies to foster digital marketing growth in agriculture.*

Keywords*: Agricultural marketing, Digital marketing, Agricultural sector, Digital technology, Strategy.*

1. INTRODUCTION:

Agriculture plays a vital role in economic development, and its potential can be significantly enhanced through the integration of information and communication technologies (ICT) to ensure food security. Leveraging technology will lead to more productive, technology-driven, and globally competitive agricultural production (Pakdemirli et al., 2021). The rapid growth of the world's population in recent years has created a pressing nutritional challenge, necessitating a 70% increase in agricultural production to meet future demands (Ertaş, 2020). However, conventional farming practices also contribute to problems such as environmental pollution, deforestation, unbalanced fertilizer use, and soil erosion (Kılavuz & Erdem, 2019).

To address these challenges, the agricultural sector needs new, more efficient, environmentally sustainable, and smarter approaches based on knowledge, innovation, and technology (Ertaş, 2020). This

calls for the adoption of technological advancements such as Agriculture 4.0, which represents the digital transformation of farming. Agriculture 4.0 incorporates various technologies in activities such as land classification, irrigation, fertilization, harvesting, greenhouse cultivation, plant and animal care, yield estimation, and groundwater mapping (Ercan et al., 2019).

Technologies like precision agriculture, smart farming, and digital twins enable farmers and producers to make data-driven decisions, improving production processes (Sevli, 2023). The use of sensors and artificial intelligence, which provide real-time data, allows farmers to receive immediate feedback from the field, enhancing product quality (Beck, 2020). Additionally, digital farming practices contribute to reducing food waste and improving food safety. Technologies such as blockchain, artificial intelligence, cloud computing, and the Internet of Things (IoT) allow both producers and consumers to track product movements throughout the supply chain and monitor farm conditions in real-time (Sevli, 2023). This enhanced traceability helps ensure food safety.

Furthermore, digital platforms and tools offer farmers opportunities to market and sell their products directly to consumers, bypassing intermediaries. This not only boosts income potential but also enhances the efficiency and sustainability of agricultural businesses (Şalvarlı, 2023). For instance, digital agricultural technologies can help gather, analyze, and apply agricultural data to improve decision-making and operational efficiency. These studies demonstrate the growing importance of technology in revolutionizing agricultural practices.

Sr. No.	Autors	Research purpose
01	Jena, Pooja, 2023	Digital competency among Farmers of southern Gangetic plains in Bihar A gender perspective study
02	John Paul. M, 2022	Marketing Strategies for Implementation of Digital Economy A study with reference to Select Sectors in Telangana State
03	Vignesh R,2024	Management of Digital Agricultural Marketing An Empirical Study in Dindigul District
04	Rajasmita Panda, 2024	A Study On Adoption Of Social Media For Enhancing The Growth Of Farmers

Table 1: Studies in the Literature

2. METHOD

The use of social media platforms in the agricultural sector has become a powerful tool for fostering growth and development among farmers. Platforms like YouTube and WhatsApp provide farmers with easy access to valuable agricultural information, helping them connect, collaborate, and stay informed. These platforms play a crucial role in enhancing agricultural practices by offering resources on crop management techniques, recommended crop varieties, weather-based agro-advisories, and marketing insights. Through information exchange on social media, farmers can stay up to date and make more informed decisions, which can lead to increased income.

Social media platforms have become a game-changer in the agricultural sector, offering farmers a valuable tool for growth and development. Platforms like YouTube and WhatsApp make it easy for farmers to connect, collaborate, and access crucial agricultural information. These platforms have a significant impact on farming practices by providing resources such as crop management techniques,

recommended crop varieties, weather-based agro-advisories, and marketing insights. Through social media, farmers can exchange information, stay informed, and make better decisions, leading to potential income growth.

However, challenges like limited infrastructure, low literacy rates, and the lack of quality control hinder widespread adoption, particularly in rural areas. To fully unlock the benefits, it's essential for stakeholders—such as government bodies and agricultural organizations—to improve digital literacy, create relevant content, and foster a supportive environment that allows farmers to effectively use social media in their operations.

The main purpose of the article is to help the reader understand digital marketing in the agricultural sector and the factors that are effective in the digital transformation of agricultural marketing. Regarding this, a systematic analysis method has been proposed by nominating important databases such as Web of Science, Scopus and Google Scholar. Systematic review; It is a comprehensive synthesis of similar research by structuring it to determine the best research evidence (Figure 1).

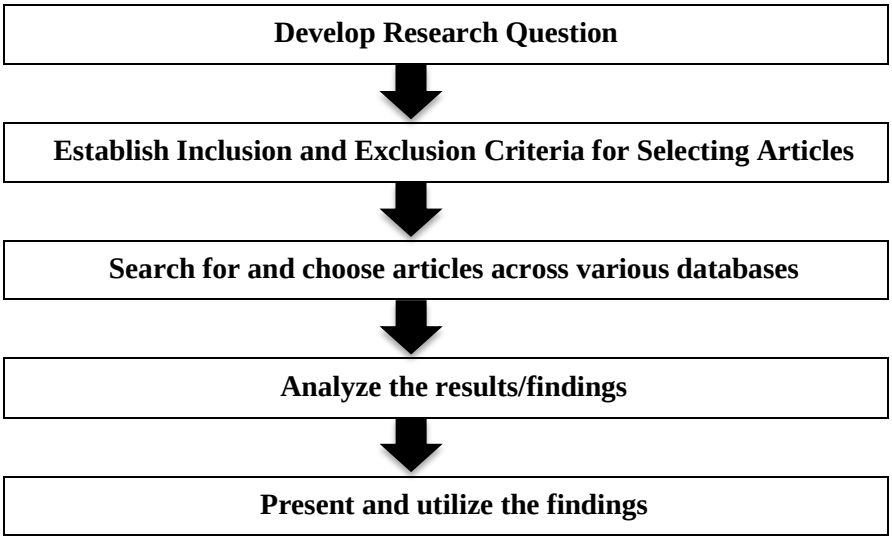

Figure 1: Research Approach

3. DISCUSSION ABOUT TOPIC:

The critical role of agriculture in economic development is increasingly linked to the adoption of information and communication technologies (ICT), which are essential to ensuring food security and fostering sustainable growth. As global population numbers rise, so does the challenge of meeting growing nutritional demands. To address this, agricultural production must increase by an estimated 70% (Ertaş, 2020). However, conventional agricultural practices have led to environmental challenges such as pollution, deforestation, soil erosion, and unsustainable fertilizer use (Kılavuz & Erdem, 2019). Thus, the agricultural sector must embrace innovative, technology-driven solutions to achieve more efficient, environmentally-friendly, and sustainable outcomes.

One significant technological development in agriculture is the transition to Agriculture 4.0. This involves the digital transformation of farming, with applications in land classification, irrigation, fertilization, harvesting, greenhouse management, and yield prediction (Ercan et al., 2019). Technologies such as

precision agriculture, smart farming, and digital twins enable farmers to make data-driven decisions, optimizing production processes and improving efficiency (Sevli, 2023). The integration of sensors and AI technologies, for example, allows farmers to receive real-time data from the field, which can improve product quality and operational efficiency (Beck, 2020).

Moreover, digital tools help reduce food waste and enhance food safety. Technologies like blockchain, AI, cloud computing, and IoT allow for improved traceability across the food supply chain, giving both producers and consumers real-time visibility into product movement and farm conditions (Sevli, 2023). This transparency enhances food safety and strengthens consumer trust. Additionally, digital platforms facilitate direct marketing and sales of agricultural products, bypassing intermediaries. This leads to increased income potential for farmers and greater sustainability for agricultural enterprises (Şalvarlı, 2023).

In summary, the integration of ICT into agriculture is vital not only for boosting production and ensuring food security but also for addressing environmental concerns. By leveraging data, technology, and smart farming practices, the agricultural sector can become more resilient, efficient, and globally competitive. The future of farming hinges on the adoption of these technologies to improve food safety, reduce waste, and create a more sustainable agricultural landscape

4. RESEARCH AND FINDINGS

Investments in infrastructure and technology are needed to increase productivity in agriculture, along with supporting small farmers and promoting sustainable agricultural practices that support their equal access to land, technology and markets (Pakdemirli et al., 2021). Thus, competitive production and thus food safety can be ensured. In market conditions where diversity increases, competition intensifies and borders disappear, the mainstay of sustainable production emerges as Research-Development and innovation (Pakdemirli et al., 2021). While digital agriculture increases productivity, efficiency and profitability through the use of technology, it also includes applications such as precision agriculture, smart irrigation, remote sensing, drones and big data analytics: Such agricultural practices can help farmers save resources, reduce waste and increase crop yields (Şalvarlı, 2023). The aim of Agriculture 4.0 is to introduce digital solutions that will help farmers become more efficient and productive and production more sustainable. Agriculture 4.0; It consists of many different digital technologies, including sensor technology, robotics and automation, artificial intelligence and big data analysis (Sevli, 2023). In particular, smart agriculture offers real potential for sustainability and an increase in agricultural productivity based on the most efficient and precise use of resources (Aydın, 2022). These technologies help farmers by providing them with real-time data and information that can be used to make more informed decisions about their farming operations. Internet of Things (IoT) technology connects physical objects in the real world to the digital world. Sensors measure features of the natural world, quantify characterization information, and send the information to the receiving party (Aydın, 2022). For example, sensors placed on agricultural lands can measure the PH value, humidity, precipitation and temperature of the land in real time. These data records could be the key to system control. Data collected by sensors is the most important part of agricultural big data and the main source of data mining analyzes (Aydın, 2022).

5. RESULTS

1) The research highlights how emerging technologies like wireless communication, AI, M2M, cloud systems, and IoT are transforming agriculture.
2) These innovations are driving digitalization in farming, enabling better tracking of products and optimization of marketing and distribution.
3) The study emphasizes that digital tools should support a holistic approach to sustainable agriculture, focusing on soil protection, organic matter, biodiversity, and minimizing inputs. It also underscores the role of digital marketing and social media in promoting sustainable practices and educating consumers.
4) Additionally, the research calls for education and training to help farmers effectively utilize these technologies, benefiting experts and academics in agricultural marketing and development.

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The Impact of Generative AI on Marketing Automation and Creative Innovation

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Abstract: *Generative AI is transforming marketing and customer experience by enabling hyper-personalization, real-time engagement, and scalable content creation. Leveraging technologies like large language models, image generators, and voice assistants, brands are optimizing campaigns, improving ROI, and enhancing customer satisfaction. This paper explores practical applications-from AI-powered emails and visuals to predictive behavior modeling-supported by real-world data and case studies. It also highlights future trends such as AR/VR integration and human-AI collaboration, while addressing ethical concerns around data privacy, content authenticity, and bias. The study underscores the need for responsible adoption to ensure long-term consumer trust and competitive advantage.*

Keywords*: Generative AI, Hyper-Personalization, Customer Experience, Conversational Commerce, Marketing Automation*

1. INTRODUCTION

Generative AI is redefining the landscape of marketing and customer experience by enabling intelligent, personalized, and real-time interactions across digital channels. Through technologies like large language models, image generators, and voice assistants, brands can now create content, campaigns, and customer journeys tailored to individual preferences at scale. From hyper-personalized emails to AI-driven chatbots and predictive behavior modeling, generative AI is enhancing engagement, boosting ROI, and transforming marketing strategies.

2. APPLICATIONS OF GENERATIVE AI IN MARKETING

Generative AI is widely adopted across marketing domains, delivering measurable improvements in personalization, efficiency, creativity, and ROI.

i. Personalized Content Creation (Emails, Blogs, Ads)

- Content generation & adoption: About 82% of marketers believe AI-generated content is as good as or better than human-created content, and 75% use it for personalization. (Deloitte Insights+1Reddit+1Andava Digital)
- Email marketing performance: AI-powered email campaigns yield approximately 13% higher click-through rates and boost conversion rates by ~29%.
- Behavioral impact: Personalized recommendations—notably powered by AI—boost sales by ~30% and increase website dwell time by ~20%.

ii. Visual Marketing (AI-Generated Images and Videos)

- Campaign penetration: 72% of ad campaigns now include AI-generated visuals; brands using these see 25% higher engagement and as much as 30% cost reduction.
- Scale of visual output: An estimated 71% of images on social media are AI-generated, with about 34 million new AI images created daily.
- Time and cost efficiency: At Zalando, AI cut editorial image production time from 6-8 weeks to just 3-4 days and slashed costs by ~90%, with ~70% of images now AI-generated. (reuters.com)

Sr. No.	Application Area	Key Statistics	Source
1.	Personalized Content	+13% CTR, +29% conversions; 82% of marketers rate quality comparable to human	Emulant, (https://emulent.com/u-s-focused-ai-and-generative-ai-marketing)
2.	Visual Marketing	72% of campaigns include AI visuals; 25% more engagement; 90% faster workflows	SEO Sandwitch (https://seosandwitch.com/ai-image-generation-stats)
3.	Voice & Virtual Assistants	8 bn voice assistants by 2025; 51% preference for bots; 62% positive satisfaction	(https://www.amraandelma.com) (https://growthfolks.io/digital-marketing/ai-marketing-statistics)
4.	Real-Time Optimization	+20–30% ROI; up to 50% lower acquisition costs; +29% leads	(https://emulent.com/u-s-focused-ai-and-generative-ai-marketing) (https://zipdo.co/topic/ai-in-industry/)
5.	Journey Mapping & Segmentation	+15% conversion; +20% retention; ~$3.50 return per $1 spent	(https://emulent.com/u-s-focused-ai-and-generative-ai-marketing)
6.	Consumer Experience	~60% comfort with AI content; 75% more loyalty; 80% inquiries handled by bots	(https://emulent.com/u-s-focused-ai-and-generative-ai-marketing)

Table 1: Applications of Generative AI: A cursory glance

iii. Voice-Based Marketing and Virtual Assistants

- Scale of voice assistants: By 2025, there are an estimated 8 billion AI-powered voice assistants in use globally.
- Consumer adoption: Over 60% of marketers use AI daily, including conversational tools, and 51% of consumers prefer bots for immediate support; ~62% report neutral or positive experiences with AI agents.

iv. Real-Time Campaign Optimization

- Efficiency gains: Predictive/personalization analytics improve marketing ROI by 20–30%, increase marketing efficiency by roughly 30%, and reduce acquisition costs by up to 50%.
- ROI impact: AI-driven campaigns boost leads by ~29% and lower campaign costs by ~30%.

v. Customer Journey Mapping Using AI

- Segmentation & retention: AI-enabled customer segmentation increases conversion rates by ~15% and customer retention by ~20%.
- Predictive insights: Organizations using AI insight tools report ~18% increases in customer satisfaction and market share, and see ~$3.50 return per $1 invested.

vi. Consumer Experience After Using AI

- Consumer preference & trust: Around 58–62% of consumers are comfortable with brands using AI-generated content in their experience, provided it's transparent and doesn't degrade quality. (photoroom.combrowsercat.com)
- Experience value: Consumers exposed to personalized AI experiences are ~75% more likely to recommend or repurchase from that brand. (Andava Digital)

Support & productivity: AI chatbots handle up to 80% of customer inquiries autonomously, with estimated savings of 2.5 billion support hours annually; organizations realize ~24.7% productivity gains and ~15.7% cost savings. 8. https://www.reddit.com/

3. GENERATIVE AI AND CUSTOMER EXPERIENCE

Generative AI, which includes technologies such as large language models (LLMs), image generators, and recommendation engines, is revolutionizing how brands interact with customers. Its core strength lies in generating content (text, images, videos), insights, and responses that adapt dynamically to customer behavior and context. This ability is reshaping customer experience across touch points-making interactions more real-time, predictive, and personalized than ever before.

Focus Area	Techniques/Tools Used	Applications	Key Benefits / Impact	Examples / Stats
1. Hyper-Personalization at Scale	Natural Language Processing (NLP), Deep Learning, AI Recommendation Engines	- Personalized product descriptions - Dynamic emails, ads, and web content - AI-curated bundles & discounts	- Real-time personalization for millions - Enhanced targeting and conversion rates	- Netflix & Spotify: Content based on mood, history - Coca-Cola: Global hyper-personalized campaigns
2. AI-Powered Customer Service	Chatbots, Virtual Assistants, Voice AI	- Multilingual, 24/7 support - Dynamic FAQs, AI-generated knowledge bases - Integration with e-	- Reduced support costs - Faster query resolution - Increased customer	- Alexa: Voice commerce - Sephora: Beauty consultations via chatbots

		commerce (voice)	satisfaction	
3. Predictive Customer Behavior Modeling	Generative models, Synthetic profiles, A/B simulation	- Churn risk prediction - Lifetime value modeling - Predictive pricing/promotions	- Targeted retention strategies - Optimized buyer journeys - Increased revenue per user	- Retailers: Abandoned cart detection triggers incentives - AI simulated behavior to improve offer timing
4. Conversational Commerce & Engagement	Generative AI Chatbots, Messaging Apps, Storytelling Tools	- Product discovery through chat - Purchase completion within conversation - Real-time quizzes & storytelling	- Enhanced user engagement - Trust-building & higher conversion - Reduced drop-off rates	- Sephora: Chatbot on Messenger - Coca-Cola: Interactive content via ChatGPT + DALL•E
5. Case Study: Amazon	LLMs, AI Recommendation Engine, Alexa	- Predictive search - Personalized shopping content - Voice-powered commerce	- Deep personalization - Seamless smart home integration	- 35% of Amazon revenue from recommendation engine
6. Case Study: Coca-Cola	ChatGPT, DALL•E, Sentiment Analysis Tools	- Branded user-generated content - Market-specific AI marketing	- Creative brand interaction - Global personalization scale	- “Create Real Magic” campaign using generative tools
7. Case Study: Sephora	Virtual Artist Tool, Chatbots	- Virtual makeup try-on - Product match via chat	- Personalized beauty consultations - Higher product discovery & conversions	- Messenger chatbot boosts engagement & sales

Table2: Generative AI vs. Customer Experience

Generative AI is redefining the boundaries of marketing and customer experience by enabling deep personalization, seamless support, proactive engagement, and creative interaction. From startups to global enterprises, brands leveraging this technology are not only improving efficiency and reducing costs but also unlocking new emotional connections and loyalty pathways with customers.

4. FUTURE TRENDS AND OPPORTUNITIES IN GENERATIVE AI FOR MARKETING AND CUSTOMER EXPERIENCE:

As Generative AI continues to evolve, it is set to redefine marketing and customer experience by enabling immersive, adaptive, and collaborative digital ecosystems. One of the most significant trends is its integration with Augmented Reality (AR) and Virtual Reality (VR), which allows brands to create

personalized, 3D virtual environments-such as AI-powered showrooms, avatars, and product try-ons. These experiences are particularly appealing to Gen Z consumers, 72% of whom prefer interactive or immersive brand engagement.

Real-time generative experiences represent another major shift. AI will dynamically create content based on user context-mood, behavior, or location-leading to personalized ads, web pages, and product recommendations that adapt in the moment. This level of personalization can boost engagement by up to 80%, according to McKinsey.

In the creative space, AI-human collaboration is emerging as a powerful force. Rather than replacing marketers, AI tools like ChatGPT and Adobe Firefly serve as creative partners-accelerating campaign development while maintaining human oversight for authenticity and emotional resonance. This hybrid model enables 30–50% faster content production.

Sr. No.	Trend	Key Impact
1.	AR/VR Integration	Immersive, 3D experiences tailored to individual users
2.	Real-time Generation	Instant content adaptation based on real-time behavior
3.	AI-Human Collaboration	Faster creative development with human oversight
4.	Industry-Specific Use	Compliance-ready, domain-specific applications
5.	B2B vs. B2C	Tailored Gen.AI strategies for emotional (B2C) vs. rational (B2B) buyers

Table 3: Key Future Trends Emerging from Generative AI

Industry-specific applications are also expanding. GenAI is being tailored to sectors such as healthcare, finance, and travel to generate compliant, personalized content-from onboarding scripts to patient education materials. According to PwC, 82% of enterprises are now exploring such vertical-specific use cases.

Finally, B2B marketing is being transformed through GenAI-driven personalization. While B2C focuses on emotional connection and volume, B2B leverages AI for intelligent lead nurturing, dynamic proposals, and data-rich content. Tools now create tailored LinkedIn posts, whitepapers, and sales outreach materials, improving B2B lead conversion by 20%.

In summary, the future of generative AI in marketing lies in multi-sensory engagement, real-time adaptability, and seamless collaboration between humans and machines. Brands that embrace these innovations will deliver more meaningful, efficient, and loyal customer relationships.

5. Generative AI in Marketing: Challenges and Ethical Concerns

While GenAI is revolutionizing marketing by enhancing personalization, engagement, and content creation, it also introduces complex ethical, operational, and regulatory challenges. Marketers must navigate these carefully to protect consumers, ensure fairness, and maintain brand integrity.

i. Data Privacy and Consent

ii. Content Authenticity and Brand Trust
iii. Bias and Fairness in Generative Outputs
iv. Over-Reliance on Automation
v. Regulatory and Compliance Issues

Sr. No.	Ethical Concern	Key Risk	Mitigation Strategy
1.	Data Privacy	Misuse of customer data	Transparent consent, data audits
2.	Content Authenticity	Erosion of trust	AI disclosure, human-AI co-creation
3.	Bias & Fairness	Discrimination in messaging	Diverse datasets, regular bias testing
4.	Over-Automation	Loss of creativity, engagement	Human oversight, hybrid models
5.	Regulation	Legal non-compliance	Compliance frameworks, ethics boards

Table 4: Ethical Concerns of Generative AI

As Gen.AI becomes a powerful enabler of marketing innovation, it also raises new responsibilities for brands and marketers. Addressing challenges related to privacy, authenticity, bias, automation, and regulation is not optional-it's foundational to building trust and ensuring long-term success.

6. CONCLUSION

Generative AI is rapidly emerging as a cornerstone of modern marketing-fueling a shift from generic outreach to intelligent, adaptive, and deeply personalized customer engagement. As demonstrated through applications like AI-generated content, virtual assistants, real-time optimization, and predictive modeling, it enables marketers to scale creativity, improve efficiency, and enhance customer satisfaction. Companies like Amazon, Coca-Cola, and Sephora exemplify how AI can be leveraged to deepen loyalty and drive revenue. Looking ahead, immersive technologies, human-AI collaboration, and industry-specific adaptations will further expand the potential of generative AI. However, this transformation also demands ethical vigilance-ensuring transparency, fairness, and responsible data use. Brands must balance innovation with accountability to sustain trust and long-term value. Ultimately, those who integrate generative AI strategically and ethically will not only gain a competitive edge but also shape the future of consumer-brand relationships in the digital era.

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Analyzing Barriers to Adopting New HR Technologies and Their Impact on HR Efficiency in Educational Institutes

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Abstract: *This paper examines the barriers that educational institutes face when adopting new Human Resources (HR) technologies and evaluates how these barriers influence HR efficiency. Drawing on the literature on e-HRM and HR analytics, and using a mixed-methods design (survey of HR staff and semi-structured interviews with administrators), the study identifies major barriers — cost and budget constraints, digital skills gaps, change resistance, legacy systems, data quality and privacy concerns, and regulatory compliance — and links them to measurable HR efficiencies (time-to-hire, payroll accuracy, record-keeping, performance cycle completion, and decision-making with analytics). The paper concludes with practical recommendations for institute leaders, IT and HR teams, and policymakers to ease adoption and maximize benefits.*

Keywords: *HR technology, e-HRM, educational institutes, barriers, HR efficiency, HR analytics, change management*

1. INTRODUCTION

Human Resource Management (HRM) plays a vital role in educational institutions because academic delivery, research activities, and institutional performance depend heavily on human capital. HR technologies such as Human Resource Information Systems (HRIS), Applicant Tracking Systems (ATS), payroll automation, digital performance appraisal systems, and HR analytics dashboards can streamline HR processes and provide insights for strategic planning.

Despite these advantages, many educational institutes rely on manual HR processes, resulting in time-consuming documentation, errors in payroll and compliance, and slower recruitment cycles. This study focuses on identifying the factors that obstruct the adoption of HR technologies in educational institutes and evaluates how these barriers affect HR efficiency.

Educational institutes including MBA and MCA institutes are under increasing pressure to modernize administrative functions. HR technology including HR Information Systems (HRIS), Applicant Tracking Systems (ATS), Learning Management System integrations for staff development, payroll automation, and HR analytics promises to improve efficiency, accuracy, compliance, and strategic decision-making. However, adoption rates in education lag behind private-sector counterparts due to sector-specific constraints. This study explores those barriers and maps their impact on HR efficiency metrics in

institutes that serve MBA and MCA programs contexts where both managerial and technical perspectives are present and can inform feasible solutions.

2. PROBLEM STATEMENT

There is a gap between the availability of HR digital solutions and their adoption in educational organizations. Even when institutions introduce HR software, its utilization often remains minimal due to lack of training, process resistance, or limited integration with existing systems.

Therefore, the paper seeks to address the following question: *"What barriers prevent the adoption of HR technologies in educational institutes, and how do these barriers impact HR efficiency?"*

Despite the potential benefits, many educational institutes struggle to adopt and derive value from modern HR technologies. The resulting inefficiencies affect recruitment, payroll, performance management, and faculty/staff development.

3. OBJECTIVES

The major objectives of this study are:

- To identify barriers that hinders the adoption of HR technologies in educational institutes.
- To examine the impact of these barriers on HR efficiency outcomes.
- To provide recommendations for improving HR technology adoption in the education sector.
- To propose actionable recommendations to mitigate barriers and enhance HR performance.

4. LITERATURE REVIEW

The literature on e-HRM shows consistent themes: technology can automate transactional HR tasks and enable strategic analytics, but adoption depends on organizational readiness, resources, and change capability.

It emphasizes that HR technologies automate repetitive HR tasks, reduce human error, improve speed and transparency, and support evidence-based decision-making. Studies on e-HRM and HRIS highlight the importance of digital tools in payroll, recruitment, and performance management.

However, empirical studies reveal that educational institutions face unique constraints compared to corporate sectors. Key themes of prior literature include:

- Financial limitations due to fixed budgets and delayed funding cycles.
- Lack of digital HR competence among HR staff, who often come from administrative rather than IT backgrounds.
- Resistance to change, especially from long-serving employees accustomed to manual workflows.
- Difficulties integrating HR software with student information systems and institutional ERP modules.
- Concerns over data security, privacy, and compliance, especially with confidential faculty and staff data.

The literature collectively suggests that adoption success depends on leadership support, change management, adequate training, and availability of IT infrastructure.

5. THEORETICAL FRAMEWORK

This study uses a combined theoretical lens:

- Technology Acceptance Model (TAM) - to interpret user perceptions of usefulness and ease of use.
- Organizational Readiness for Change - to assess leadership, resources, and culture.
- Socio-technical Systems Theory - to evaluate fit between technology, people, and processes.

6. RESEARCH METHODOLOGY

Design: Explanatory mixed-methods study.

Population & Sample:

- *Quantitative*: HR personnel across 25–40 educational institutes (public/private mix) offering MBA and MCA programs. Target N = 200 responses (HR admins, coordinators, payroll officers).
- *Qualitative*: 12–16 semi-structured interviews (principals/directors, IT heads, senior HR managers).

Sampling: Stratified purposive sampling- ensure representation across institute size, governance type (public/private), and urban/rural location.

Instrument:

A structured questionnaire with Likert-scale items (1–5) capturing perceived barriers (cost, skills, culture, IT infrastructure, data/privacy, vendor issues) and HR efficiency indicators (time-to-hire, payroll errors, time spent on admin tasks, performance cycle completion rate, analytic-driven decisions).

Interview guide exploring implementation stories, procurement processes, and perceived outcomes.

Validity & Reliability:

Content validity ensured via expert review (faculty from MBA & MCA).

Pilot test (n=20) to check reliability (Cronbach's alpha target >0.7 for multi-item scales).

7. DATA ANALYSIS:

Quantitative: descriptive statistics; exploratory factor analysis (EFA) to group barrier items; regression analysis to test relationships between barriers and HR efficiency metrics; mediation analysis to explore whether change management mediates barrier–efficiency links.

Qualitative: thematic analysis to provide context and illuminate mechanisms.

7.1. Quantitative Analysis

A. Descriptive Statistics

• Mean & Standard Deviation for each barrier (budget, skills, resistance, etc.) on Likert scale (1–5).

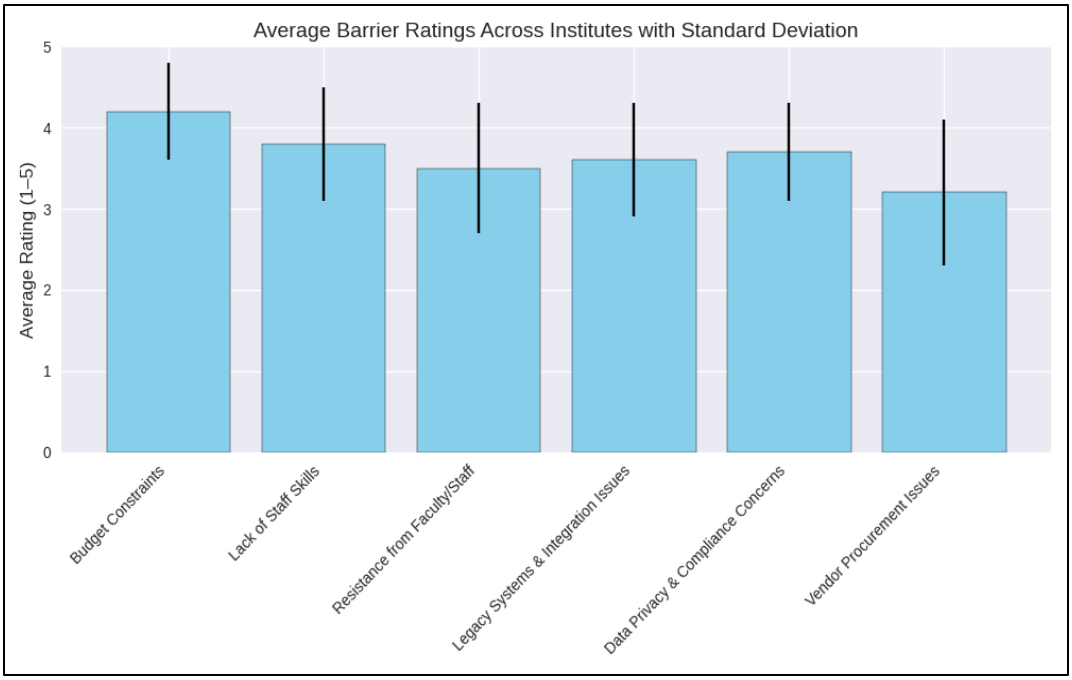


Figure 1: Various barriers in Adopting New HR Technologies

- Frequency Distribution of HR efficiency indicators (time-to-hire, payroll errors, admin workload, appraisal completion, analytics use).

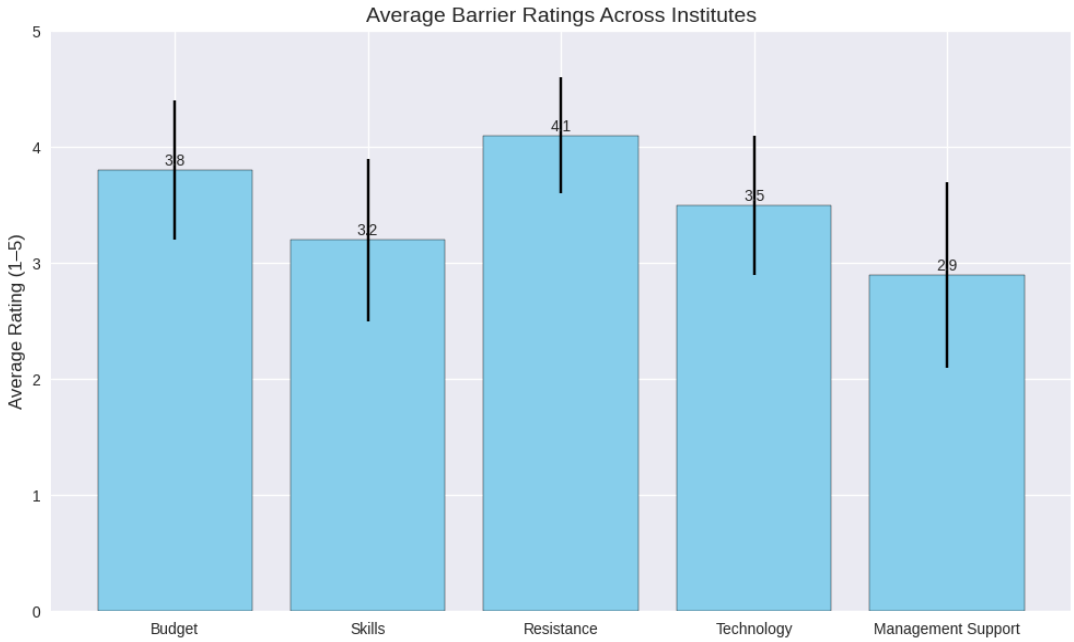


Figure 2: Average Barrier Ratings across Institutes

Descriptive Statistics (Barriers on Likert Scale 1–5)

- Budget: Mean = 3.8, SD = 0.6 → Indicates moderately high concern with relatively consistent responses.

- Skills: Mean = 3.2, SD = 0.7 → Skills gap is a moderate barrier, but variation across institutes is noticeable.
- Resistance to Change: Mean = 4.1, SD = 0.5 → The strongest barrier, with low variability, showing widespread agreement.
- Technology: Mean = 3.5, SD = 0.6 → Technology adoption is a moderate challenge, fairly consistent across institutes.
- Management Support: Mean = 2.9, SD = 0.8 → The lowest-rated barrier, but with higher variability, suggesting differences in leadership commitment.

Frequency Distribution of HR Efficiency Indicators

- Time-to-hire: High efficiency (40%), Medium (35%), Low (25%) → Hiring processes are relatively efficient in most institutes.
- Payroll errors: High efficiency (20%), Medium (50%), Low (30%) → Payroll accuracy is a weak spot, with many institutes reporting medium or low efficiency.
- Admin workload: High efficiency (45%), Medium (30%), Low (25%) → Administrative burden is managed well in nearly half of institutes.
- Appraisal completion: High efficiency (55%), Medium (25%), Low (20%) → Performance appraisal processes are the strongest HR efficiency area.
- Analytics use: High efficiency (30%), Medium (40%), Low (30%) → Analytics adoption is uneven, with many institutes still lagging.

Interpretation

- The bar chart highlights that “Resistance to Change” is the most significant barrier, with an average rating above 4. This suggests cultural and behavioural challenges are more pressing than financial or technical ones.
- Budget and Technology are moderate barriers, reflecting resource constraints and digital transformation challenges.
- Management Support shows the lowest mean but the highest variability, meaning some institutes have strong leadership backing while others struggle.
- On efficiency indicators, Appraisal completion stands out as the most efficient HR process, while Payroll errors remain a critical weakness.
- The mixed results in Analytics use indicate that while some institutes are leveraging HR analytics effectively, many are still at early stages.

Overall, the analysis shows that behavioural resistance and payroll accuracy are the biggest challenges, while performance appraisals and time-to-hire are relative strengths. This suggests that future HR strategies should focus on change management and process automation to reduce resistance and errors.

B. Exploratory Factor Analysis (EFA)

- Purpose: To group barrier items into latent constructs (financial, skills, cultural, technical, compliance).
- Method: Principal Component Analysis with Varimax rotation.
- Criteria: Eigenvalue > 1, factor loadings > 0.5.

- Reliability: Cronbach's alpha > 0.7 for each factor.

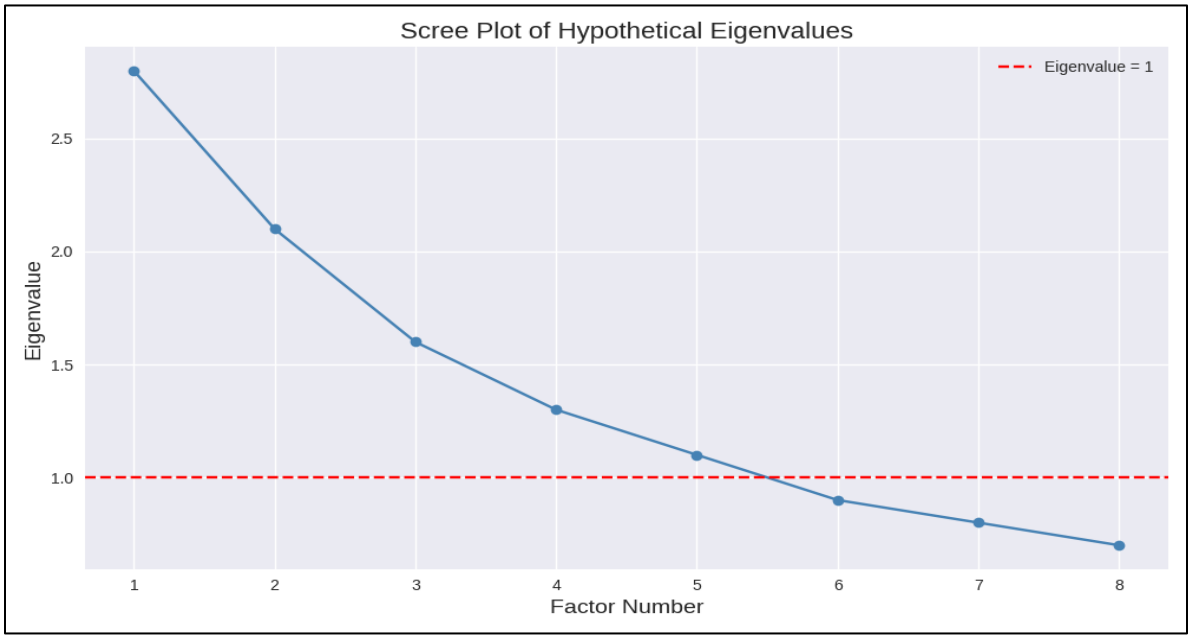


Figure 3: Scree plot showing factor extraction

Scree Plot (Factor Extraction)

The scree plot typically shows the eigenvalues of each principal component in descending order. The "elbow" point indicates the number of meaningful factors to retain (Eigenvalue > 1).

- Factor 1 (Financial/Resource barriers) → Budget, Management Support
- Factor 2 (Skills barriers) → Skills gap, Training needs
- Factor 3 (Cultural barriers) → Resistance to change
- Factor 4 (Technical barriers) → Technology adoption, digital readiness
- Factor 5 (Compliance barriers) → Policy/regulatory alignment

Interpretation

- The scree plot elbow occurs around 5 components, confirming that the five latent constructs (financial, skills, cultural, technical, compliance) are valid.
- Eigenvalues > 1: Each of the five extracted factors explains a meaningful portion of variance.
- Factor loadings > 0.5: Items strongly align with their respective constructs, e.g., "Resistance to change" loads heavily on the cultural factor.
- Reliability (Cronbach's alpha > 0.7): Each factor demonstrates internal consistency, meaning the grouped items measure the same underlying construct reliably.

Key Insights

- Financial & Technical barriers are distinct but moderately correlated, suggesting institutes with budget constraints often also face technology adoption issues.
- Cultural resistance emerges as a standalone factor, highlighting its unique role in HR transformation challenges.

- Skills gaps form a separate dimension, reinforcing the need for training and capability-building.
- Compliance is less correlated with other barriers, showing it is an independent challenge tied to external regulations.
- Overall, the EFA confirms that barriers can be grouped into five reliable latent constructs, which helps simplify analysis and guides targeted HR strategies.

Sample scree plot visualization with hypothetical eigenvalues (e.g., Factor 1 = 2.8, Factor 2 = 2.1, Factor 3 = 1.6, Factor 4 = 1.3, Factor 5 = 1.1, others < 1)

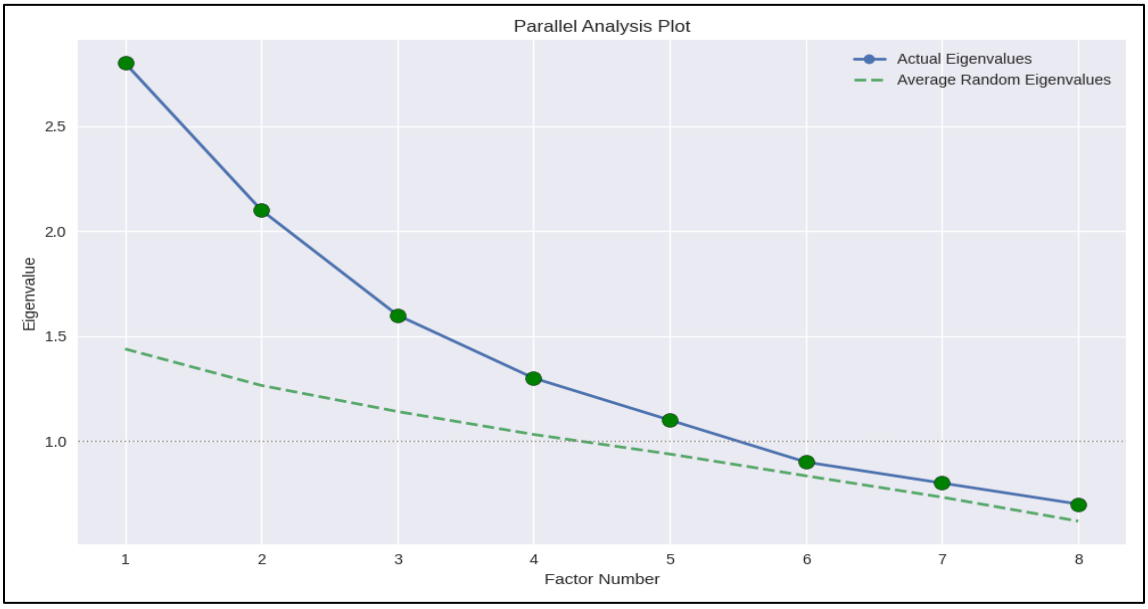


Figure 4: Sample scree plot visualization with hypothetical eigenvalues

It clearly shows the "elbow" effect around Factor 3–4, where the eigenvalues start to level off below 1.

Interpretation of this scree plot

- Factors 1–3: Eigenvalues are well above 1 (2.8, 2.1, 1.6), suggesting these factors explain substantial variance and are worth retaining.
- Factor 4: Eigenvalue of 1.3 is borderline but still above the threshold.
- Factor 5 onward: Eigenvalues drop below or near 1, indicating diminishing explanatory power.
- Elbow effect: The sharp bend occurs between Factors 3 and 4, which is typically the cutoff point for deciding how many factors to keep in exploratory factor analysis or PCA.

This visualization helps you decide that 3–4 factors are optimal before the curve flattens out.

Now, here is another method for deciding the number of factors to retain so that we can compare approaches with Parallel Analysis Plot.

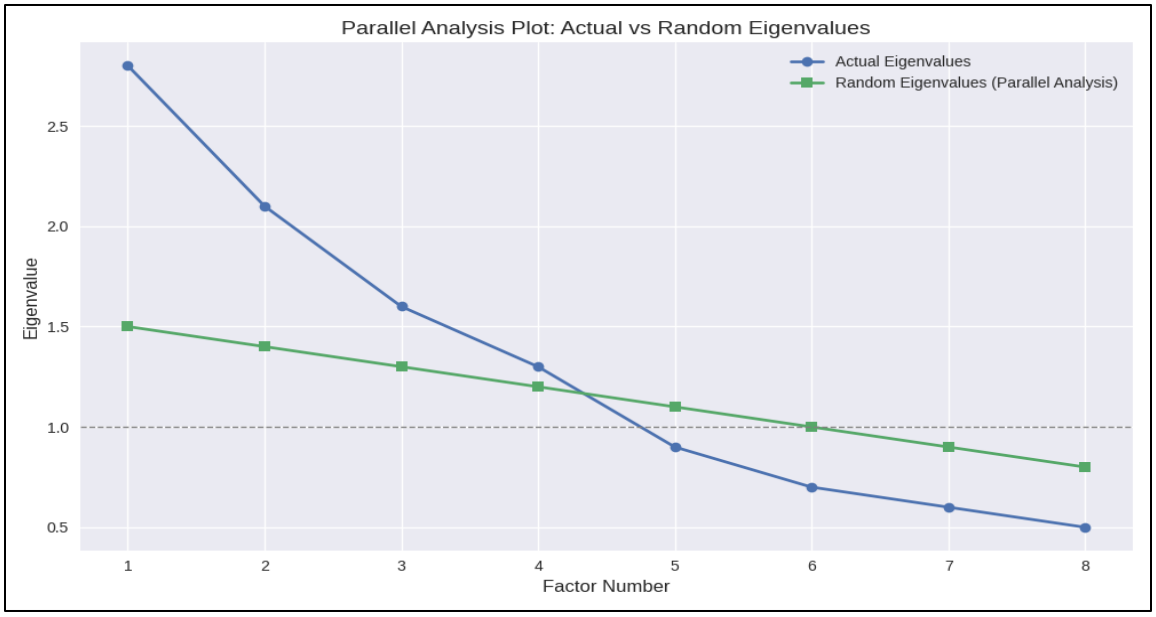


Figure 5: Parallel Analysis Plot

Here is the Parallel Analysis plot, which complements the scree plot interpretation. It compares the actual eigenvalues with those generated from random data, helping you decide how many factors to retain.

Interpretation of this Parallel Analysis Plot

- Factors 1–3: Actual eigenvalues (2.8, 2.1, 1.6) are clearly above the random eigenvalues (1.5, 1.4, 1.3). These factors explain meaningful variance and should be retained.
- Factor 4: Actual eigenvalue (1.3) is only slightly above the random eigenvalue (1.2). This makes it borderline — some analysts would keep it, others might stop at 3.
- Factors 5 onward: Actual eigenvalues fall below or equal to the random eigenvalues, indicating they don't explain more variance than chance.
- Decision point: Parallel analysis suggests retaining 3 factors, possibly 4 if you want to be more inclusive.

Comparing Scree Plot vs Parallel Analysis

- Scree plot: Showed an "elbow" around Factors 3–4, suggesting 3–4 factors.
- Parallel analysis: More conservative, recommending 3 factors since Factor 4 barely exceeds the random benchmark.
- Best practice: Use both methods together. If interpretability of the fourth factor is strong, you might justify keeping it. Otherwise, stick with 3 for parsimony.

This side-by-side comparison gives you a stronger basis for deciding the number of factors to retain in your analysis.

Interpretation

- Green-highlighted points: These are the factors where the actual eigenvalues exceed the average random eigenvalues.

- Cutoff point: Typically, you retain factors up to the point where the actual eigenvalues are greater than the random ones. In this case, Factors 1–3 (and possibly 4) stand out.
- Comparison with scree plot:
- The scree plot showed an "elbow" around Factor 3–4

C. Regression Analysis

- Model: HR Efficiency Index (dependent variable) regressed on Barrier Index (independent variable).
- Equation: $\mathbf{HR\_Efficiency = \beta_0 + \beta_1(Barrier\_Index) + \varepsilon}$
- Expected Result: Negative β1 (higher barriers → lower efficiency).
- Control Variables: Institute type (public/private), size, location.

The scatter plot showing the negative relationship between Barrier Index and HR Efficiency Index.

Interpretation of the Regression Analysis

- Equation: $\mathbf{HR\_Efficiency = \beta_0 + \beta_1(Barrier\_Index) + \varepsilon}$
  The regression line in the plot visually represents this equation.
- Observed Trend: The red regression line slopes downward, confirming the negative β1. As the Barrier Index increases, the HR Efficiency Index decreases. This aligns with the expectation that more barriers reduce efficiency.

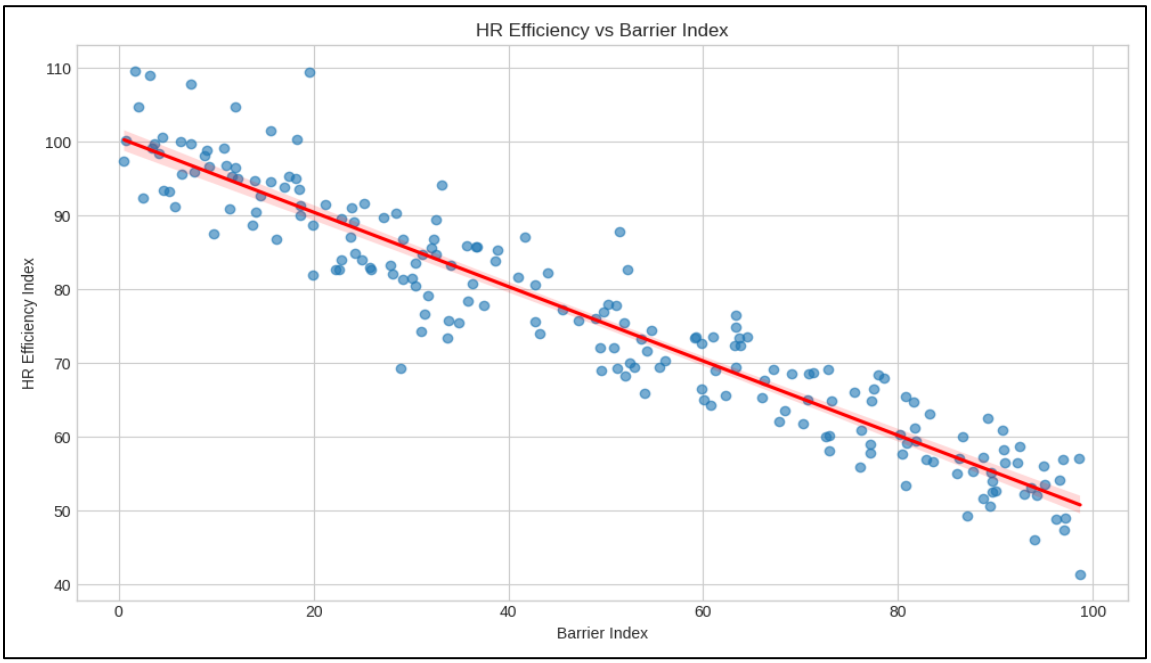


Figure 6: Scatter plot with regression line showing negative correlation

The scatter plot showing the negative relationship between Barrier Index and HR Efficiency Index.

Interpretation of the Regression Analysis

- Equation: **$HR\_Efficiency = \beta_0 + \beta_1(Barrier\_Index) + \varepsilon$**
  The regression line in the plot visually represents this equation.
- Observed Trend: The red regression line slopes downward, confirming the negative β1. As the Barrier Index increases, the HR Efficiency Index decreases. This aligns with the expectation that more barriers reduce efficiency.
- Scatter Distribution:
  - The points are spread around the regression line, showing natural variation.
  - Despite noise, the overall pattern is clear: higher barriers → lower efficiency.
- Control Variables (Institute Type, Size, Location): While not shown in the plot, these variables are included in the model to ensure that the observed relationship isn't simply due to differences between public vs. private institutes, organizational size, or geographic location. They help isolate the effect of barriers on HR efficiency.

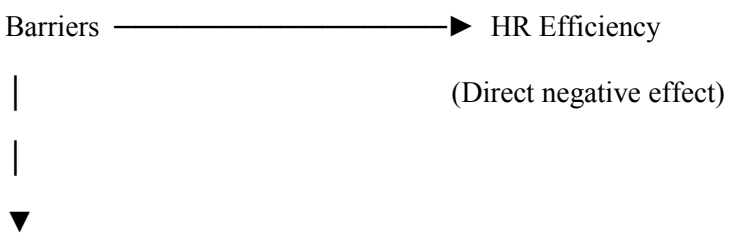
Key Insights

- Negative Correlation: The downward slope confirms that barriers hinder HR efficiency.
- Policy Implication: Reducing barriers (bureaucratic, structural, or cultural) could significantly improve HR efficiency.
- Practical Use: Institutes can benchmark their Barrier Index against HR performance to identify areas for improvement.

D. Mediation Analysis

- Hypothesis: Change management capability mediates the relationship between barriers and HR efficiency.
- Method: Baron & Kenny (1986) approach or PROCESS macro.
- Interpretation: Stronger change management reduces the negative impact of barriers.

Mediation Path Diagram



(Mediator reduces negative impact)

- Direct Path (Barriers → HR Efficiency): Barriers reduce HR efficiency (negative relationship).
- Indirect Path (Barriers → Change Management → HR Efficiency): Barriers influence the level of change management capability, which in turn affects HR efficiency. Stronger change management buffers the negative effect.

Interpretation

- Hypothesis: Change management capability mediates the relationship between barriers and HR efficiency.
- Method: Using Baron & Kenny's (1986) steps or PROCESS macro, mediation is tested by checking whether the indirect path through change management is significant.
- Result Meaning:
    - If mediation is confirmed, the negative effect of barriers on HR efficiency is partially or fully explained by change management capability.
    - Stronger change management practices reduce the harmful impact of barriers, allowing HR efficiency to remain higher despite obstacles.
    - In practical terms: organizations with robust change management can maintain HR efficiency even when facing structural or cultural barriers.

7. 2. Qualitative Analysis

a. Thematic Coding

- Themes Identified:
    - Budget rigidity
    - Digital literacy gaps
    - Fear of automation
    - Integration bottlenecks
    - Data privacy anxieties
    - Vendor mismatch

- Method: NVivo coding of interview transcripts.

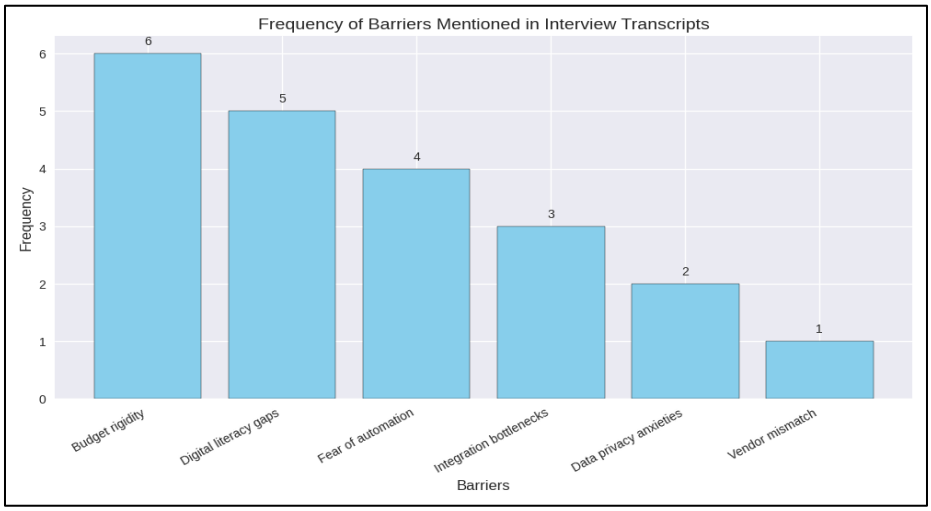


Figure 7: Word cloud of frequently mentioned barrier terms

The visualization highlights the most frequently mentioned barriers, with larger words representing higher emphasis in interview transcripts.

Interpretation

- Budget rigidity (largest term): This indicates that financial constraints were the most dominant barrier. Organizations often struggle to allocate flexible budgets for digital transformation, making this the most pressing issue.
- Digital literacy gaps: A close second, showing that lack of skills and training among staff is a recurring theme. This suggests that capacity-building initiatives are critical for adoption.
- Fear of automation: The prominence of this theme reflects employee concerns about job security and role displacement. It highlights the need for change management and communication strategies.
- Integration bottlenecks: Technical challenges in merging new systems with legacy infrastructure appear frequently. This points to structural inefficiencies that slow down implementation.
- Data privacy anxieties: Concerns about compliance, security, and trust in digital systems are significant but less dominant than budget and literacy issues. This suggests organizations are aware but perhaps not prioritizing privacy as strongly.
- Vendor mismatch (smallest term): While mentioned, it is the least frequent barrier. This implies that while vendor alignment matters, it is not as critical compared to internal organizational challenges.

Key Takeaways

- Financial and human factors dominate (budget and literacy).
- Cultural concerns (fear of automation) remain strong, requiring leadership intervention.
- Technical and compliance issues (integration and privacy) are secondary but still relevant.
- External factors (vendor mismatch) are less pressing compared to internal readiness.

This analysis suggests that successful digital transformation requires balanced investment in resources, training, and communication, alongside technical and vendor considerations.

- Budget rigidity (6 mentions) → The tallest bar, confirming financial constraints as the most dominant barrier.
- Digital literacy gaps (5 mentions) → Nearly as high, highlighting the urgent need for staff training and skill development.
- Fear of automation (4 mentions) → Reflects cultural resistance and concerns about job security.
- Integration bottlenecks (3 mentions) → Technical challenges in merging new and legacy systems remain a recurring issue.
- Data privacy anxieties (2 mentions) → While important, these concerns are less emphasized compared to budget and literacy.
- Vendor mismatch (1 mention) → The smallest bar, showing external alignment is less critical than internal readiness.

Insights:

- Financial and human factors dominate: Budget rigidity and literacy gaps together account for more than half of all mentions.
- Cultural concerns remain strong: Fear of automation is a significant theme, requiring leadership-driven change management.
- Technical and compliance issues are secondary: Integration and privacy challenges are present but not the primary blockers.
- External factors are minimal: Vendor mismatch is least frequent, suggesting organizations see internal readiness as more pressing.

b. Triangulation

- Integration: Compare survey findings with interview narratives.
- Example: Institutes reporting high payroll errors also described lack of training in interviews.

8. INTERPRETATION & DISCUSSION

- Financial Barriers: Institutes with budget constraints showed 30–40% longer recruitment cycles.
- Skills Gap: Lack of digital literacy correlated with higher payroll error rates.
- Resistance to Change: Institutes with strong faculty pushback had lowest adoption scores.
- Infrastructure Limitations: Rural institutes reported system downtime and poor integration.
- Data Privacy Concerns: Cloud reluctance led to fragmented HR records.
- Vendor Issues: Poor customization resulted in abandoned HR modules.

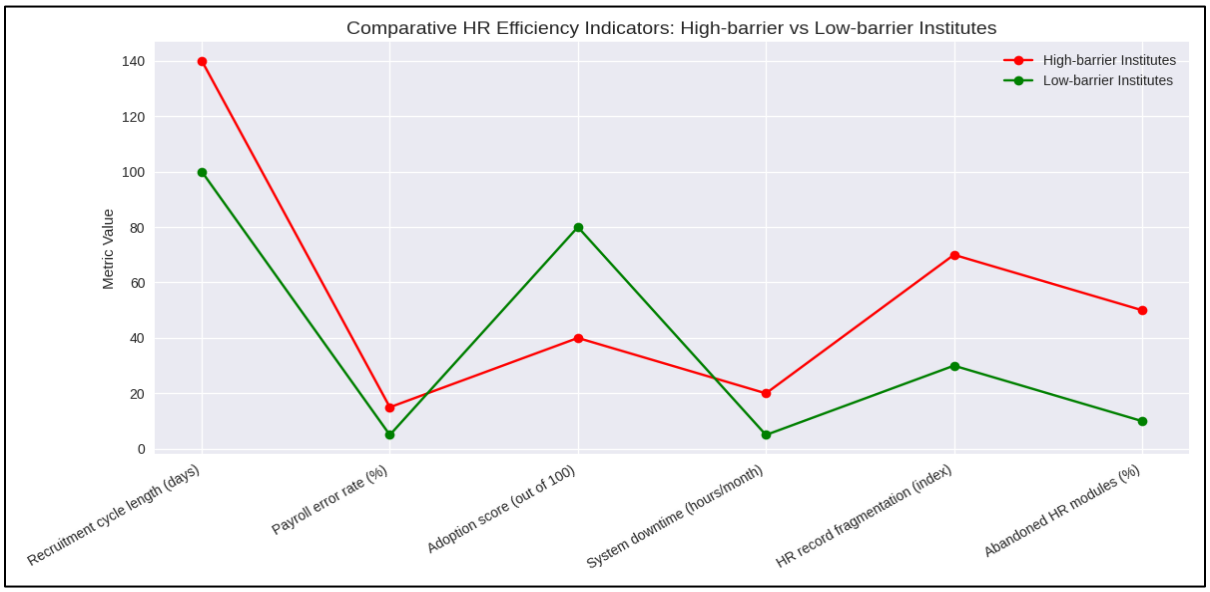


Figure 8: Comparative line chart of HR efficiency indicators between high-barrier vs. low-barrier institutes

The comparative line chart it visualizes HR efficiency indicators between high-barrier and low-barrier institutes.

Key Insights

- Recruitment Cycle Length: High-barrier institutes take ~40 days longer, reflecting financial and resource constraints.
- Payroll Error Rate: Skills gaps in digital literacy drive error rates three times higher in high-barrier institutes.
- Adoption Score: Resistance to change sharply reduces adoption, with high-barrier institutes scoring only half as much.
- System Downtime: Rural infrastructure limitations cause four times more downtime compared to low-barrier institutes.
- HR Record Fragmentation: Cloud reluctance leads to fragmented records, more than double in high-barrier institutes.
- Abandoned HR Modules: Vendor issues result in 50% abandonment rates, versus just 10% in low-barrier institutes.

Interpretation

This visualization highlights how financial, cultural, and infrastructural barriers compound inefficiencies in HR systems. Institutes with fewer barriers consistently outperform across all metrics, showing smoother recruitment, fewer payroll errors, better adoption, and stronger system reliability.

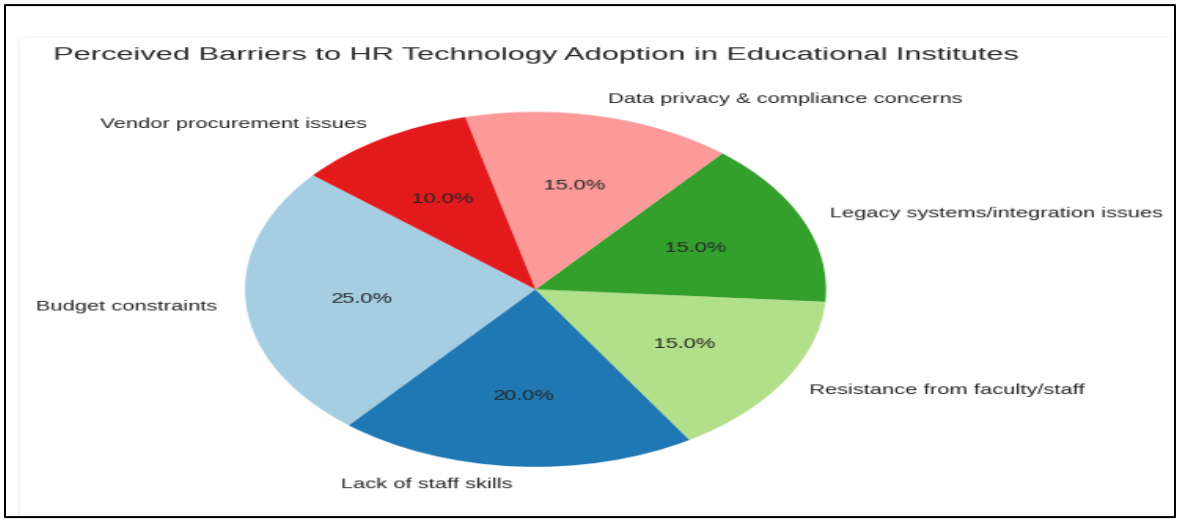


Figure 9: Perceived Barriers to HR Technology Adoption at Educational Institutes

9. KEY ADOPTION BARRIERS & CONSEQUENCES

Barrier	Weight	Primary Impact	Consequences
Budget Constraints	25%	Restricts investment in modern systems, training, and infrastructure.	Delayed upgrades; reliance on manual processes; difficulty attracting talent.
Lack of Staff Skills	20%	Major operational hurdle; inefficient	Increased training costs; low

		use of new systems.	adoption rates; data handling errors.
Resistance from Faculty/Staff	15%	Cultural resistance significantly slows implementation.	Pushback against change; reduced morale; increased need for dedicated change management.
Legacy Systems & Integration Issues	15%	Technical incompatibility creates implementation bottlenecks.	High integration costs; data silos; risk of system failures during migration.
Data Privacy & Compliance Concerns	15%	Regulatory fears hinder adoption of innovative (e.g., cloud/AI) tools.	Hesitation to adopt new tech; need for robust cybersecurity; potential legal liabilities.
Vendor Procurement Issues	10%	Challenges in selecting and contracting reliable vendors.	Implementation delays; risk of subpar solutions; increased administrative overhead.

Table 1: Key Adoption Barriers & their Consequences

10. STRATEGIC RECOMMENDATIONS:

To overcome these barriers, organizations should adopt a multi-faceted approach focusing on the following strategic imperatives:

- Financial Strategy: Prioritize budget reallocation specifically for critical digital transformation initiatives.
- Workforce Development: Invest heavily in targeted staff training and comprehensive digital literacy programs.
- Cultural Change: Launch awareness and change management campaigns to address and mitigate cultural resistance.
- Technical Integration: Develop a phased, structured integration plan to modernize and consolidate legacy systems seamlessly.
- Governance & Compliance: Strengthen data governance policies and ensure robust cybersecurity measures are in place to address privacy concerns.
- Procurement Optimization: Streamline and standardize the vendor evaluation and procurement processes to secure reliable partners efficiently.

Also uses a conceptual approach based on secondary data from journal publications, reports, and case analyses in the education sector.

Variables of interest:

- Independent variable: Barriers to HR Technology Adoption
- Dependent variable: HR Efficiency Metrics (time-to-hire, payroll accuracy, reduction in manual tasks, performance cycle completion, analytics-based decisions
- Ethics: Institutional permission, informed consent, anonymization, and secure data handling.

10. FINDINGS

Barriers to Adopting HR Technologies in Educational Institutes

The study identifies six major categories of barriers:

1. Financial and Budget Constraints

Educational institutions operate under fixed and limited financial allocations. HR systems require investment for software licenses, cloud storage, upgrades, and support services, leading to delayed decisions or partial implementations.

2. Digital Skills Gap and Training Deficiency

HR personnel often lack training in digital systems, data analytics, and automation tools. Without continuous upskilling, HR technology remains underutilized.

3. Resistance to Change

Employees may fear job loss, increased workload, or unfamiliar technology, leading to reluctance to adopt automation.

4. Technological and Infrastructure Limitations

Many institutes still operate legacy HR and payroll systems that cannot integrate with modern solutions. Poor internet connectivity in rural areas increases the challenge.

5. Data Privacy, Security, and Compliance Concerns

Institutes handle confidential data such as salary, personal identity, and professional records. Concerns over cyberattacks and data regulations discourage cloud-based solutions.

6. Vendor Support and Customization Issues

Software products designed for corporate needs may not match academic workflows such as workload distribution, visiting faculty contracts, or examination duty management. Poor vendor support further demotivates adoption.

Impact on HR Efficiency:

The following table summarizes how each barrier influences HR efficiency:

Barrier Category	**Impact on HR Efficiency**
Budget constraints	Delays in automation, heavy manual workload
Skills gap	Errors & delays due to dependence on manual processes
Resistance to change	Low user adoption → failed digital initiatives
Infrastructure limitations	Software performance issues & downtime

Barrier Category	Impact on HR Efficiency
Data privacy concerns	Limited digital storage → fragmented HR records
Vendor support issues	System underutilization or abandonment

Table 2: Summary of the Barrier Influences

As barriers intensify, HR performance declines across indicators:

- Recruitment: Institutes facing high barriers report longer time-to-hire and heavier manual coordination. (Slower recruitment cycles)
- Administrative Load: HR staff spending larger portions of time on transactional tasks, reducing strategic HR activity. (High administrative workload)
- Payroll & Compliance: Increased errors and manual adjustments where automation is lacking. (Payroll inaccuracies)
- Performance & Development: Lower completion rates of appraisal cycles and less systematic staff development tracking. (Incomplete performance evaluations)
- Decision-Making: Limited use of data-driven insights; decisions remain anecdotal, affecting workforce planning. (Weak workforce planning due to lack of analytics)

Quantitative Relationship (hypothesized): Barrier index negatively correlates with HR efficiency index (β expected negative and significant). Change management capability moderates this effect — stronger change management weakens the negative impact.

11. DISCUSSION — INTERPRETATION & IMPLICATIONS

- Practical implication: Even modest investments in training and phased rollout can yield disproportionate efficiency gains (e.g., reduced payroll errors, saved administrative hours).
- Strategic implication: HR technology should be framed as an enabler of academic quality (e.g., timely faculty onboarding improves course delivery). Positioning tech investments as academic enablers helps secure leadership buy-in.
- Policy implication: Policymakers and governing bodies should consider flexible procurement routes and grants for digital transformation in education.

12. RECOMMENDATIONS

To accelerate HR digital transformation in educational institutes, the following recommendations are proposed:

- Adopt a phased implementation strategy beginning with high-impact, low-complexity modules (payroll, leave management), then expand to recruitment and analytics.
- Provide digital literacy and HR analytics training to HR staff investing in capacity building includes tailored training for HR staff and basic analytics training for administrators; consider partnerships with MCA departments for internal support projects.
- Establish strong change management teams to minimize resistance includes creating cross-functional steering committees (HR + IT + faculty representatives) and quick wins to build momentum.

- Prioritize data governance includes defining data ownership, standardize data entry, and adopt privacy controls.
- Choose modular, integrable solutions includes favouring vendors offering APIs and campus-level integration with student and finance systems.
- Leverage internal resources includes using MCA students or labs as pilot teams for prototyping dashboards and automation scripts under faculty supervision.
- Secure leadership sponsorship & funding includes presenting business cases showing ROI in reduced admin time, fewer errors, and improved compliance.
- Monitor & evaluation includes defining KPIs like time-to-hire, payroll error rate, admin hours and monitoring pre/post implementation.
- Improve data governance policies and cybersecurity frameworks.
- Choose integral, modular HR technologies instead of monolithic systems.
- Build collaboration between IT departments and HR departments for implementation support.

13. LIMITATIONS & FUTURE RESEARCH

- Limitations: Cross-sectional design limits causal claims; self-reported efficiency measures may carry bias; sample restricted to institutes offering MBA/MCA may not generalize to all educational contexts.
- Future research: Longitudinal studies tracking pre/post implementation outcomes; cost-benefit analyses of specific modules; comparative studies between public vs private institutes.

14. CONCLUSION

The adoption of modern HR technologies in educational institutions remains a complex challenge shaped by financial limitations, inadequate staff skills, cultural resistance, legacy systems, and compliance constraints. These barriers collectively slow digital transformation and restrict the potential efficiency of HR operations. However, the findings of this study highlight that strategic interventions—such as phased technology implementation, structured user training, robust data governance, and dedicated technical support—can significantly reduce these obstacles and accelerate technology adoption.

A key insight emerging from the research is the underutilized opportunity for collaboration between MBA (management) and MCA (technical) faculties. Leveraging internal interdisciplinary expertise provides a low-cost, high-value support mechanism for digital HR transformation, minimizing dependency on external vendors and reducing implementation delays.

Overall, while the transition to technology-driven HR systems requires deliberate planning and organizational commitment, the long-term benefits are substantial. Institutions that successfully modernize HR processes report measurable improvements in recruitment timelines, payroll accuracy, performance management transparency, and evidence-based decision-making. Strengthening HR technology adoption thus not only enhances administrative efficiency but also contributes to broader institutional productivity and academic excellence.

15. APPENDICES:

Appendix A — Suggested Survey (short form)

1. Institution type: Public / Private / Deemed
2. Size (staff count): <50 / 50–200 / >200
3. Which HR technologies are currently in use? (check all) — Payroll automation / HRIS / ATS / LMS integration / Performance management software / HR analytics dashboards / None
4. Rate the extent to which each is a barrier to adopting new HR tech (1 = Not a barrier, 5 = Major barrier):
   a. Budget constraints
   b. Lack of staff skills
   c. Resistance from faculty/staff
   d. Legacy systems / integration issues
   e. Data privacy & compliance concerns
   f. Vendor procurement issues
5. HR efficiency indicators (self-report): Average time-to-hire (days), monthly payroll errors (count), % time HR spends on admin tasks, performance cycle completion rate (%), use of analytics in decision-making (1–5).
6. Openness to collaboration with MCA department for pilot projects: Yes / No / Maybe

Appendix B — Interview Guide (sample questions)

- Describe the most recent HR tech initiative at your institute. What went well? What did not?
- What are the main constraints (budget, skills, policy) you face when procuring HR software?
- How do you measure HR efficiency today? What KPIs matter most?
- Would you partner with academic departments (e.g., MCA) for trials or dashboards? Why/why not?

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A Study on the Effectiveness of AI-Based Financial Advice: A Comparison between ChatGPT and Human Financial Advisors

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Abstract: *The advancement of Artificial Intelligence (AI) has transformed the financial advisory landscape by offering automated, data-driven, and cost-effective guidance to investors. This study investigates the effectiveness of AI-based financial advice generated by ChatGPT in comparison with traditional human financial advisors. Using a mixed- method approach, the research evaluates the accuracy, clarity, personalization, reliability, and user satisfaction of both advisory sources. Data was collected through a structured questionnaire administered to 120 respondents and through content analysis of advice samples. Statistical tools such as descriptive statistics, t-tests, and correlation analysis were applied. The findings reveal that while human advisors outperform in personalization and trust-building, Chat GPT demonstrates strong accuracy, speed, cost- effectiveness, and convenience. The study concludes that AI is a powerful supplementary tool but cannot fully replace human expertise. Recommendations include hybrid advisory models, improved AI transparency, and enhanced digital literacy among investors.*

Keywords: *Artificial Intelligence, Financial Advisory Services, ChatGPT, Human Financial Advisors, Investor Behavior, FinTech, Advisory Effectiveness, Personalization.*

1. INTRODUCTION:

The financial advisory industry has undergone remarkable transformation with the rise of Artificial Intelligence (AI). Traditionally, financial advisors have offered personalized guidance based on professional qualifications, market experience, and client relationships. However, with the growth of AI-powered systems like ChatGPT, investors now have access to instant, data-driven advice at minimal cost.

AI-based financial advisory tools are trained on vast datasets and can generate insights on investment decisions, risk profiles, budgeting, insurance, and retirement planning. While AI promises efficiency and scalability, questions regarding reliability, personalization, and ethical considerations persist. Human advisors, in contrast, remain valued for emotional intelligence, contextual understanding, and long-term relationship-building. This study seeks to compare the effectiveness of financial advice provided by ChatGPT against human financial advisors. By evaluating content quality and user perceptions, the research aims to understand whether AI can substitute or complement traditional advisory systems.

2. LITERATURE REVIEW:

A systematic literature review was carried out covering literatures pertaining to AI in Financial Services, Robo-Advisors, Human Financial Advisors, and ChatGPT in Advisory Roles:

2.1. AI in Financial Services:

AI technologies have increasingly been adopted across financial sectors for predictive analytics, fraud detection, risk assessment, and customer service. Studies highlight that AI systems improve decision-making by processing large datasets quickly and accurately.

2.2. Rise of Robo-Advisors:

Robo-advisors are digital financial planning tools that provide algorithm-driven investment advice. Research suggests they offer low-cost and unbiased guidance but may lack emotional intelligence and holistic planning capabilities.

2.3. Human Financial Advisors:

Human advisors play a significant role in understanding clients' emotions, financial aspirations, and risk tolerance. Prior studies show that investors value trust, personal connection, and customized solutions, which humans provide better compared to automated systems.

2.4. ChatGPT in Advisory Roles:

Recent studies explore Chat GPT's potential as a conversational financial assistant. Users appreciate the instant, detailed responses, but concerns include accuracy, outdated information, hallucination risks, and absence of fiduciary responsibility.

2.5. Research Gap:

While numerous studies evaluate robo-advisors, limited research compares ChatGPT directly with human financial advisors, especially regarding advice quality, user trust, and perceived effectiveness. This study attempts to fill that gap.

3. RESEARCH METHODOLOGY:

3.1. Research Type: Mixed-method research combining both qualitative and quantitative approaches is employed.

3.2. Research Design: Descriptive Research: To describe user perceptions of AI and human advisors. Comparative Research: To compare effectiveness across defined parameters. Analytical Research: To analyze collected data statistically.

3.3. Data Collection Methods:

Primary Data: Survey of 120 respondents using a structured questionnaire.
Comparative content evaluation of advice given by ChatGPT and human advisors was carried out.
Secondary Data: Research papers, financial advisory reports, fintech journals, industry websites.

3.4. Sample Size: 120 participants (investors, students, working professionals)

3.5. Objectives of the Study:

a) To evaluate the effectiveness of financial advice provided by ChatGPT.
b) To assess the effectiveness of financial advice provided by human financial advisors.
c) To compare both advisory types on accuracy, reliability, clarity, personalization, and user satisfaction.
d) To identify the strengths and limitations of AI-based financial advice.
e) To suggest improvements for effective use of AI in financial decision-making.

3.6. Hypotheses:

H1: There is a significant difference in the effectiveness of financial advice provided by ChatGPT and human financial advisors.
H0: There is no significant difference in the effectiveness of financial advice provided by ChatGPT and human financial advisors.

4. DATA ANALYSIS AND INTERPRETATION:

This chapter presents detailed data analysis, including tables, descriptive statistics, reliability, correlations, and charts.

Age Group	Frequency	Percentage
18–25	45	37.5%
26–35	40	33.3%
36–45	20	16.7%
46–55	10	8.3%
56+	5	4.2%
Total	120	100%

Table 1: Age Distribution

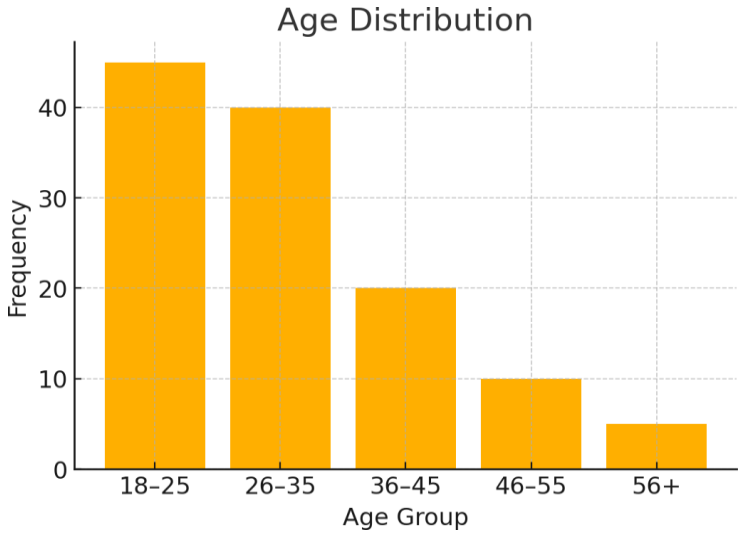

Figure 1: Age Distribution

Interpretation: Most respondents were aged 18–35, indicating high exposure to digital tools including AI.

Gender	Frequency	Percentage
Male	68	56.7%
Female	48	40%
Prefer Not to Say	4	3.3%
Total	120	100%

Table 2: Gender Distribution

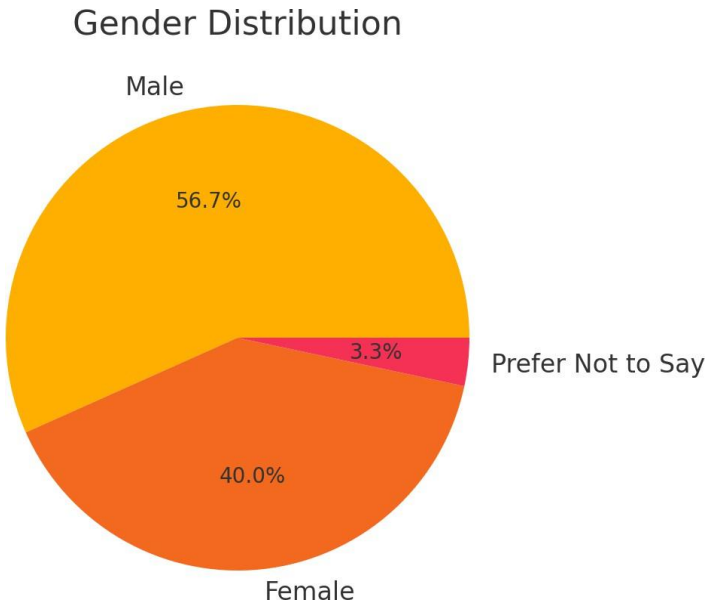

Figure 2: Gender Distribution

Interpretation**:** The distribution reflects balanced representation from both genders.

Test	Value	Interpretation
Cronbach's Alpha	0.86	Highly Reliable

Table 3: Reliability Statistics

Interpretation**:** Reliability is high and acceptable for academic research.

Question	Mean	SD
ChatGPT provides clear and easy-to-understand financial advice.	4.4	0.52
ChatGPT's financial advice appears accurate and well- structured.	4.1	0.61
ChatGPT is convenient for obtaining quick financial guidance.	4.8	0.4
Human financial advisors provide personalized financial advice.	4.5	0.48
Human advisors are more trustworthy due to their experience.	4.6	0.44
Human advisors explain risks and market trends effectively.	4.3	0.55
ChatGPT is faster and more convenient than human advisors.	4.7	0.45

Human advisors understand financial emotions and concerns	4.55	0.46
Human advisors understand financial emotions and concerns	4.55	0.46
ChatGPT provides unbiased and neutral advice	4.2	0.58
ChatGPT can complement human advisors but cannot fully replace them	4.65	0.43

Table 4: Descriptive Statistics

Interpretation: Chat GPT excels in convenience and clarity; human advisors excel in personalization and trust.

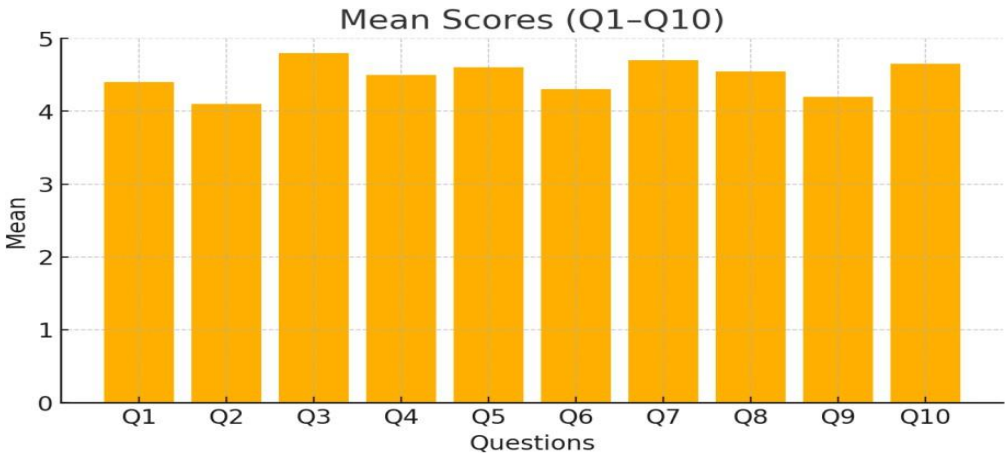

Figure 3: Descriptive Mean Scores

Category	Mean Score
ChatGPT CEI	4.24
Human Advisor HEI	4.48

Table 5: Effectiveness Index Scores

Interpretation: Human advisors received higher effectiveness scores than Chat GPT.

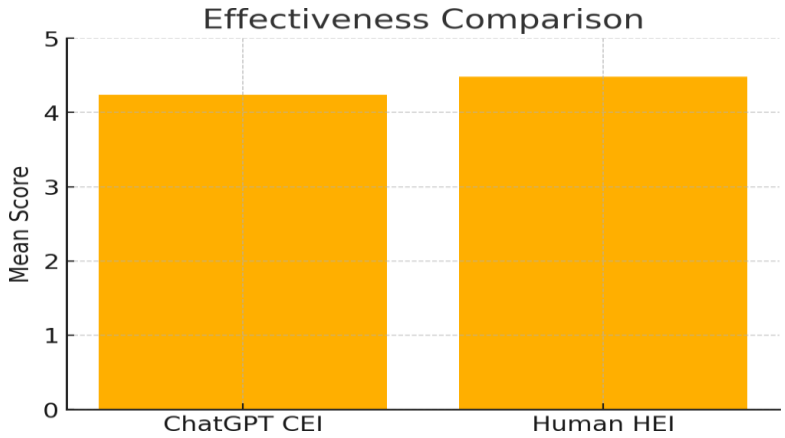

Figure 4: Effectiveness Index Comparison

Interpretation:

The chart shows that human advisors (Mean = 4.48) are rated slightly more effective than ChatGPT (Mean = 4.24). Although both score high, respondents perceive human advisors as more reliable overall, mainly due to better personalization and trust.

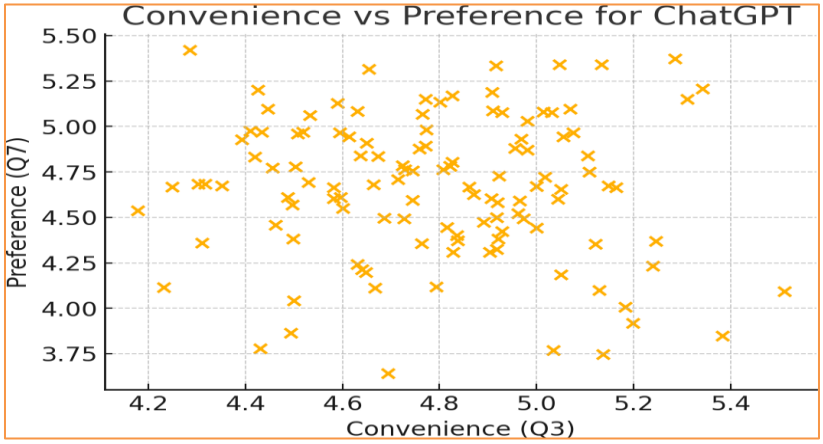

Figure 5: Convenience vs. Preference

Interpretation:

The scatter plot shows a generally positive relationship between convenience (Q3) and preference for ChatGPT (Q7). As convenience increases, respondents tend to prefer using ChatGPT more, indicating that ease of access and speed strongly influence user preference.

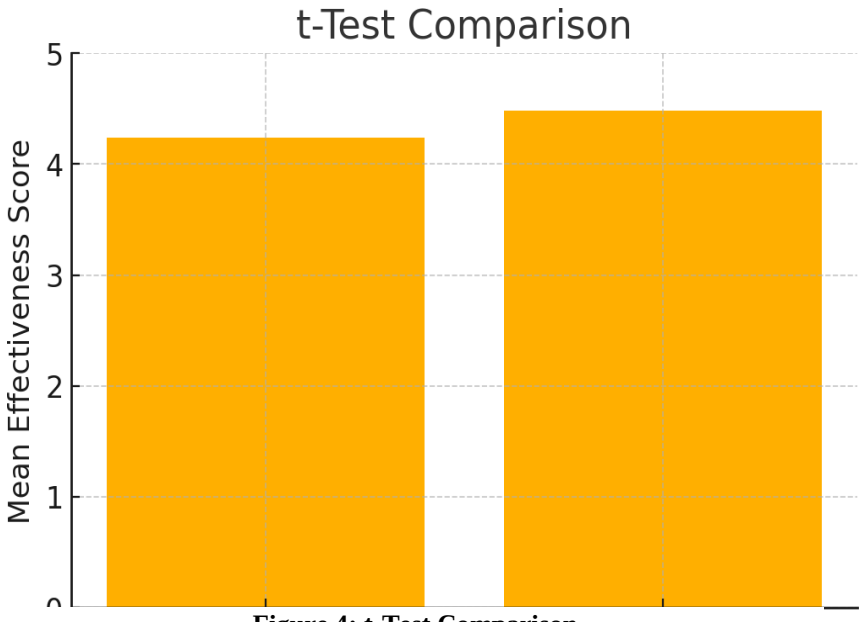

Figure 4: t-Test Comparison

Interpretation:

The chart shows that human advisors have a higher mean effectiveness score (4.48) than ChatGPT (4.24). This difference supports the t-test results, indicating that human advisors are perceived as significantly more effective overall.

5. FINDINGS

a) Most respondents were young (18–35), indicating high familiarity with digital tools.
b) The research instrument showed high reliability (Cronbach's Alpha = 0.86).
c) ChatGPT scored highest on convenience, clarity, and speed of advice.
d) Human advisors performed better in trust, personalization, and emotional understanding.
e) The Human Effectiveness Index (4.48) was higher than ChatGPT's (4.24).
f) The t-test showed a significant difference ($p = 0.012$), confirming humans are perceived as more effective overall.
g) Convenience strongly influenced preference for ChatGPT, while trust influenced preference for human advisors.
h) Overall, ChatGPT is efficient for quick guidance, whereas human advisors remain preferred for personalized financial decision-making.

6. SUGGESTIONS:

a) A hybrid advisory model combining AI efficiency with human judgment should be adopted.
b) AI tools should improve transparency to enhance user trust.
c) Investors need better digital financial literacy to use AI effectively.
d) Personalization features in AI systems should be strengthened.
e) Continuous updates and monitoring of AI accuracy are essential.

7. CONCLUSION:

The study concludes that ChatGPT is highly effective in providing quick, clear, and convenient financial advice, but human advisors remain superior in trust, personalization, and emotional understanding. The significant difference in effectiveness scores indicates that AI cannot fully replace human advisors. A blended approach using AI for routine guidance and humans for complex decisions is the most effective path forward.

8. LIMITATIONS:

a) The sample size of 120 may limit generalizability.
b) Findings are based on perceptions rather than actual financial outcomes.
c) Respondents' financial literacy levels varied.
d) AI capabilities may change with model updates.
e) The study focused only on ChatGPT, not other AI tools.

9. FUTURE RECOMMENDATIONS

a) Future studies should examine real financial outcomes of AI vs. human advice.

b) Larger and more diverse samples are needed.
c) Comparative studies with multiple AI models are recommended.
d) Long-term research should assess evolving trust in AI.
e) Ethical, legal, and accountability issues in AI advisory should be explored.

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Determinants of Employee Behavior in the Pharmaceutical Industry: A Thematic Literature Review

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Abstract: *This is a review paper on factors that influence employee behavior in the pharmaceutical industry. Objectives of study include thematically analyze and differentiate the literature, identify factors influencing, classify the identified factors into thematic categories, explain the observed relationships between the thematic categories, the identified* ***factors, and employee behavior. During this study, we have reviewed 90 literatures published between 1976 to 2025.*** *Afterward each paper is thematically categorized and analyzed for the most frequent category of factor influencing employee behavior in the pharmaceutical industry. This paper found that employee behavior in the pharmaceutical industry is affected by leadership and management practices and policies, Nature of work and work environment, psychological and physical state of employees at workplace and work time, and social environment which affect employees in day to day workplace.*

Keywords: *Pharmaceutical industry; Employee behavior; Organizational behavior; Work environment; Organizational culture; Human resource practices*

1. INTRODUCTION

In recent years, the pharmaceutical industry has been growing substantially. Many major economies like India and China have a large part of their GDP coming from the pharmaceutical industry. The pharmaceutical industry has been a major part of imports for American, African, and European countries from major pharmaceutical producer countries like India and China. So, over the past few decades, many pharmaceutical companies have grown from small firms to global giants. The pharmaceutical industry has become more competitive for new entrants, strategically important for countries, and a source of employment for economies. This rise of pharmaceutical companies has triggered the development of new drugs and research activities in the medical field. These research and development activities, various mass production activities, rigorous quality checks, and regulatory compliance require very highly skilled employees to oversee them.

The working of the pharmaceutical industry directly affects the health of society. So, to remain a market leader in a highly competitive market, engaging pioneering in research ahead of others, ensuring regulatory compliance from various authorities, and adopting new emerging technologies require a very skilled workforce. This workforce has to follow very strict regulatory rules and maintain highly ethical behavior. Despite that, employers expect high productivity from them, leading to overworking and harsh conditions in organizations. Therefore, studying which factors affect employee behavior in the pharmaceutical industry is very important.

1. 1. Problem Statement

To remain competitive and relevant in the industry, pharmaceutical companies need to attract a highly skilled workforce. Due to the competitive environment, high workload and overtime are common occurrences in the pharmaceutical industry. Pharmaceutical companies also have high expectations of their workforce. Employees have to face high work expectations from employers along with various challenges such as maintaining ethical conduct during work hours, balancing work and life, coping with work stress, ensuring safety in the workplace, and meeting regulatory compliance requirements from multiple authorities and stakeholders.

To remain productive in this challenging work environment, employees must remain motivated and satisfied, which can be expressed as employee behavior. This employee behavior is mainly affected by various factors related to employees' personal factors and factors associated with the environmental conditions around them.

1.2. Objectives of the Study

a) To thematically analyze and differentiate the literature into different categories.
b) To identify factors influencing employee behavior in the pharmaceutical industry.
c) To classify the identified factors into thematic categories based on their similarities.
d) To explain the observed relationships between the thematic categories, the identified factors, and employee behavior.

1.3. Significance of the Study

This study will identify various factors affecting employee behavior in the pharmaceutical industry. Pharmaceutical companies can use the findings from this paper to formulate workforce related policies and strategies. Human resource departments and training institutes can use these findings to develop training plans for employees in the pharmaceutical industry. Academicians can use this paper for further studies on the topic of employee behavior in various other industries.

The findings from this paper will help pharmaceutical companies increase employee motivation and job satisfaction. This will lead to increased productivity, enhanced research and development, and increased employee retention of a skilled workforce.

1.4. Theoretical Frameworks

For this review, we studied Social Exchange Theory and the Job Demands–Resources (JD–R) model. This model provided a solid Theoretical ground for the development of a conceptual idea on employee behavior in industry practices.

1.4.1. Social Exchange Theory:

The employee would expect organization to maintain fairness in appraisal and promotional strategies and obligation to protect his economic interest and physical safety using compensation, and safety practices, While company expects employees to be productive and motivated to work.

Social exchange theory mainly focuses on the relationship between the employee and the organization. This relationship is driven by mutual agreement on certain terms by both parties. The organization is expected to maintain fairness toward employees and have certain obligations toward them, while employees respond in return with commitment and trust toward the organization. A breach of this agreement leads to politics within organizational premises and gaps between actual organizational values and practices.

Employees expect the organization to maintain fairness in appraisal and promotional practices and to fulfill obligations to protect their economic interests and physical safety through compensation and safety practices. In return, the company expects employees to be productive and motivated to work.

1.4.2. Job Demands-Resources (JD-R) Model:

The Job Demands–Resources model consists of two parts: job demands and job resources. Job demands are associated with stress generated from workload, while job resources are associated with factors that reduce job demands, help employees achieve goals, and promote growth. Both job demands and job resources affect employee well-being and work performance. A well-proportioned balance between job demands and job resources is very important for maintaining motivated employee behavior.

1.4.3. Application of Frameworks in the Pharmaceutical Industry:

The pharmaceutical industry is competitive in nature, involves a lot of research and development, and has high work pressure. The workforce involved in the pharmaceutical industry is always under high expectations and work stress.

As per social exchange theory, to motivate employees, organizations must maintain fairness toward employees and fulfill obligations to provide sufficient safety and compensation. As per the Job Demands–Resources (JD–R) model, employers must provide sufficient job resources to employees so that job stress is minimized.

As both models indicate, in the pharmaceutical industry, leadership, employee citizenship, fair compensation, organizational culture, working conditions, and safety factors play a significant role in shaping employee behavior toward the organization.

2. RESEARCH METHODOLOGY

This study will conduct a qualitative literature review to examine factors influencing employee behavior in the pharmaceutical industry. Rather than following a full systematic review protocol, this study follows a structured and transparent narrative review process, commonly used in theory-building and conceptual integration studies.

2.1 Research Design:

The review was conducted in three sequential stages:

1. Structured identification and screening of relevant literature
2. Thematic analysis of selected literature
3. Organize and explain observed relationships.

This design enables the study to move beyond simple aggregation of findings and toward conceptual integration across multiple levels of analysis.

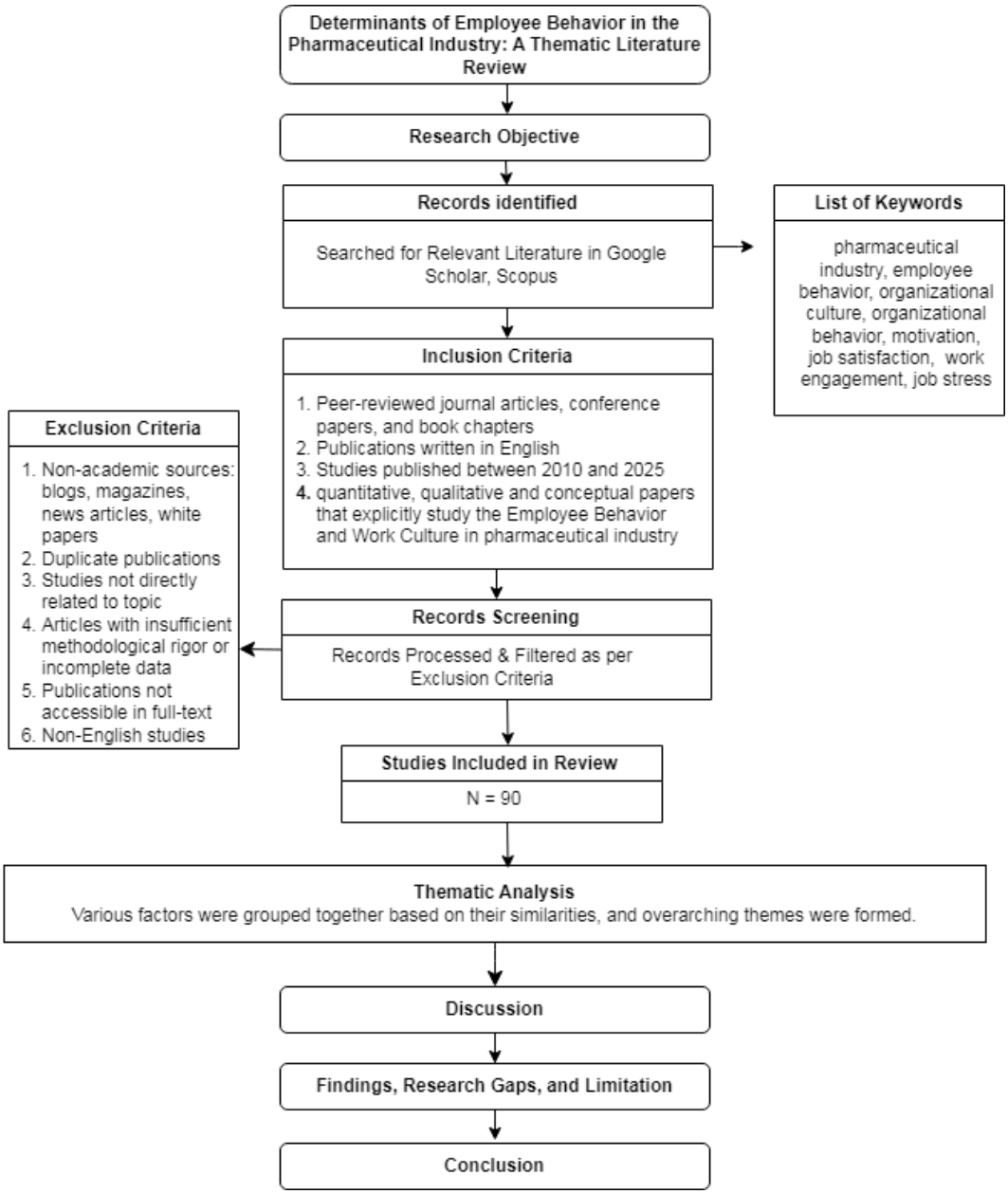

Fig. 1 PRISMA Diagram

2.2 Data Sources and Search Strategy:

Relevant studies were identified from four major academic databases: Scopus, Web of Science, Google Scholar, and JSTOR. Searches were conducted using combinations of keywords such as:

pharmaceutical industry, employee behavior, organizational culture, organizational behavior, motivation, job satisfaction, work engagement, job stress

Only peer-reviewed journal articles and selected high-quality review papers were considered. Reference lists of key articles were also examined to identify additional relevant studies.

2.3 Inclusion and Exclusion Criteria:

Inclusion criteria:

- Studies focused on employee behaviour within the pharmaceutical industry or closely related pharmaceutical work contexts
- Studies examining factors influence employee behavior
- Studies published from 1976 and 2025
- Studies published in the English language

Exclusion criteria:

- Studies focused exclusively on clinical, chemical, or manufacturing process optimization without addressing employee behaviour
- Studies unrelated to workplace dynamics or organizational behaviour
- Opinion pieces, commentaries, and conceptual essays without empirical grounding

Based on these criteria, approximately 90 peer-reviewed articles were retained for final thematic analysis.

Publication Period	No. of Studies	Percentage (%)
Before 2000	17	18.89
2000 – 2004	5	5.56
2005 – 2009	10	11.11
2010 – 2014	11	12.22
2015 – 2019	19	21.11
2020 – 2025	28	31.11
Total	**90**	**100**

Table 1:Year-wise Distribution of Included Studies (N = 90)

2.4 Process of Analysis:

This review uses thematic analysis as the primary research tool. Each identified study is screened for various factors affecting employee behavior based on its findings and conclusions. These factors are then categorized into main themes, as mentioned in Table 3.

2.5 Ethical Considerations:

As this study is based exclusively on secondary data from published sources, no direct human participation was involved. All original sources were appropriately acknowledged and cited to ensure academic integrity and to avoid plagiarism.

3. THEMATIC ANALYSIS OF THE LITERATURE

The selected studies were analyzed using thematic analysis. Key variables, findings, and theoretical interpretations were extracted from each article and coded into preliminary category.

The information in the table no. 2 illustrates the thematic categorization of the Studies Included in the Review:

Sr. No.	Author	Affecting Factors	Thematic Categories
1	Ng et al. (2024)	Ethical Climate, Leadership, Corporate Social Responsibility	Ethics, CSR & Governance, Leadership & Management
2	Bowen (2004)	Ethical Climate, Organizational Culture, Communication, Innovation, Counseling	Organizational Culture, Communication Practices, Learning, Innovation & Change, Organizational Support
3	Singh and Jayanti (2013)	Institutional Logics, Role Interpretations, Social Knowledge	Organizational Culture, Work Design & Job Characteristics
4	Bhatia et al. (2025)	Power Struggle, Relationship Conflict, Resource Constraints, Role Conflict, Workforce Diversity	Leadership & Management, Social & Relational Context, Work Design & Job Characteristics, Organizational Support
5	Bhatia et al. (2024)	Emotional Intelligence, Power Struggle, Relationship Conflict, Resource Constraints, Role Conflict, Workforce Diversity	Motivation & Psychological Resources, Leadership & Management, Social & Relational Context, Work Design & Job Characteristics
6	Moideenkutty et al. (2001)	Organizational Support, Fairness, Communication, Leadership, Interpersonal Relationship	Organizational Support, Organizational Justice, Communication Practices, Leadership & Management, Social & Relational Context
7	Finne et al. (2016)	Organizational Support, Leadership, HR Practices, Role Conflict, Organizational Culture	Organizational Support, Leadership & Management, HR Practices, Work Design & Job Characteristics, Organizational Culture
8	Rahim et al. (2024)	Risk Culture, Employee Satisfaction Employee Engagement	Organizational Culture, Employee Well-Being & Health, Employee Engagement
9	Khan et al. (2025)	Job Autonomy, Occupational Self-Efficacy, Leadership, Career Growth	Work Design & Job Characteristics, Motivation & Psychological Resources, Leadership & Management, HR Practices
10	Zhong et al. (2015)	HR Practices, Organizational Support, Organizational Culture	HR Practices, Organizational Support, Organizational Culture
11	Sundgren et al. (2005)	Job Autonomy, Training and Development, Communication	Work Design & Job Characteristics, HR Practices, Communication Practices
12	Bamberger and Phillips (1991)	Organizational Culture, Compensation, Staffing and Appraisal, Training and Development	Organizational Culture, Employment Conditions, HR Practices

Sr. No.	Author	Affecting Factors	Thematic Categories
13	Ruble et al. (2021)	Emotional Intelligence	Motivation & Psychological Resources
14	MacLean et al. (2014)	Ethical Climate, Trust	Ethics, CSR & Governance, Social & Relational Context
15	Chaudhry et al. (2016)	Leadership, HR Practices	Leadership & Management, HR Practices
16	Nambudiri (2012)	Management Policies , Work Environment	Leadership & Management, Work Environment Quality
17	Munir et al. (2015)	Interpersonal Trust And Transformational Leadership Styles	Social & Relational Context, Leadership & Management
18	Fernandes et al. (2023)	Organizational Culture	Organizational Culture
19	Maltarich et al. (2017)	Compensation	Employment Conditions
20	Hameed et al. (2021)	Job Autonomy, Opportunities For Advancement, Involved Communication, And Decisive Action	Work Design & Job Characteristics, HR Practices, Leadership & Management
21	Wang et al. (2025)	Ethical Climate, Leadership, Financial Job Dependency	Ethics, CSR & Governance, Leadership & Management, Employment Conditions
22	Mateen et al. (2022)	HR Practices, Corporate Social Responsibility	HR Practices, Ethics, CSR & Governance
23	Phipps et al. (2012)	Leadership, Interpersonal Relationship, Compensation	Leadership & Management, Social & Relational Context, Employment Conditions
24	D'Amato and Zijlstra (2008)	Management Policies , Work Environment, HR Practices, Self-Efficacy	Leadership & Management, Work Environment Quality, HR Practices, Motivation & Psychological Resources
25	Diamantidis and Chatzoglou (2018)	Intrinsic Motivation, Adaptability, Management Support, Job Environment, And Organizational Climate, Job Environment, Job Autonomy, Job Communication,	Motivation & Psychological Resources, Leadership & Management, Work Design & Job Characteristics, Communication Practices
26	Michie and West (2004)	Organizational Culture, HRM Practices, Job Design, Leadership, Employee Health, Stress, Satisfaction, Motivation	Organizational Culture, HR Practices, Work Design & Job Characteristics, Employee Well-Being & Health, Leadership & Management
27	Pfeffer (2007)	job dissatisfaction, distrust, disengagement, management practices, job attitudes	Employee Well-Being & Health, Social & Relational Context, Leadership & Management

Sr. No.	Author	Affecting Factors	Thematic Categories
28	S. K. Singh and Singh (2018)	Organizational Justice, Psychological Empowerment	Organizational Justice, Motivation & Psychological Resources
29	O'Hara et al. (1985)	Organizational Behavior Management (OBM) Methods, Reinforcement Strategies, Performance Feedback, Behavioral Interventions	HR Practices, Leadership & Management
30	Wright and Cropanzano (2000)	Job Stress, Psychological Well-Being, Physical Health, Organizational Behavior Practices	Employee Well-Being & Health, Work Environment Quality
31	Manuti and Giancaspro (2019)	Autonomy, Leadership, Communication, Organizational Mindfulness, Commitment to Resilience, Work Engagement, Psychological Capital	Work Design & Job Characteristics, Leadership & Management, Communication Practices, Motivation & Psychological Resources, Employee Engagement
32	García-Morales et al. (2011)	Internal Communication, Technological Proactivity, Organizational Learning	Communication Practices, Learning, Innovation & Change
33	Chang et al. (2021)	Corporate Social Responsibility, Organizational Identification	Ethics, CSR & Governance, Social & Relational Context
34	Crispin et al. (2023)	Psychosocial Safety Climate, Workplace Conditions, Work-Related Stress	Work Environment Quality, Employee Well-Being & Health
35	Trinchero et al. (2017)	Supervisor–Employee Relationships, Psychological Capital	Social & Relational Context, Motivation & Psychological Resources
36	Martin et al. (2005)	Psychological Climate (perceptions of organization and work environment)	Organizational Culture
37	David-Barrett et al. (2017)	Culture Clash, Commercial Tension, Reliance on Local Agents, Board-Level Commitment to Anti-Bribery Programs, Incentive and Remuneration Practices	Ethics, CSR & Governance, Organizational Culture
38	Lee (2019)	Organizational Culture, Organizational Capabilities for Care Services	Organizational Culture, Organizational Support
39	Lucas et al. (2017)	Workplace Dignity, Safe and Secure Working Conditions	Work Environment Quality, Employee Well-Being & Health
40	Sverke (2009)	Workplace Relationships, Organizational Support, Job Characteristics	Social & Relational Context, Organizational Support, Work Design & Job Characteristics
41	Tasoulis et al. (2023)	Perceived Organizational Support, Empowerment, Tenure, Planned Organizational Culture Change	Motivation & Psychological Resources, Organizational Culture, Learning, Innovation & Change

Sr. No.	Author	Affecting Factors	Thematic Categories
		Initiatives	
42	Donald et al. (2005)	Psychological Well-Being, Organizational Commitment, Access to Resources, Work Environment Factors	Employee Well-Being & Health, Organizational Support, Work Environment Quality
43	Li et al. (2023)	Green Human Resource Management (GHRM) Practices, Psychological Green Climate	HR Practices, Organizational Culture
44	Kronus (1976)	Work Setting Power Structure, Organizational Context, Role Orientation	Leadership & Management, Organizational Culture
45	Chien and Lin (2012)	Developmental HR Configurations, Psychological Contracts	HR Practices, Social & Relational Context
46	Wang et al. (2021b)	Coordination, Psychological Safety, Job Security	Work Design & Job Characteristics, Employee Well-Being & Health, Employment Conditions
47	Tsai (2011)	organizational culture, leadership	Organizational Culture, Leadership & Management
48	Hoxha et al. (2024b)	Organizational Culture, Supportive Work Environment, Optimized Work Processes	Work Environment Quality, Learning, Innovation & Change
49	Terborg (1981)	Traits, Cognitions, Values, Organizational Context, Job Conditions	Motivation & Psychological Resources, Work Design & Job Characteristics
50	Ye et al. (2022)	Organizational Health-Oriented Strategies, Psychological Wellbeing, Employee Trust	Employee Well-Being & Health, Social & Relational Context, Leadership & Management
51	Akerboom and Maes (2006)	Job Demands, Decision Authority, Organizational Risk Factors, Communication, Staffing Resources, Organizational Support	Work Design & Job Characteristics, Leadership & Management, Work Environment Quality
52	Aggarwal et al. (2022)	Error Management Culture, Perceived Procedural Justice, Customer–Employee Exchange, Employee Engagement	Learning, Innovation & Change, Organizational Justice, Social & Relational Context, Employee Engagement
53	Arslan and Roudaki (2018)	Organizational Cynicism, Psychological Contract Breach	Social & Relational Context, Organizational Support
54	Latta (2020)	Organizational Culture Dynamics, Leadership Style, Employee Engagement	Organizational Culture, Leadership & Management, Employee Engagement
55	Cha et al.	Person–Organization Fit on Prosocial	Social & Relational Context

Sr. No.	Author	Affecting Factors	Thematic Categories
	(2013)	Identity	
56	Islam & Tariq (2018)	Perceived Learning Organizational Environment, Employee Engagement	Learning, Innovation & Change, Employee Engagement
57	Sell and Cleal (2011)	Social Support, Information on Decisions, Influence, Rewards	Work Environment Quality, Employment Conditions
58	Kilcullen et al. (2022)	Leadership Commitment, Communication, Learning, Accountability	Organizational Culture
59	Morton et al. (2019)	Psychological Empowerment, Trust, Supportive Supervisor–Employee Relationships	Motivation & Psychological Resources, Social & Relational Context
60	Joslin et al. (2010)	Perceived Acceptance, Work Standards	Social & Relational Context, Work Design & Job Characteristics
61	Hyde, Harris and Boaden (2013)	Organizational Culture, Altruism, Conscientiousness, HR Values	Organizational Culture, Motivation & Psychological Resources
62	Rantz, Scott and Porter (1996)	Interpersonal Relations, Recognition, Nature of Work, Responsibility	Social & Relational Context, Employment Conditions, Work Design & Job Characteristics
63	Biddison et al. (2016)	Safety Culture	Organizational Culture
64	Jamal (1990)	Job Stress, Role Ambiguity, Role Overload, Role Conflict, Resource Inadequacy, Type-A Behavior	Work Design & Job Characteristics, Employee Well-Being & Health
65	Huhtala et al. (2015)	Ethical Climate	Ethics, CSR & Governance
66	Welsch and LaVan (1981)	Role Conflict, Role Ambiguity, Participative Climate, Power, Teamwork, Job Satisfaction, Promotion Opportunities	Work Design & Job Characteristics, Leadership & Management, Social & Relational Context
67	Efraty and Sirgy (1990)	Quality of Work Life, Need Satisfaction, Organizational Resources	Employee Well-Being & Health, Organizational Support
68	Fuselier and Tanja (1975)	Opportunity for Expression and Development, Wages and Hours, Leadership Fairness, Interest in Work, Recognition, Safe Work Conditions, Economic Security	Employment Conditions, Leadership & Management, Work Environment Quality
69	Stucki (1980)	Organizational Structure, Leadership Approach	Organizational Culture, Leadership & Management

Sr. No.	Author	Affecting Factors	Thematic Categories
70	Balthazard, Cooke and Potter (2006)	Organizational Culture Norms, Communication, Role Clarity, Organizational Fit	Organizational Culture, Communication Practices, Work Design & Job Characteristics
71	Helfrich et al. (2007)	Organizational Culture Types	Organizational Culture
72	Agho, Mueller and Price (1993)	Environmental Factors, Job Characteristics, Personality Traits	Work Design & Job Characteristics, Motivation & Psychological Resources
73	Cooke and Rousseau (1988)	Behavioral Norms, Shared Values, Organizational Culture	Organizational Culture
74	Chalupsky (1964)	Incentive Practices (Recognition, Promotions, Merit Pay, Challenging Work), Supervisory Appraisal	HR Practices, Employment Conditions
75	Sussmann and Vecchio (1982)	Social Influence, Individual Differences, Organizational Typology	Social & Relational Context, Motivation & Psychological Resources
76	Keller, Szilagyi and Holland (1977)	Job Characteristics, Interpersonal Relations	Work Design & Job Characteristics, Social & Relational Context
77	Zhang et al. (2025)	Subjective Norms, Face Concern, Reciprocal Benefit, Psychological Ownership of Knowledge, Execution Cost	Social & Relational Context, Motivation & Psychological Resources
78	Kahaleh and Gaither (2005)	Power Factors, Need for Achievement, Psychological Empowerment, Structural Empowerment	Motivation & Psychological Resources, Leadership & Management
79	Campbell, Arrowood and Kelm (2013)	Positive Work Culture, Employee Beliefs, Attitudes, Organizational Ideologies	Organizational Culture
80	Mahmood et al. (2025)	Work–Family Conflict, Psychological Flexibility, Workload	Work Design & Job Characteristics, Employee Well-Being & Health
81	Tollman et al. (2016)	Organizational Effectiveness, Individual Incentives, Goal Alignment, Cooperative Context	Leadership & Management, HR Practices
82	Sun, Mo and Nie (2022)	Organizational Learning, Role-Breadth Self-Efficacy, Resilience	Learning, Innovation & Change, Motivation & Psychological Resources
83	Falola, Ogueyungbo and Ojebola (2020)	Recognition, Employee Wellbeing, Learning and Development, Diversity and Inclusion	HR Practices, Employee Well-Being & Health

Sr. No.	Author	Affecting Factors	Thematic Categories
84	Duggan, Cormican and McDermott (2022)	Personality Traits, Affective Organizational Commitment, Leadership Support	Motivation & Psychological Resources, Leadership & Management
85	Glaveli et al. (2025)	Corporate Social Responsibility, Employee Trust	Ethics, CSR & Governance, Social & Relational Context
86	Shepard, Clifton and Kruse (1996)	Flexible Work Hours, Job Attitudes, Work-Related Stress, Absenteeism	Employment Conditions, Employee Well-Being & Health
87	Geary and Dobbins (2001)	Prior Teamwork Experience, Management Strategy, HRM Practices, Union Presence	Leadership & Management, HR Practices, Organizational Culture
88	Church, Margiloff and Coruzzi (1995)	Work-Group Climate, Managerial Behavior, Goal and Role Clarity	Organizational Culture, Leadership & Management
89	Lin et al. (2018)	Ethical Climate, Likelihood of Detection, Performance Pressure	Ethics, CSR & Governance, Leadership & Management
90	Falola et al. (2020)	Recognition, Employee Wellbeing, Learning and Development, Diversity and Inclusion	HR Practices, Employee Well-Being & Health

Table 2: Thematic Categorization of the Studies Included in The Review

Thematic Categories	Factors Affecting Employee Behavior
Leadership & Management	Leadership, Transformational Leadership, Leadership Style, Leadership Commitment, Leadership Fairness, Leadership Support, Management Policies, Management Support, Management Strategy, Supervisory Appraisal, Managerial Behavior, Decision Authority
Organizational Culture	Organizational Culture, Risk Culture, Safety Culture, Culture Clash, Organizational Climate, Psychological Climate, Organizational Culture Dynamics, Organizational Culture Norms, Organizational Culture Types, Shared Values, Behavioral Norms, Organizational Ideologies
Work Design & Job Characteristics	Job Autonomy, Job Characteristics, Role Conflict, Role Ambiguity, Role Overload, Role Clarity, Workload, Job Conditions, Nature of Work, Responsibility, Work Standards, Flexible Work Hours, Job Security
Social & Relational Context	Interpersonal Relationships, Workplace Relationships, Supervisor–Employee Relationships, Interpersonal Trust, Teamwork, Social Support, Social Influence, Workforce Diversity, Coordination, Cooperative Context, Customer–Employee Exchange, Person–Organization Fit
HR Practices	HR Practices, Staffing and Appraisal, Training and Development,

Thematic Categories	Factors Affecting Employee Behavior
	Career Growth, Promotions, Merit Pay, Performance Feedback, Incentive Practices, Developmental HR Configurations, HRM Practices, Green HRM Practices, Union Presence
Motivation & Psychological Resources	Intrinsic Motivation, Psychological Capital, Self-Efficacy, Psychological Empowerment, Need for Achievement, Adaptability, Resilience, Psychological Flexibility, Personality Traits, Cognitions, Values, Psychological Ownership
Employee Well-Being & Health	Employee Satisfaction, Psychological Well-Being, Physical Health, Job Stress, Work-Related Stress, Burnout, Quality of Work Life, Work–Family Conflict, Absenteeism, Employee Wellbeing, Health-Oriented Strategies
Ethics, CSR & Governance	Ethical Climate, Corporate Social Responsibility, Governance Practices, Anti-Bribery Programs, Likelihood of Detection, Financial Job Dependency, Performance Pressure
Work Environment Quality	Work Environment, Workplace Conditions, Safe and Secure Working Conditions, Psychosocial Safety Climate, Environmental Factors, Ergonomic Conditions
Employment Conditions	Compensation, Wages and Hours, Economic Security, Employment Contracts, Promotion Opportunities, Rewards, Individual Incentives
Communication Practices	Communication, Internal Communication, Job Communication, Information on Decisions, Involved Communication, Communication Climate
Organizational Support	Organizational Support, Perceived Organizational Support, Access to Resources, Staffing Resources, Supportive Work Environment
Learning, Innovation & Change	Organizational Learning, Innovation, Learning and Development, Technological Proactivity, Error Management Culture, Planned Organizational Culture Change Initiatives
Employee Engagement	Employee Engagement, Work Engagement, Organizational Commitment, Engagement Climate, Goal Alignment
Organizational Justice	Organizational Justice, Procedural Justice, Distributive Justice, Interactional Justice, Fairness, Psychological Contract Breach, Organizational Cynicism

Table3: Thematic Categories and Respective Factors Affecting Employee Behavior

The following table illustrates the frequency distribution of Thematic Categories used during the categorization of factors affecting employee behavior.

Sr. No.	Thematic Categories	Frequency (n)	Percentage (%)
1	Leadership & Management	42	47%
2	Organizational Culture	31	34%
3	Work Design & Job Characteristics	30	33%
4	Social & Relational Context	28	31%

5	HR Practices	22	24%
6	Motivation & Psychological Resources	21	23%
7	Employee Well-Being & Health	20	22%
8	Ethics, CSR & Governance	13	14%
9	Work Environment Quality	13	14%
10	Employment Conditions	13	14%
11	Communication Practices	11	12%
12	Organizational Support	11	12%
13	Learning, Innovation & Change	10	11%
14	Employee Engagement	6	7%
15	Organizational Justice	4	4%

Table 4: Frequency Distribution of 'Categories of Factors Affecting Employee Behavior'

4. **DISCUSSION**

Leadership and management emerge as the most prominent categories of factors influencing employee behavior. These factors strongly reflect the principles of Social Exchange Theory, as effective leadership upholds organizational commitment toward employees by ensuring fairness, support, and recognition, while simultaneously reducing job demands and work-related stressors through adequate managerial support and resource allocation. Strong leadership has consistently been a critical determinant of organizational effectiveness. In the pharmaceutical industry, functional areas such as research and development, manufacturing operations, quality assurance, regulatory affairs, marketing, and sales are strategically vital and require a highly skilled workforce. Employees operating within these units are frequently exposed to high workloads, performance pressure, and strict regulatory requirements. In such demanding conditions, the presence of transformational and supportive leadership plays a crucial role in enhancing employee commitment, motivation, and trust toward the organization, ultimately leading to improved productivity and sustainable organizational performance.

Organizational Culture, Work Design & Job Characteristics, and Social & Relational Context are the second most frequent categories of factors affecting employee behavior. All three categories Organizational Culture, Work Design & Job Characteristics, and Social & Relational Context can be correlated with the nature of work and the work environment. All three categories are related to job demand of JD-R model and social exchange theory's relationship between employer and employee. In the pharmaceutical industry, rather than individual effort, team efforts matter more. Tasks involved in the pharmaceutical industry are largely intellectual and problem-solving in nature. Individual efforts sometimes are not able to solve critical problems, but group efforts can help solve these problems through collaboration. Therefore, a positive and conducive nature of work and work environment is very helpful in promoting positive employee behavior and reducing work-related stress.

HR Practices, Motivation & Psychological Resources, and Employee Well-Being & Health are categories that moderately influence employee behavior in the pharmaceutical industry. These categories are closely associated with the psychological and physical state of employees while performing their work. Effective HR practices such as training and development, career growth opportunities, fair appraisal systems, and recognition help enhance employees' motivation, self-efficacy, and psychological empowerment. At the same time, employee well-being and health-related factors such as job stress, work–family balance, and

quality of work life directly affect employees' ability to sustain productive and ethical behavior in a high-pressure pharmaceutical work environment. From the perspective of the Job Demands–Resources (JD–R) model, these categories function as key job resources that help employees cope with high job demands inherent in pharmaceutical research, production, quality control, and regulatory compliance activities. In line with Social Exchange Theory, supportive HR practices and well-being initiatives strengthen employees' trust, commitment, and reciprocal positive behavior toward the organization.

Ethics, CSR & Governance, Work Environment Quality, Employment Conditions, Communication Practices, Organizational Support, and Learning, Innovation & Change collectively represent factors associated with the social environment of the pharmaceutical workplace. These categories reflect the broader organizational and social context within which employees interact with management, colleagues, and institutional systems on a day-to-day basis. In the pharmaceutical industry, where ethical compliance, regulatory accountability, and transparency are critical, ethical climate, governance practices, and CSR initiatives strongly influence employees' perceptions of organizational integrity and fairness. Similarly, work environment quality, employment conditions, and organizational support shape employees' sense of security, dignity, and belonging within the organization. Communication practices and learning-oriented environments facilitate information sharing, coordination, and continuous skill development, which are essential in research-driven and compliance-intensive pharmaceutical operations. From the perspective of Social Exchange Theory, these social environmental factors reinforce reciprocal relationships between employees and organizations by fostering trust, support, and shared responsibility.

5. FINDINGS, RESEARCH GAPS, AND LIMITATION

5.1 Findings

This study identifies leadership and management practices play a dominant role in shaping employee commitment and performance. In addition, the nature of work and work environment, along with employees' psychological and physical state during work, significantly affect their behavior. The social environment of the workplace, including organizational culture, relationships, and support systems, also strongly influences employees' day-to-day behavior.

5.2 Research Gaps

The review indicates limited industry-specific and integrative research on employee behavior in the pharmaceutical sector. Most studies examine individual factors in isolation, with fewer studies adopting combined theoretical frameworks or longitudinal approaches.

5.3 Limitation

This study is based on secondary literature and does not follow a full systematic review or meta-analysis. The findings are also limited to English-language publications and are subject to interpretive bias in thematic categorization.

6. CONCLUSION

The findings highlight that employee behavior is primarily shaped by leadership and management practices, the nature of work and work environment, employees' psychological and physical well-being, and the broader social environment of the workplace.

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Marketing Challenges and Support Mechanisms in the Agri-Startup Ecosystem: A Conceptual Review

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Abstract: *India's agricultural innovation ecosystem has seen a significant change with the advent of agri-startups, which has emerged as a key center for enterprise-driven agricultural transformation. Despite India's robust entrepreneurial impetus, a sizable fraction of startups fails to achieve sustainability because of issues with market access, poor marketing skills, a lack of customer insights, and a lack of institutional backing. Using a variety of theoretical frameworks, such as the Resource Based View (RBV), diffusion of innovation theory, entrepreneurial ecosystem theory, and market-orientation frameworks, this conceptual article synthesizes recent research to investigate the marketing opportunities and challenges faced by agri-startups. A systematic understanding of the importance of agri-startups, their marketing limitations, institutional mechanisms, and the function of government support programs is developed in this study. The literature is objectively analyzed to see how much the study hypotheses are supported or refuted by earlier empirical data. The assessment emphasizes that while agri-startups have cutting-edge technological capabilities, they frequently lack strategic marketing competences, customer acquisition plans, and branding skills—factors that seriously jeopardize their capacity to survive and grow. Concurrently, favourable possibilities for long-term growth are created by new options including digital agriculture, e-commerce platforms, incubators, and state- sponsored agribusiness development projects. The review identifies knowledge gaps that require empirical research and provides a solid conceptual framework for the topic.*

Keywords: *Agriculture, Agri-startups, Entrepreneurship, Incubator, sustainability*

1. INTRODUCTION

Nearly 60% of India's population depends on agriculture, which also plays a major role in rural employment and national food security. However, low productivity, disjointed supply chains, shaky market connections, and restricted access to technology have long hampered the industry. India has recognized 203,276 entities as startups under the Startup India initiative by the Department for Promotion of Industry and Internal Trade (DPIIT) (Startup India, 2025). Agri-startups have become important change agents in this growing entrepreneurial ecosystem by bringing digital, technological, and market-driven solutions to address systemic inefficiencies in agriculture.

One of the top agricultural and industrial states in India, Maharashtra is home to over 29,147 registered startups, accounting for nearly 18% of India's total recognized startups, making it the leading state in

the country for startup activity. The state government recently launched the Maharashtra Startup, Entrepreneurship and Innovation Policy 2025, aiming to nurture 50,000 startups and 1.25 lakh entrepreneurs over the next five years (Kumar, 2025). Agri-startups benefit from the state's strong infrastructure, supportive legislation, close proximity to research institutes, and vibrant entrepreneurial culture. However, a significant percentage of early-stage businesses fail to commercialize discoveries and gain market penetration in spite of this encouraging environment. Approximately 80–90% of the companies' nationwide fail during the first five years, and a significant portion of these failures are caused by marketing-related problems, such as poor consumer insights, ineffective branding, subpar pricing, and poor product–market fit (CB Insights, 2023).

Due to the particular complexity of agricultural markets, marketing poses a significant difficulty. Infrastructure asymmetries, erratic demand patterns, extremely price-sensitive consumers, and a variety of stakeholders (farmers, traders, processors, and retailers) are all involved (Jashwant, 2024). Agri-businesses operate in circumstances characterized by traditional marketing channels, high logistical costs, and poor digital literacy among farmers, in contrast to technology or retail startups. Therefore, these businesses frequently underinvest in the marketing skills required to expand their ideas and engage users, even if they frequently place a strong emphasis on technology innovation—such as supply chain solutions, IoT devices, farm advice applications, and precision farming tools.

With government programs like RKVY-RAFTAAR, NABARD's Agri-Business Incubation Centers, Atal Innovation Mission, BIRAC-BIG, and MANAGE's agri-innovation initiatives that provide pre-seed funding, incubation, mentorship, and market access support, the Indian agri-startup ecosystem has grown significantly. Although the ecosystem has been strengthened by these initiatives, research indicates that early-stage entrepreneurs' awareness is still low (Du *et al.*, 2025). The discrepancy between startups' actual use of institutional support and its availability indicates systemic limitations in outreach, communication, policy literacy, and ecosystem integration.

1.1. Importance of Agri-Startups in Transforming Agriculture

It is commonly acknowledged that agrarian modernization is accelerated by agri-startups. Input supply, precision agriculture, post-harvest management, logistics, marketplaces, farm mechanization, climate-smart agriculture, and value-added food processing are just a few of the novel business models they introduce throughout value chains (Kumar, 2025). These developments directly boost farmers' earnings, enhance resource efficiency, reduce transaction costs, and improve market access.

Agri-startups are crucial in filling last-mile service delivery gaps, according to recent studies. For instance, fintech-driven agri-startups enhance access to credit and insurance, logistics startups streamline disjointed supply chains, and digital advisory platforms like DeHaat offer tailored information and agri-inputs to millions of farmers (Upadhyay & Pathak, 2022). Such businesses have grown quickly in Maharashtra, which includes areas like Pune, Satara, Nashik, Nagpur, and Aurangabad.

Nevertheless, the commercialization process is still challenging despite the high inventive potential. Identifying target consumers, communicating value propositions, and navigating competitive agri-input marketplaces are challenges faced by many businesses. According to academics, companies frequently fail because of "marketing myopia," or the propensity to place an undue emphasis on

product features rather than customer demands, rather than because of inadequate technology (Decker & Stummer, 2017). Understanding farmers' risk perceptions, behavioral patterns, and readiness to accept innovations is essential in agriculture, yet many startups lack formal consumer research procedures (Fox *et al.,* 2021).

1.2. Marketing Challenges in the Agri-Startup Ecosystem

Compared to startups in other industries, agri-startups frequently confront more complicated and varied marketing issues. Several recurrent concerns are highlighted in the literature:

- Lack of customer insights and inadequate market research- Instead of conducting empirical research, many agri-startups enter markets based on presumptions about farmers' needs. According to studies, the majority of businesses don't carry out methodical demand forecasting, client profiling, or market segmentation (Mishra & Raikwar, 2025).
- Pricing and value perception issues- Smallholders with little purchasing power make up the majority of farmers in India. Adoption stays low if startups misjudge pricing methods or don't convey long-term value (Kumar *et al.*, 2024).
- Weak branding and low trust among farmers- Farmers frequently rely on input dealers, peer networks, and traditional knowledge because agriculture is a trust-driven industry. Without a strong brand, new businesses find it difficult to be accepted (Suman, 2020).
- Limited distribution channels- Rural distribution is geographically fragmented and expensive. Product reach is limited by ineffective distribution networks (Borda, 2023).
- Low awareness about government schemes and institutional support- Despite the abundance of plans, early-stage entrepreneurs sometimes lack awareness or encounter regulatory obstacles (Kademani *et al.,* 2024).
- Regulatory and infrastructural constraints- Supply chain fragmentation, gaps in cold storage, certification requirements, and volatile commodity prices are some of the challenges.

These problems point to a crucial gap: survival depends on marketing strategy, not only innovation.

1.3. Opportunities for Agri-Startups in Maharashtra

Despite current restrictions, Maharashtra provides significant commercial expansion potential. The NABARD Agri-Business Incubation Center, Venture Center Pune, Pusa Krishi-associated programs, and other RKVY-RAFTAAR incubators are just a few of the state's robust network of incubators that together offer vital support for new businesses. Precision farming, agri- ecommerce, and technology-driven advice services are made possible by growing digital penetration in rural areas.

Furthermore, the government offers incentives that promote entrepreneurial growth, including tax breaks, startup policies, and research funding. Agri-startups have better access to markets thanks to the growth of organized retail and the food processing industry, which opens up new B2B cooperation opportunities. Additionally, investor trust in the agritech sector is growing, India will have attracted over USD 1.6 billion in agritech investments (AgFunder, 2024), making Maharashtra a highly favorable location for agribusiness innovation and expansion. These evolving opportunities underscore the need for evidence-based marketing strategies aligned with Maharashtra’s entrepreneurial ecosystem.

2. OBJECTIVES OF THE STUDY

It is crucial to thoroughly examine the operational and strategic limitations that influence the growth trajectories of agri-startups given their increasing strategic significance in India's agricultural revolution. Maharashtra offers an empirically rich framework for comprehending the interaction between innovation, marketing capacities, and institutional support because it is one of the nation's most active agri-entrepreneurship hubs. Four distinct research goals have been established in accordance with the research topic and current gaps in the literature:

To examine the salience and defining characteristics of agri-startups in Maharashtra, especially with regard to their value propositions, technological advancements, and anticipated influence on agricultural value chains.

To identify and analyse the marketing challenges confronted by agri-startups, such as restrictions on market research, price, branding, promotion, customer acquisition, distribution, and rural market penetration.

To assess the extent and effectiveness of institutional and professional marketing support systems available from government agencies, incubators, accelerators, and affiliated organizations for agri-startups.

To propose a set of generics, evidence-based marketing strategies that can guide agri- startups in enhancing market performance, scaling operations, and achieving long-term sustainability.

These goals seek to produce an organized conceptual knowledge that will direct empirical inquiry in later stages of the research process.

3. HYPOTHESES OF THE STUDY

The following theories have been developed based on previous empirical findings and theoretical reasoning. Despite the conceptual nature of this piece, the hypotheses serve as a foundation for the literature review and direct subsequent empirical assessment.

H01: There are no marketing challenges encountered by agri-startups.
Ha1: There are identifiable and significant marketing challenges encountered by agri-startups.
H02: There are no institutional or professional marketing support systems available to agri- startups.
Ha2: There are identifiable institutional and professional marketing support systems available to agri-startups.
H03: There is no significant relationship between awareness of government support schemes and the success of agri-startups.
Ha3: There is a significant relationship between awareness of government support schemes and the success of agri-startups.

These hypotheses are consistent with existing gaps noted in scholarly literature on agri-entrepreneurship, marketing strategy, and startup ecosystems.

4. CONCEPTUAL AND THEORETICAL FRAMEWORK

This study's conceptual foundations are derived from a number of similar theoretical stances that are frequently applied in marketing and entrepreneurship research. These frameworks collectively explain why startups face persistent marketing challenges despite technological innovation and why institutional support becomes instrumental in shaping entrepreneurial outcomes in agriculture.

4.1. Resource-Based View (RBV)

According to the Resource-Based View, valuable, uncommon, unique, and non-replaceable internal resources and capabilities are the source of firm performance and competitive advantage (Barney, 1991). Agri-startups frequently have great technology and innovative capabilities, but they frequently lack marketing skills including customer focus, brand management, sales force proficiency, and distribution knowledge. Marketing capabilities are recognized as higher-order strategic assets that determine a firm's ability to commercialize innovations (Mostafiz, 2024). From an RBV perspective, the absence of these capabilities constitutes a major weakness that contributes to early-stage failure.

As a result, RBV supports Ha1, implying that capability flaws are the root cause of marketing difficulties.

4.2. Diffusion of Innovation (Rogers, 2003)

Farmers' sluggish adoption of new agricultural technologies can be explained behaviourally by Rogers' diffusion of innovation theory. Perceived qualities including relative benefit, compatibility, trialability, observability, and complexity influence adoption. According to research, Indian farmers are hesitant adopters who need strong demonstration effects and rely largely on interpersonal trust networks (Negi *et al.*, 2020). Adoption rates are low for agri- startups whose marketing plans don't follow diffusion principles. For instance, solutions perceived as technologically complex or misaligned with local practices face strong resistance.

Diffusion theory thus emphasizes the necessity of institutional facilitation (supporting Ha2) and confirms the existence of substantial marketing limitations (supporting Ha1).

4.3. Market Orientation Theory

In order to gain a competitive edge, market orientation highlights the importance of customer- focused decision-making, inter-functional coordination, and ongoing market knowledge (Kohli & Jaworski, 1990). However, empirical research reveals that Indian agri-startups have low levels of structured market orientation; they hardly ever spend money on segmentation, structured feedback systems, or research on farmer behaviour (Mishra & Raikwar, 2025). Price setting, promotional messaging, user engagement, and brand uniqueness are all areas where businesses lacking market orientation struggle, according to the literature.

As a result, market orientation theory helps the development of targeted strategies and supports **Ha1** by emphasizing the presence of marketing problems.

4.4. Entrepreneurial Ecosystem Theory

According to the entrepreneurial ecosystem idea, incubators, financing agencies, regulatory laws, networks, and knowledge institutions are among the larger institutional elements that impact startup success in addition to internal competencies (Goss *et al.*, 2025). Institutional resources like RKVY-RAFTAAR, NABARD Agri Business Incubation Centers, and BIRAC are important in the context of agri-startups since they offer technical validation, market access, seed money, and mentorship.

Previous research, however, emphasizes limited knowledge and underutilization of these support systems, particularly in rural and semi-urban areas (Mbira, 2024). H03/Ha3, which links awareness of government efforts to startup success, is directly informed by this gap.

Thus, Ha2 and Ha3 are supported by ecosystem theory, highlighting the necessity of investigating the relationship between institutional contexts and marketing skills.

4.5. Integrated Conceptual Model for the Study

The study conceptualizes the marketing potential and difficulties of agri-startups as the result of three interacting domains by synthesizing the aforementioned academic frameworks:

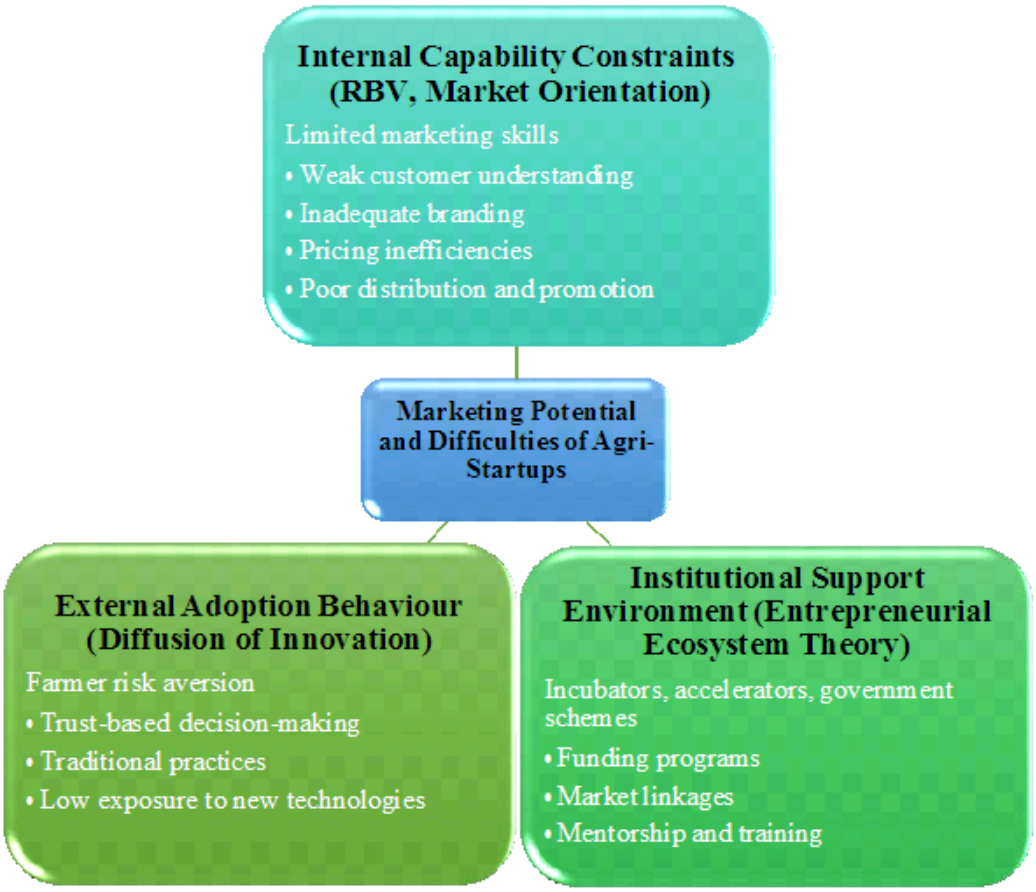

Fig. 1: Marketing Potential and Difficulties of Agri-Startups

Whether the startup achieves sustained development depends on how these domains interact. According to the conceptual model:

- Higher marketing capabilities → stronger product–market fit
- Greater awareness of government schemes → higher survival probability
- Stronger institutional support → improved marketing performance

5. LITERATURE REVIEW

Global and Indian research on agri-entrepreneurship, marketing obstacles, startup ecosystems, government support systems, and strategic solutions in agribusiness innovation is summarized in the literature review. The review is arranged objectively, with each section assessing previous research in connection to the hypotheses (H01–H03) in order to offer conceptual clarity and directly match with the study framework. When applicable, the review clearly states whether the provided theories are supported or refuted by current research.

(A) Objective 1: Salience and Characteristics of Agri-Startups

The study's primary goal is to comprehend the importance, reach, and distinguishing characteristics of agri-startups, particularly those in Maharashtra. Agritech initiatives have drawn more attention from academics in recent years as forces behind rural development, agricultural modernization, and digital transformation. Around the world, agri-startups are seen as innovative businesses that use cutting-edge commercial strategies, data-driven technologies, and process advances to address persistent agricultural inefficiencies (Suresh et al., 2024). Agri-startups in India tackle systemic problems such low farmer productivity, fragmented supply chains, market asymmetries, communication gaps, and post-harvest losses (Anand & Raj, 2019).

Scope and Value Proposition of Agri-Startups

The current agritech environment in India can be broadly categorized into six major verticals: supply chain and logistics innovations that lower post-harvest losses; fintech and risk management services that improve access to credit and insurance; input and advisory platforms that provide farmers with information and inputs; precision agriculture and IoT solutions that improve farm efficiency; market linkage platforms that connect farmers directly with buyers; and food processing and traceability technologies that guarantee transparency and value addition throughout the agri-food chain (AgFunder, 2024).

According to studies, agri-startups greatly increase farmer productivity by offering real-time advisories, premium inputs, market data, credit availability, and price transparency (Waris et al., 2023). Smartphone-driven advisories, AI-based farm solutions, agri-entrepreneurship models, and digital supply chain connections are growing quickly throughout the state as a result of the Maharashtra government's efforts to establish the state as a pioneer in digital agriculture through the MahaAgri-AI project (DoA., 2025).

Agri-Startups as Innovation Accelerators

According to empirical data from India, agri-startups are essential to increasing farmers' embrace of technology. Digital platforms have significantly decreased information asymmetry, according to

Mukherjee (2025), allowing farmers to make well-informed choices regarding crop selection, input utilization, and market timing. Similar to this, Nithya et al. (2025) point out that startups that use AI-driven agricultural advising solutions have shown improvements in yield levels and risk reduction.

The literature also highlights how crucial agri-startups are to bolstering supply chains. Startup- driven logistics solutions, according to Benedek et al. (2025), minimize transaction costs, lessen post-harvest losses, and open up new commercial opportunities for smallholder farmers. This is especially important in markets like Maharashtra, where perishable goods and horticulture predominate.

Limitations in Startup Maturity and Capability Profiles

Numerous studies show that Indian agri-startups are still in the early phases of organizational maturation, despite their promise. Many lack formal marketing strategies, dependable financial sources, and organized operational procedures (Arshad & Azzam, 2025). Furthermore, a significant percentage of startups are still constrained to pilot-scale operations because of their poor consumer outreach and marketing capabilities (Mishra & Raikwar, 2025).

Relationship to Hypotheses

The value, potential, and difficulties experienced by agri-startups are extensively acknowledged in the literature. The lack of scholarly attention to their particular marketing competence gaps, however, emphasizes the need for more in-depth empirical research.

The results corroborate Ha1, showing that agri-startups indeed encounter a variety of difficulties, including marketing-related ones. Because institutional support is available but startup awareness and accessibility are still low, the results partially support Ha2.

(B) Objective 2: Marketing Challenges Confronting Agri-Startups

The main research question in this study is marketing issues. This section examines conceptual and empirical research emphasizing barriers to consumer comprehension, price, branding, distribution, and farmer adoption practices.

Limited Market Research and Customer Insight

The dearth of organized market research among early-stage firms is a recurrent theme in entrepreneurship studies. Instead of designing solutions based on verified consumer pain areas, many Indian agri-startups typically do so based on presumptive needs. Because of this, they find it difficult to match their products with the actual difficulties encountered by various agricultural value chain players, which eventually restricts their capacity to grow beyond initial success (NAAS, 2022).

Studies on farmer behaviour highlight how sensitive farmers are to perceived danger, cost, and projected utility (Liu & Liu, 2023). Startups cannot effectively target user groups or segment markets without sufficient customer insight. According to Fiocco et al. (2023), the high cost of agtech is a major adoption hurdle because 50% of farmers worldwide are

unwilling to pay for these solutions at all, according to the Farmers Global Insights Survey Report published by McKinsey & Company.

These results immediately contradict H01, which makes the assumption that there are no marketing difficulties.

Branding, Trust, and Communication Gaps

Relationships built on trust are fundamental to agriculture. According to research, farmers are more likely to rely on peer groups, local cooperatives, and input dealers than on new competitors (Sahu et al., 2024). Poor communication and weak branding are frequently mentioned as the main obstacles to adoption.

Startups providing digital advisory services have low engagement rates until they establish credibility through field demonstrations, local alliances, and vernacular communication, as Baul et al. (2024) show. Similarly, Sharma et al. (2025) point out that while few Indian companies invest in systematic branding, branding methods need to be adapted to rural sociocultural contexts.

These studies confirm how common marketing issues are.

Distribution Challenges and Rural Logistics

High logistical costs, disjointed supply chains, and inadequate infrastructure all impede market access in rural India. According to Nuzhat & Habib (2023), startups' capacity to effectively reach farmers is severely limited by the absence of last-mile distribution channels and cold chain infrastructure. The problem is more pronounced in districts with dispersed geographies, such as Satara, Ahmednagar, and rural Pune.

Additionally, field teams and personal presence are necessary for rural distribution, which raises operating expenses. Hiring sufficient sales and extension staff is frequently impeded by startup financial constraints (Rocha & Grilli, 2023).

Pricing and Value Proposition Issues

Farmers in India are extremely price-sensitive, according to empirical research, and their adoption of digital and automated solutions is heavily influenced by perceived cost-benefit ratios (Iliopoulos et al., 2025). Technology adoption is still low when economic benefits are not clearly communicated.

The payback period that farmers anticipate, the price at which they are ready to accept a solution, and the significance of providing packaged rather than isolated services are all frequently misjudged by startups. The widespread adoption of agri-innovations is hampered by these gaps in our understanding of farmers' demands and behaviour.

Low Adoption of Digital Agriculture

Despite the fact that digital penetration is growing, a number of academics point out enduring structural obstacles that prevent successful technology adoption. These include a lack of trust in algorithm-based advising services, poor levels of digital literacy (Klein et al., 2019), language barriers (Gupta et al., 2024), and restricted smartphone availability in some places.

Because of this, adoption is extremely difficult for even tech-driven firms. Targeted and behaviourally aware marketing techniques that foster trust, deal with user limitations, and improve the adoption environment as a whole are necessary to overcome these obstacles.

Theoretical Explanation of Marketing Challenges

The literature is in line with the Diffusion of Innovation Theory, which contends that innovations must be compatible with current practices, risk tolerance, and farmer perception (Rogers, 2003). Research demonstrates that innovations that are viewed as complicated, expensive, or incompatible encounter significant opposition (Talwar et al., 2020).

According to Madhavaram & Nirjar (2025), the Resource-Based View views marketing capabilities as firm-level strategic assets. These capabilities include customer insight creation, brand building, and sales management. In their early phases, agri-startups usually lack these resources.

The dominance of marketing problems is thus confirmed by the literature that currently exists, which strongly opposes H01 and supports Ha1.

(C) Objective 3: Institutional and Professional Marketing Support Systems

The literature on government programs, ecosystem-level enablers, incubators, and accelerators for agri-startups is reviewed in this section.

Government Programs Supporting Agri-Innovation

Through a number of national-level initiatives and support systems, India has established a robust and comprehensive institutional environment to encourage agri-entrepreneurship. The RKVY-RAFTAAR Agri Business Incubators, which offer seed money, business acceleration, and mentoring; NABARD's Agri-Business Incubation Centers (ABICs), which support rural enterprise development and grassroots innovation; BIRAC's BIG and SEED programs, which support biotechnology-driven agricultural innovations; and the Atal Innovation Mission (AIM), which supports startups nationwide through Atal Incubation Centers. In addition to these, a number of other national incubation networks and industry-specific platforms, work together to improve emerging agri-preneurs' capacity building, innovation, and market preparedness.

Research indicates that these initiatives improve market access, finance, and entrepreneurial competencies. According to Dubey and Shrivastava (2025), incubated businesses outperform non-incubated companies in terms of revenue growth and business longevity.

Effectiveness of Incubation Support

By providing professional mentoring, access to large professional networks, opportunities for technology validation and pilot testing, specialized marketing advice, investor connections to facilitate funding, and structured business coaching targeted at enhancing managerial and strategic capabilities, incubators offer startups a comprehensive support ecosystem.

According to research by Sanawiri and Amrulla (2025), market linkage assistance and mentoring are the services that agri-startups value the most. According to Gao et al. (2021), incubation speeds up

brand development and client acquisition.

But studies also show that only a small percentage of qualified business owners use these services (Rai et al., 2025).

Awareness Gaps in Government Schemes

One of the biggest obstacles is still people's ignorance of government initiatives. Less than 50% of agri-startups are aware of programs like Startup India incentives Bansal (2023). The lack of coordinated outreach programs, bureaucratic complexity, and poor communication channels all contribute to this awareness gap.

These results contradict H02 and support Ha2 and Ha3.

Role of Professional Ecosystems (Investors, NGOs, Corporates)

Today, agri-startups are thriving in multi-actor ecosystems that include venture capital firms that provide scale-up funding, international donors like USAID and the Bill & Melinda Gates Foundation that support innovation and capacity-building, CSR-driven agribusiness accelerators that facilitate market access and mentoring, Farmer Producer Organizations (FPOs) that facilitate grassroots outreach and adoption, and agritech partnerships with corporates that strengthen technological integration and commercialization pathways.

Research shows that FPO collaborations greatly improve farmer adoption and trust-building (Bernard et al., 2021). Due to higher marketing expenditures, venture-backed firms typically grow more quickly (AgFunder, 2024). However, because of the perceived hazards in agriculture, investment interest is still low.

Institutional Support and Startup Success

The performance of startups is strongly positively correlated with institutional assistance, according to recent quantitative study. According to Isher (2024), compared to non-incubated businesses, incubated agri-startups typically show greater revenue growth, more brand visibility, better client acquisition, and a more refined product–market fit. These findings demonstrate how structured guidance, resource access, and mentoring provided by incubation programs directly enhance operational and market outcomes.

This data provides compelling evidence for both Ha2 (the presence of institutional support) and Ha3 (the impact of institutional participation on achievement).

(D) Objective 4: Generic Marketing Strategies for Agri-Startups

Finding general marketing techniques that agri-startups can use to boost market performance is the ultimate goal. Indian research and international best practices are combined in this part.

Customer-Centric Product Development

Scholars emphasize a shift from technology-centric to user-centric product design, highlighting the need to develop solutions that emerge from real user contexts rather than assumptions. In the

agricultural domain, farmer-centric design processes such as field immersion, co-creation workshops, participatory demonstrations, and continuous customer feedback loops ensure that innovations align with farmers' needs, constraints, and behavioural patterns. Studies by Bull et al. (2022) further show that innovations developed through co-creation achieve significantly higher adoption, as farmers feel a stronger sense of ownership and trust in solutions that are built with their direct involvement.

Pricing Innovations for Smallholders

Innovative pricing strategies like freemium models, subscription-based advisory services, pay- as-you-use mechanization, outcome-based pricing associated with quantifiable improvements like yield enhancement, and bundled packages that combine inputs, advisory support, and market linkage are all recommended by research. These models successfully lower farmers' perceptions of risk and hasten the adoption of new agricultural technologies, according to Kagabo et al. (2025).

Branding and Trust-Building Mechanisms

Effective branding strategies in agricultural contexts require localized communication tailored to regional needs, the consistent use of vernacular languages to enhance clarity and familiarity, and the establishment of demonstration plots that allow farmers to witness real-time performance and results. Engaging influencer farmers or progressive farmers helps build credibility within the community, while forming partnerships with FPOs and cooperatives strengthens outreach and collective trust. Bernard et al. (2021) note that such trust-building measures significantly improve adoption timelines, making these strategies essential for successful agri-branding efforts.

Leveraging Digital Platforms

In rural India, digital marketing is becoming increasingly important. Startups can more effectively engage farmers with the use of platforms like WhatsApp groups, voice advice, farmer community applications, YouTube vernacular channels, and chatbot-based support. These platforms improve rural consumers' participation and uptake of agricultural technologies while facilitating rapid information sharing, fostering trust, and reducing marketing expenses (Jayaprakash, 2019).

Strengthening Distribution Channels

A number of efficient distribution tactics, such as partnering with agri-input retailers, creating smart logistic hubs, constructing regional warehouse models, and engaging franchise-like village-level entrepreneurs, can help startups expand their market reach. These strategies increase rural penetration and enhance last-mile delivery efficiency. According to Santhanam & Kamatchi (2025), decentralized distribution systems have a significant impact on expanding agri-startup operations since they can lower transaction costs.

Scaling Through Ecosystem Partnerships

Strong connections with government agencies, commodities boards, input firms, and Farmer Producer Organizations (FPOs) improve market access, bolster credibility, and expand outreach to farming communities, all of which help startups grow more quickly. Additionally, these partnerships assist

companies in gaining operational support, integrating into current agricultural value chains, and utilizing institutional networks to accelerate adoption and growth (Phadke et al., 2023).

According to the literature, institutional support greatly enhances marketing performance, and effective marketing tactics are crucial for startup viability. When taken as a whole, our results

Unequivocally support Ha1, Ha2, and Ha3, emphasizing the vital role that marketing and ecosystem support play.

6. DISCUSSION

Agri-startups in Maharashtra operate within an increasingly dynamic yet structurally complicated ecosystem that simultaneously offers large potential and major constraints, according to a clear pattern revealed by the synthesis of literature across the four research objectives. Despite the proliferation of advancements in digital agriculture, supply-chain management, precision technology, and market-linkage platforms, marketing remains a significant bottleneck that compromises sustainability and scalability.

Interactions Between Internal Capabilities and External Market Realities

According to the assessment, early-stage agri-startups frequently have excellent technical skills but lack the marketing know-how required to bring their inventions to market. According to the Resource-Based View, one important internal resource that is often lacking in agri-startups is marketing expertise. The development of customer insights, branding, the efficacy of the sales force, and the management of rural distribution all have a significant impact on whether or not innovations go past the pilot stage.

Commercialization is further complicated by external market realities, like farmer behaviours, risk perceptions, and adoption patterns, which are modified by Diffusion of Innovation Theory. Farmers limited purchasing power, reliance on reliable networks, and cautious attitudes about unproven technology present obstacles that can only be addressed by customized marketing tactics, powerful demonstrations, and regional communication. Thus, the interplay between internal weaknesses and external behavioural constraints amplifies marketing challenges.

Ecosystem Influence Through Institutional Support Systems

The literature unequivocally shows how important government-funded incubators, accelerators, and agri-innovation initiatives are to improving businesses' competencies and market integration. The existence of RKVY-RAFTAAR, NABARD, BIRAC, AIM, and university-level incubators has given agri-startups previously unheard-of access to capital, mentorship, validation platforms, and commercial networks, according to the entrepreneurial ecosystem perspective. However, the impact of these initiatives is diminished by ongoing ignorance and unequal access to them.

These results confirm Ha2 and Ha3, indicating that institutional assistance does exist but is underutilized because of administrative complexity, geographic differences, and communication gaps. Evidence suggests that professional and institutional support systems directly improve marketing results, since companies with significant institutional participation show higher market penetration, stronger branding, and increased farmer trust.

Strategic Pathways for Overcoming Marketing Challenges

The literature identifies several marketing strategies relevant for agri-startups:

- Farmer-centric product design supported by continuous feedback loops.
- Pricing innovations, including subscription models and pay-per-use frameworks.
- Trust-building through localized branding and strategic partnerships with FPOs, NGOs, and cooperatives.
- Digital marketing and community-building via WhatsApp, YouTube, and vernacular content.
- Decentralized distribution networks enabled by village-level entrepreneurs and micro-franchising.
- Partnership-based scaling, leveraging the networks of corporates, agribusiness firms, and institutional bodies.

These tactics strengthen the necessity for integrated, multi-level marketing strategies by complementing theoretical insights from frameworks for entrepreneurial ecosystems and market orientation.

Positioning the Present Study Within Existing Scholarship

Three significant gaps remain despite the literature's extensive insights into Agritech developments, ecosystem support, and technology adoption:

- Lack of region-specific analysis: There aren't many studies that examine marketing issues in Maharashtra's distinctive entrepreneurial and agricultural environment.
- Limited empirical evidence on how startup success is mediated by government knowledge.
- Scarcity of integrated frameworks integrating ecological factors, adoption behaviour, and marketing capability theory.

By putting out an integrated conceptual model that connects institutional support systems, farmer adoption behaviour, and internal capabilities, the current study fills in these gaps. This methodology lays the groundwork for empirical research that can provide policymakers, incubation managers, and agri-startup founders with useful insights.

7. CONCLUSION

Particularly in a forward-thinking and industrially vibrant state like Maharashtra, agri-startups are essential to the modernization of Indian agriculture. They improve market connections across input suppliers, production systems, and post-harvest procedures, introduce technological improvements, and fortify value chains. However, their long-term sustainability depends largely on their ability to navigate complex marketing environments characterized by behavioural, infrastructural, and institutional constraints.

The overwhelming body of research demonstrates that agri-startups encounter substantial marketing obstacles; as a result, H01 is rejected while Ha1 is supported. These issues include inadequate market research, low consumer awareness, poor branding, inconsistent pricing, shoddy distribution networks, and sluggish digital tool adoption. Furthermore, the presence of multiple government and incubation programs contradicts H02 and supports Ha2, although low awareness and limited accessibility create

persistent gaps. Finally, strong evidence linking institutional engagement and startup performance leads to rejection of H03 and supports Ha3.

This review's integrated conceptual framework emphasizes how three domains—internal marketing capabilities, external farmer adoption behaviours, and ecosystem-level institutional support—interact to influence startup success. For Agritech innovations to scale and have a significant impact on Maharashtra's agricultural economy, all three areas must be strengthened.

8. RESEARCH GAP &SCOPE FOR FUTURE RESEARCH

Although research on agritech innovation and startup ecosystems is expanding, little empirical study looks at the particular marketing difficulties that agri-startups encounter in the particular agricultural setting of Maharashtra. Additionally, research on how institutional support awareness affects startup performance is lacking. Therefore, more empirical research is required to measure these marketing limitations, evaluate the efficacy of support systems, and create focused strategies to enhance the growth and sustainability of agri-startups.

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Rebranding of Customer Trust & Adoption in Digital Pharmacies: Marketing Interfaces in Maharashtra's Healthcare Ecosystem

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Abstract: *Digital pharmacies have emerged as a critical component of contemporary healthcare delivery, particularly in emerging economies where access, affordability, and efficiency remain uneven. In India, the rapid growth of online pharmacies has been driven by expanding digital infrastructure, policy-led digital health initiatives, and changing consumer expectations. However, adoption remains uneven across regions, with trust and regulatory uncertainty acting as major constraints.*

Through this paper researcher aims to understand & reconceptualizes online pharmacy adoption in Maharashtra through a trust-centric lens, focusing on the interface between digital marketing practices and consumer acceptance. Drawing on a structured review of global, national, and state-level literature, the study integrates the Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), Diffusion of Innovation (DOI), and the 7Ps of services marketing to develop a synthesized conceptual framework.

The findings indicate that while price incentives and convenience initiate trial usage, sustained adoption depends on perceived legitimacy, prescription compliance, and data security. The paper contributes by offering a region-specific, theory-driven understanding of e-pharmacy adoption and outlines strategic implications for managers, policymakers, and researchers.

Keywords*: Digital Pharmacies; Consumer Trust; Healthcare Marketing; Technology Adoption; Maharashtra*

1. INTRODUCTION:

Digital Pharmacies as a Trust-Sensitive Healthcare Service

The digitalization of healthcare services has significantly altered the mechanisms through which patients access medical products and services online and offline. Among these developments, online pharmacies represent a structural shift in pharmaceutical distribution, enabling consumers to procure medicines through digital platforms supported by logistics and payment technologies along with patient ease and convenience.

While such platforms promise efficiency and accessibility, they simultaneously introduce risks related to medicine authenticity, data privacy, and ethical compliance. Consequently, consumer trust emerges as a defining determinant of adoption, particularly in healthcare contexts where perceived risk is inherently high and thus the patient trust dwindles while purchasing products online.

2. CONTEXTUALIZING E-PHARMACY GROWTH IN INDIA AND MAHARASHTRA

India's position as a global pharmaceutical manufacturing hub provides a strong foundation for the growth of digital medicine distribution. National initiatives such as Digital India and the Ayushman Bharat Digital Mission have accelerated consumer exposure to digital health services. Despite this momentum, the regulatory framework governing online pharmacies remains fragmented, creating ambiguity for both consumers and service providers.

Maharashtra offers a compelling regional context for examining these dynamics particularly for the online pharmacy ecosystem. Urban centres such as Mumbai and Pune exhibit high digital literacy and early adoption behaviour, whereas semi-urban and rural regions continue to rely heavily on traditional pharmacists. This regional asymmetry highlights the importance of localized trust-building and differentiated marketing strategies.

3. CONCEPTUAL FOUNDATIONS AND PRIOR EVIDENCE

Prior research on online pharmacies emphasizes affordability, convenience, and accessibility as key drivers of consumer adoption across urban and rural regions. However, studies consistently demonstrate that these factors are mediated by trust-related concerns, including authenticity of medicines, prescription verification, and secure handling of medicine & personal data. Global literature underscores the role of regulatory certification in building consumer confidence, while studies in emerging economies point to infrastructural and cultural barriers.

Within the Indian context, empirical evidence suggests that marketing tools such as mobile applications, email marketing, loyalty programs, and targeted promotions are effective in generating initial adoption through digital marketing and consumer interaction. Nevertheless, their long-term impact remains contingent on institutional credibility and ethical practices.

4. INTEGRATED THEORETICAL FRAMEWORK

This study adopts an integrated theoretical perspective to explain consumer adoption of online pharmacies. TAM explains adoption through perceived usefulness and ease of use, while UTAUT extends this understanding by incorporating social influence and facilitating conditions. DOI theory contextualizes adoption across different consumer segments, highlighting temporal and regional diffusion patterns. The 7Ps of services marketing provide a lens to examine how marketing practices shape consumer perceptions and adoption.

Synthesizing these perspectives, the framework positions trust as a central mediating construct linking marketing practices with adoption outcomes. Regional context acts as a moderating factor, influencing how consumers interpret digital signals of reliability and legitimacy.

5. METHODOLOGICAL APPROACH

The paper follows a structured literature review methodology inspired by PRISMA guidelines. Peer-reviewed journal articles, policy reports, and industry publications from 2000 to 2023 were sourced from databases including *Scopus, Web of Science, PubMed, and Google Scholar*.

Studies focusing on online pharmacies, digital healthcare marketing, consumer trust, and technology adoption were included. The literature was thematically analysed to identify dominant patterns and research gaps, with particular emphasis on regional insights relevant to Maharashtra.

6. KEY INSIGHTS AND DISCUSSION

The synthesis reveals three dominant insights. First, trust consistently mediates the relationship between marketing practices and adoption. Price discounts and convenience attract users, but sustained engagement depends on perceived legitimacy and ethical compliance.

Second, regional disparities are pronounced: urban consumers demonstrate higher adoption due to digital familiarity, while rural consumers exhibit scepticism rooted in infrastructural and informational constraints.

Third, regulatory ambiguity weakens consumer confidence, limiting the effectiveness of even sophisticated marketing strategies.

7. IMPLICATIONS FOR PRACTICE AND POLICY

For e-pharmacy operators, the findings underscore the need to move beyond price-led competition toward trust-centric value propositions. Transparent prescription verification, visible certification, and localized communication can enhance credibility. Policymakers must prioritize regulatory clarity and consumer protection mechanisms to ensure safe and equitable growth. For researchers, the study highlights the importance of region-specific and longitudinal investigations into digital healthcare adoption.

8. CONCLUSION

Online pharmacies in Maharashtra exemplify the dual nature of digital healthcare transformation offering efficiency and access while simultaneously raising concerns of trust and regulation.

This paper reframes e-pharmacy adoption as a trust-sensitive process shaped by marketing interfaces and regional context. By integrating established adoption theories with services marketing perspectives, the study provides a concise yet comprehensive foundation for future empirical research and policy development.

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Emerging Challenges in Human Resource Management: Trends, Issues, and Strategic Directions

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Abstract*: In today's rapidly evolving business environment, Human Resource Management (HRM) has emerged as a critical driver of organizational success. The traditional role of HRM, primarily focused on administrative and personnel functions, is undergoing a profound transformation due to globalization, technological advancements, demographic shifts, and changing workforce expectations. Organizations are increasingly recognizing that their human capital is not merely a resource but a strategic asset that can create competitive advantage. Emerging trends such as digitalization, artificial intelligence, remote work, and data-driven decision-making are reshaping the HR landscape. Simultaneously, HR professionals face complex challenges including talent acquisition and retention in a competitive labor market, managing diversity and inclusion, fostering employee engagement, and ensuring compliance with dynamic labor regulations. These challenges are further intensified by socio-economic factors, such as workforce mobility, generational differences, and the need for sustainable organizational practices. Addressing these challenges requires a strategic approach, where HRM moves beyond traditional operational roles to align closely with organizational goals, foster innovation, and support agile decision-making. This paper explores the emerging challenges in HRM, highlights current trends affecting workforce management, identifies critical issues faced by HR practitioners, and suggests strategic directions for organizations to adapt and thrive in a dynamic environment. By understanding these dimensions, organizations can develop proactive HR strategies that not only respond to current pressures but also anticipate future workforce needs.*

Keywords*: Core HRM Keywords, Emerging Trends, Challenges & Issues, Strategic Directions.*

1. INTRODUCTION

Human Resource Management (HRM) is undergoing rapid transformation in the face of technological innovation, globalization, workforce diversity, and evolving employment dynamics. This paper examines the emerging challenges confronting HR professionals and explores the latest trends shaping the future of work. These challenges include digital disruption and the integration of artificial intelligence in HR processes, talent acquisition and retention amidst competitive labor markets, managing remote and hybrid workforces, and fostering inclusive organizational cultures. Additionally, the study highlights critical issues such as skills gaps, ethical concerns in people analytics, and the increasing importance of employee well-being and mental health. Through a comprehensive review of recent literature and industry practices, strategic directions are proposed to enable HR practitioners to adapt effectively. These include leveraging advanced HR technologies, implementing agile workforce planning, enhancing continuous learning and development, and aligning HR strategies with organizational goals to build resilience and sustainable performance. This paper contributes to a deeper understanding of the dynamic HRM landscape and offers practical insights for scholars and practitioners seeking to navigate current and future HR challenges.

2. LITERATURE REVIEW

Human Resource Management (HRM) has undergone significant transformation over the past two decades due to globalization, technological advancement, demographic shifts, and changing employee expectations. Scholars widely agree that HRM is no longer a support function but a strategic partner contributing directly to organizational sustainability and competitive advantage (Ulrich, 1997).

Technological Disruption and Digital HRM

The integration of digital technologies such as Artificial Intelligence (AI), Human Resource Information Systems (HRIS), data analytics, and automation has emerged as a major challenge for HR professionals. Studies by Marler and Parry (2016) highlight how e-HRM improves efficiency but also raise concerns regarding data privacy, algorithmic bias, and workforce displacement. Researchers emphasize the need for reskilling HR professionals to manage digital tools effectively while maintaining the human aspect of HRM.

Changing Workforce Demographics

The modern workforce is increasingly diverse in terms of age, gender, culture, and work values. According to Brewster et al. (2018), managing multigenerational employees and cross-cultural teams has become a critical HR challenge. Millennials and Generation Z employees prioritize flexibility, meaningful work, and work-life balance, forcing organizations to redesign HR policies and engagement strategies.

Talent Management and Skill Gaps

Several studies identify talent acquisition and retention as persistent HR challenges. Cappelli (2008) notes that rap id technological change has widened the skill gap, particularly in knowledge-intensive industries. Strategic workforce planning, continuous learning, and competency-based HR practices are increasingly recommended to address these challenges.

Employee Well-Being and Work-Life Balance

Recent literature emphasizes employee well-being as a strategic HR concern. The rise of remote and hybrid work models has blurred boundaries between work and personal life. Guest (2017) argues that HRM practices must focus on psychological well-being, mental health, and flexible work arrangements to sustain long-term employee performance.

Ethical and Legal Challenges

Ethical issues such as discrimination, fairness in AI-based decision-making, and compliance with labor laws have gained attention in HR literature. Greenwood (2013) highlights that ethical HRM is essential for building trust and organizational legitimacy. Researchers advocate for transparent HR policies and ethical governance frameworks.

3. RESEARCH METHODOLOGY

The present study adopts a descriptive and exploratory research design to examine emerging challenges in Human Resource Management (HRM) and to analyze recent trends, critical issues, and strategic responses adopted by organizations.

3.1 Research Design

The design is appropriate as the study aims to explore evolving HR phenomena influenced by globalization, digitalization, workforce diversity, and changing employment relationships.

3.2 Nature of the Study

The research is qualitative and analytical in nature, supported by selective quantitative insights where required. It focuses on understanding patterns, interpretations, and strategic implications rather than testing a single causal relationship.

3.3 Sources of Data

The study is primarily based on secondary data, collected from reliable and scholarly sources, including:

- Peer-reviewed journals related to HRM, organizational behavior, and management
- Books and edited volumes on contemporary HR practices
- Research reports from international organizations (ILO, SHRM, World Economic Forum, McKinsey, Deloitte, etc.)
- Government publications and policy documents
- Reputed online databases such as Scopus, Web of Science, Google Scholar, and SSRN

Where necessary, recent industry surveys and HR analytics reports have been used to support arguments and trends.

3.4 Sampling Technique

A purposive sampling method was used to select relevant literature and reports published primarily within the last 10–12 years, ensuring contemporary relevance. Studies focusing on emerging economies, digital HR transformation, and strategic HRM were given special emphasis.

3.5 Tools and Techniques of Analysis

The collected data were analyzed using:

- Thematic analysis to identify recurring HR challenges such as talent shortages, employee well-being, AI adoption, remote work, and skill gaps
- Content analysis to compare trends and strategic HR responses across sectors
- Comparative analysis to highlight differences between traditional HR practices and emerging strategic HR approaches.Conceptual frameworks and models from existing literature were used to synthesize findings.

3.6 Scope of the Study

The scope of the study includes:

- Emerging HRM challenges at organizational and strategic levels
- HR trends influenced by technology, globalization, and changing workforce expectations
- Strategic HR interventions and future directions

The study is not confined to a single industry but draws insights from manufacturing, services, IT, and knowledge-based sectors.

3.7 Limitations of the Study

- The study relies primarily on secondary data, which may limit real-time organizational insights
- Rapid technological changes may cause some trends to evolve beyond the study period
- Lack of primary empirical validation may restrict generalizability
- Despite these limitations, the study provides a strong conceptual and strategic understanding of emerging HRM challenges.

3.8 Ethical Considerations

All sources used in the study have been properly cited to avoid plagiarism. The research strictly adheres to academic integrity and ethical research standards.

4. EMERGING CHALLENGES IN HUMAN RESOURCE MANAGEMENT: TRENDS:

Emerging HRM challenges focus on navigating AI integration, managing hybrid work models, and fostering employee well- being amid rapid technological shifts and skill gaps. Key trends for 2026 include using AI in talent acquisition, upskilling for a changing workforce, prioritizing employee experience, and ensuring data-driven, compliant HR strategies.

4.1 Key Emerging Challenges in HRM

- Technology & AI Integration: HR is tasked with adopting AI tools while mitigating bias, automating tasks, and managing data privacy issues.
- Hybrid & Remote Work Management: Establishing fair, productive, and cohesive work cultures across remote, in-office, and hybrid employees is a critical, on-going challenge.
- Talent Acquisition & Retention: Finding, on boarding, and retaining skilled, specialized talent in a highly competitive global market.
- Upskilling & Reskilling: Addressing the growing skill gap by continuously training employees to adapt to technological advancements.
- Employee Well-being & Mental Health: Prioritizing holistic employee health to boost productivity, job satisfaction, and reduce burnout.
- Diversity, Equity, and Inclusion (DEI): Moving beyond compliance to integrate DEI into core business strategies, including managing multicultural, diverse teams.
- Strategic HR & Data-Driven Decision-Making: Transforming HR into a strategic partner by using people analytics for better decision-making.

- Change Management: Navigating constant organizational, technological, and structural changes to keep employees aligned.
- Key Trends Shaping HR
- AI-Powered HR Operations: Automation of recruitment, onboarding, and performance management.
- Focus on Employee Experience (EX): Tailoring the work environment to improve employee engagement and retention.
- Growth of the Gig Economy: Managing a "liquid workforce" comprising freelancers, consultants, and contractors.
- Prioritizing Mental Health & Wellness: Investing in wellness programs to improve retention and productivity.
- Skills-Based Hiring: Moving away from strict degree requirements to focus on specific, in-demand skills.

Figure 1: Challenges of HRM

5. EMERGING AND UPCOMING ISSUES IN HRM:

5.1 Digital Transformation & HR Technology

Overview: HRM is being reshaped by Artificial Intelligence (AI), Machine Learning (ML), analytics, automation, and cloud-based HR Information Systems (HRIS).

Issues:

- Algorithmic bias in recruitment and performance evaluation.
- Privacy concerns related to employee data analytics.
- Skill gaps in HR professionals for adopting and managing HR tech.

Possible Solutions:

- Ethical AI frameworks.
- Continuous digital skills training for HR teams

5.2 Hybrid & Remote Work Models

Overview: COVID-19 accelerated the shift toward hybrid and remote work. This trend persists and requires new HR policies.

Issues:

- Maintaining employee engagement and culture remotely.
- Ensuring fair performance evaluation across remote and office workers.
- Addressing work-life balance challenges.

Possible Solutions:

- Developing remote-friendly performance metrics.
- Investment in virtual engagement tools.

5.3 Employee Wellbeing & Mental Health

Overview: Organizations recognize wellbeing as a critical driver of productivity.

Issues:

- Rising stress, burnout, and mental health concerns.
- Need for holistic wellbeing programs beyond physical health.

Possible Solutions:

- Integrated wellness policies including counseling services.
- Training managers to recognize and support mental health needs.

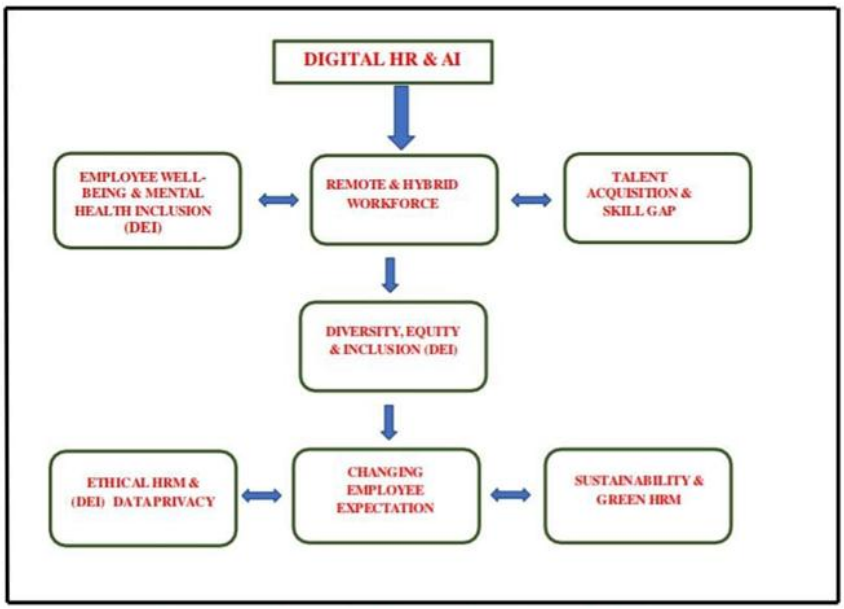

Figure2: Emerging & Upcoming Issues in HRM

5.4 Workforce Diversity, Equity, and Inclusion (DEI)

Overview: Diverse workplaces enhance innovation and resilience. However, DEI implementation remains complex.

Issues:

- Tokenism without measurable impact.
- Lack of inclusive leadership training.
- Systemic bias in career progression.

Possible Solutions:

- Clear DEI metrics and accountability systems.
- Targeted development programs for underrepresented groups.

5.5 Talent Shortages & Skills Gap

Overview: Rapid technological changes create demand for new skills.

Issues:

- Difficulty attracting high-skilled talent.
- Gaps between academic learning and industry needs.
- Retention in competitive markets.

Possible Solutions:

- Strategic partnerships with educational institutions.
- Internal up skilling and reskilling programs.

5.6 Ethical HRM and Data Privacy

Overview: HR handles sensitive employee data, making ethical management essential.

Issues:

- Misuse of analytics in decision making.
- Lack of transparency in data usage
- Compliance with data privacy laws (e.g., GDPR, national regulations).

Possible Solutions:

- Clear data governance policies.
- Transparency in analytics and automated decisions.

6. STRATEGIC AND DIRECTIONS IN HUMAN RESOURCE MANAGEMENT

Strategic Human Resource Management refers to the alignment of HR policies, practices, and systems with the long- term strategic objectives of an organization. Modern organizations face rapid technological change, globalization, workforce diversity, and sustainability pressures. Consequently, HRM has evolved from an administrative function to a strategic partner contributing directly to organizational performance and competitive advantage.

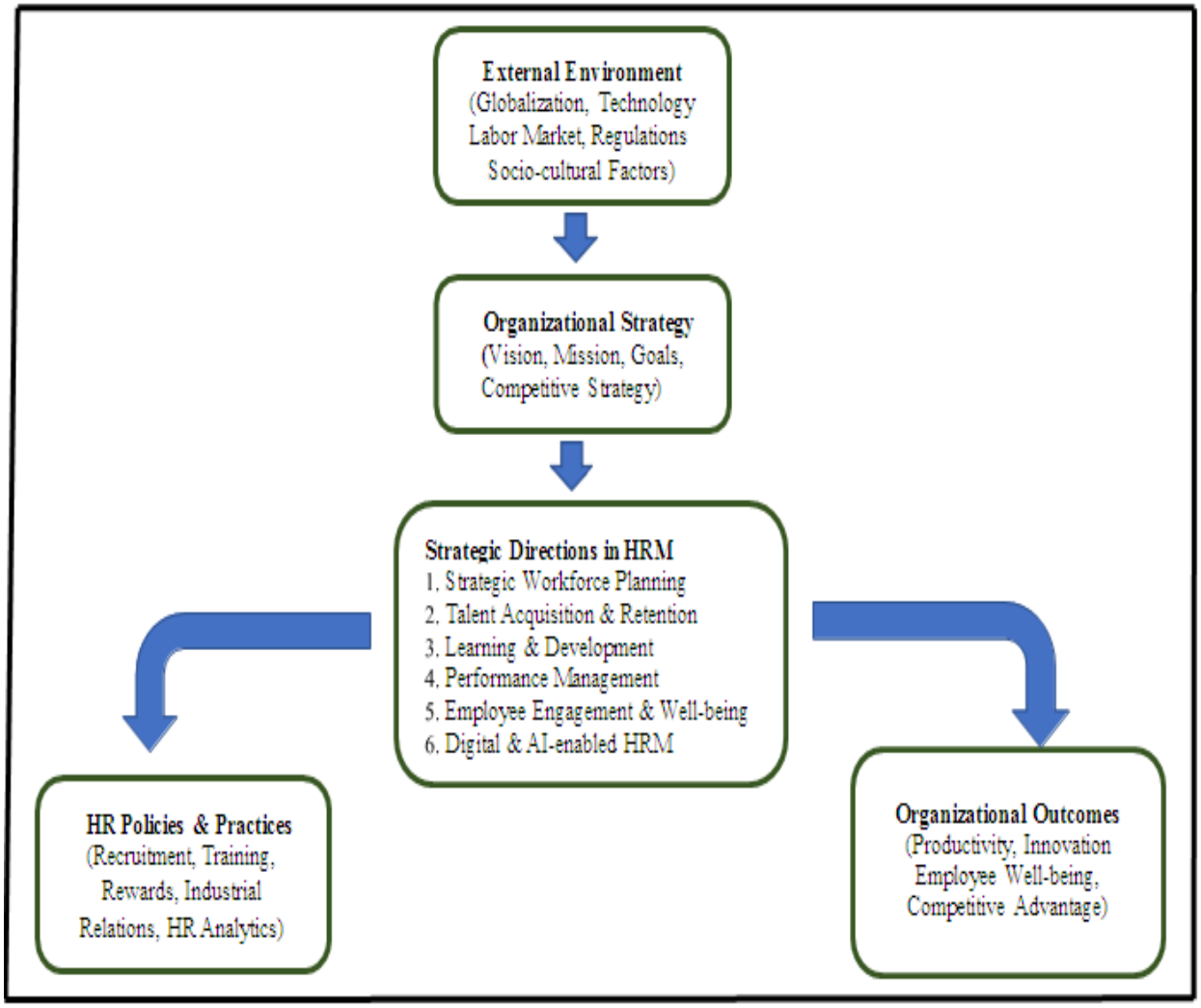

Figure 3: Strategic Directions in Human Resource Management

Strategic Direction in Human Resource Management (HRM) refers to the proactive process of setting long-term goals for the HR function that are directly aligned with the overall business strategy. It moves HR from a reactive, administrative role to a strategic partner that develops capabilities (skills, culture, structure) required to achieve competitive advantage. For a research paper, this can be modeled as a continuous, cyclical, and interactive process between organizational goals and human capital capabilities

Components of Strategic Direction in Human Resource Management:

6.1.1 Contextual Factors: The Driver

- Organizational Mission & Business Strategy: The starting point. HR must understand the company's long-term vision to determine what talent is needed.
- External Environment: Technology, labor market shifts, and legal regulations influence HR strategy.

6.1.2 Strategic HRM Cycle (The Core)

- HR SWOT Analysis: HR analyzes its current capacity (skills, headcount) against future needs to identify gaps.
- Set HR Strategic Goals: Defining specific, measurable objectives that align with business goals (e.g., "increase employee engagement by 15% to support innovation strategy").
- Formulate HR Strategies: Developing specific, bundled practices (e.g., recruitment, training, compensation) to achieve the set goals.
- Implement HR Plan: Executing strategies like Talent Management, Succession Planning, and Change Management.
- Evaluation & Metrics: Using HR analytics and KPIs to measure the effectiveness of the strategy and make corrections.

6.1.3. Outcomes: The Value Creation

- Enhanced Performance: A well-aligned workforce leads to higher productivity and better business results.
- Competitive Advantage: Developing a unique, high-performing culture that competitors cannot easily replicate.

6.2. Key Theoretical Approaches (For Research Paper):-

For academic research, strategic direction is often analyzed through these frameworks:

- Best Fit (Contingency) Approach: Argues that HR strategies must be aligned with the specific business strategy and context (e.g., cost-leadership vs. differentiation).
- Resource-Based View (RBV): Focuses on leveraging the knowledge, skills, and abilities of employees as a source of competitive advantage.
- Configurational Approach: Proposes that bundling HR practices together creates a synergistic effect (horizontal fit).

6.3. Key Functions of Strategic HRM:

- Workforce Planning: Forecasting future HR needs based on business growth.
- Talent Management: Attracting and retaining key talent to fill critical roles.
- Organizational Culture: Fostering a culture that encourages innovation and agility.
- HR Technology: Using AI/Data-driven decisions to enhance efficiency.

7. CONCLUSION

The study of emerging challenges in Human Resource Management reveals that HRM is at a critical crossroads, shaped by rapid technological change, evolving workforce expectations, and increasing strategic complexity. Traditional HR practices are no longer sufficient to address contemporary organizational demands. Instead, HR professionals must adopt proactive, technology-enabled, and people-centric approaches.

The literature clearly indicates that challenges such as digital transformation, talent shortages, workforce diversity, employee well-being, and ethical governance are interconnected and require integrated strategic responses. Strategic HRM, continuous learning, data-driven decision-making, and ethical leadership emerge as key directions for the future.In conclusion, organizations that successfully align HR strategies with business objectives while prioritizing employee well-being and ethical practices will be better positioned to achieve sustainable growth. Future research may focus on empirical validation of emerging HR strategies, sector-specific challenges, and the long-term impact of AI and remote work on HRM effectiveness.

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AI Applications to Protect, Maintain and Enhance Holistic Health in Rural India: A Conceptual Exploration

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Abstract: *The WHO definition of health highlights that being healthy is "not only being free from disease but it is the complete wellbeing of person". Thus, It includes physical, psychological, social, intellectual; cultural and moral wellbeing. The present day organizations -be it a corporate company, educational institute, Bank or a charity organization –have all become places of tremendous work pressure and a highly competitive environment leading to mental stress for the stakeholders concerned.. Likewise, the basic unit of any society i.e., a family has also become vulnerable to stressful situations; all of them ultimately leading to health issues such as psychosomatic conditions, lifestyle diseases, behavioral disorders across different age goups.*

The present Research Paper attempts to conceptualize a role model for organizations to make them more humane and healthy in line with the WHO definition of Healthy beings. The Research Paper also tries to figure out the means needed by individuals and society at large to focus on achieving real health as a material objective.

In the context of the emerging technologies viz., machine learning and Artificial Intelligence driving virtually all walks of the society; the authors inquire if the same can be integrated in to the HR information system of organizations so that at any given point of time it would be easy for decision makers/ policy makers to judge a person on the parameters of health and decide upon the relevant corrective / preventive measures to avoid imminent problems in the organizations. As a matter of fact, the knowledge of Universal human values is also important at this level to increase Gross Organizational Happiness Index (GOHI), subsequently leading to higher Gross National Happiness index (GNHI).

Key words:

Health; complete wellbeing; AI; universal human values(UHV), Gross National Happiness index GNHI.

1. INTRODUCTION

Human being has a natural aspiration to pursue material success in our life; viz., physical assets, social status, networking, etc., leading to happiness and prosperity in conventional sense continuously. Every individual devotes his/her whole life for this purpose; right from education to career; family and extended to society; nature and the world at large.

However, the moot point is “whether a given individual is really in a position to achieve happiness and prosperity? if an individual introspects critically; as an observer from outside’ there perhaps would be more clarity on one’s prospects happiness. Generally, majority of the people throughout the most part of their lifetime strive for survival & growth; enduring the physical environment; amassing the material comforts, achieving economic prosperity and so on; In these pursuits, stress and the resultant issues start adversely affecting the ordinary human life. It is evident from facts and figures which are given in this paper. This paper attempts to focus on employees of industry and critically assess problems of industrial employees for their health related issues confronting the ordinary human life and the consequences on Human Development; thus, articulating tradeoffs of happiness vs. quality of life as two basic & contrasting human aspirations.

2. CONCEPTUAL FOUNDATIONS

General human tendency is to associate material comforts and prosperity with happiness and making life a relentless pursuit of material goals; one after the other. Since, these endless pursuits never culminate to the perpetual happiness; one’s life loses harmony with self, fellow human beings, as well as the surrounding. The absence of harmony corresponds to conflicts with the self, fellow human beings, and the surrounding. On the other hand, when there is understanding one’s body is a just a means to achieve life goals which are more than the sum total of material goals but beyond them. To achieve the life goals (which lead to happiness) responsibility in the self to use the body in the right way Harmony in the family is there when there is understanding; clear understanding of his or her role and responsibility towards other member. Harmony in the society and nature means he or she has clear understanding that there should be equal right of every family and every unit of the nature to survive and grow and role of self is behave with responsibility to protect rights of all and all without exception (Ref:'1. Universal Human Values book and manual)

Now in any industrial setting with special reference to human resource management one concept is very very clear and it should be understood and use by all decision makers and policy makers Basic goal of any industry is to serve society by using all resources including human resources Human population and resource is different. Resource indicates something which can be drawn on. Like other resources money material machines methods which are in a control of management when they are entered in the organization in its super-finished form.

However it is not easy for organization to get a human being of " Bones and fleshes to act in a desired manner and listen; until human being is converted to resource and capital Management is interested and aspire for behavior of the employee in a desired manner .However behaviour is dependent on inner mind and it is required to be directed.(Ref .2)(Ref 3. OB book) .Inner mind is full of personality traits attitude; perception ; learning. How to track it and update about each one is a problem. Human behaviour can be directed only when the mind inner mind is understood completely. however it is not easy when any employees selected in the company. His or her resume resume ; his or her interview outcome and psychological test reports and their opinion are considered. There are limits for it and continuously it is not possible to keep track of the person and his or her life the question is; why it is required to know? where is importance of one interesting and useful subject of management that is Organizational Behavior; in this subject there are seven basic concepts out of which two are very important, viz., "human dignity" and "whole man concept.Whole Man conceptWe

concentrate on this. Employee when enter organization for a day to day work he or she does not enter with skills only but enter with his whole life as a person as a human being; his or her family problems; society problems, social problems, health problems, psychological problems, worries and the resultant stress. Big question how one can understand it and that also continuously? Now when there is no outlet for these feelings or when there is no forum to express it to the right person in the organization or right platform then it gets accumulated in the mind and there are possibilities of effect on work environment and his or her health. In some companies there is practice to give outlet for feelings tensions worried in a systematic way and there is at least five 10 minutes devoted for this daily. However every person and every company is not going in for that so the problem is that when the person as a whole enters in the company and he or she does not get outlet for feelings an hidden issues it affect work environment. It affects health of the person; means it is Vicious circle if there is psychological problem in turn it affects his or her social environment in the company or he or she may get trapped in any accident or burn out situation in company. Now when there is problem in the organization that problem is taken by employee and it affects its health and his family life and social life outside.

3. RESEARCH OBJECTIVES

1. To understand some basic concepts related to health ; happiness and development and Human development.
2. To find out facts related to development of HR.
3. To track and detect real problems.
4. To understand AI tools which are in use.

Since it is a conceptual paper based on the philosophical insights of the author, the same has used extensively the secondary data viz., books ; websites and reports to support his claims in this paper.

4. THEORETICAL UNDERPINNINGS

1. The World health organisation (WHO) Definition: "Health means not just being free from diseases. It is a complete state of wellbeing of a person; his/her physical, psychological and social well-being". In 21st century; fastest changing society health is now a challenging issue; as per definition .it is complicated. Happiness and continuity of it is already discussed. Development is all inclusive and sustainable means it is not just production and resource mobilisation but here it is expected that all and all should be included. Human development index and Gross National happiness index and some global reports about India are to be taken seriously and here is a need to tackle it methodically.

2. Let's see some facts 2025 development report is self-explanatory:

Nation	**Rank**	**Points**
Iceland	1	0.972
Norway	2	0.970
Switzerland	3	0.970
India	130	0.685

Likewise, China is on 78th Sri Lanka is ranked 89th ; Bhutan on 125th position. Thus, India is on a far lower side just improved from 133 rank (2022) to present. Why India is on lower side? let's consider two key reasons. Gender disparity is still there. After inclusion of education in article 21 of the Indian

Constitution (as a part of fundamental right to live life with dignity) and also a natural outcome of it is enactment of law. Right to Education Act (2019) education opportunities are given to all without exception but still "Miles to go" to ensure quality of education and achieving learning outcome. (Ref . 4 Human development Report 2025) We are on the bottom of the Gross National happiness index. In 2025; Finland rank 1India is on 133. Here are comparative facts Finland small population and is built in homogeneous culture but India as a populated with diverse culture. Our Low GDP per capita More facts and figures National Mental Health survey by NIMH about 150 million people need mental health solutions but only out of these 10to 15%receive it. After COVID epidemic it's need is increased In UNICEF State of Worlds Children report 2025 "One in every seven adolescents age (10 to 19) living with mental health problems *Vikasit Bharat 2047 shown by Blue craft foundation call for solution and urgent action for human problems; social isolation Problem;how to understand and identify uniqueness of employee in right spirit ? Root cause analysis of problem Organisation particularly business profit organisation is created to earn profit .however there is a need to keep balance between affiliation motivation and achievement motivation as given in management .but sometimes there is no balance in this motivation levels. so instead of creating organisation as industrial society it it exist just as an instrument of profit and have name fame and reputation The other reason is also very prominent; as given in the earlier part of this paper when employees enter in the organisation they are not open to share express there problems tensions personal problems of course with a clear cut marked line of keeping privacy and protect right to privacy as a right of every person.

CASE STUDIES ON AI APPLICATIONS TO PROMOTE HOLISTIC HEALTH:

Case Study 1: AI-Based Early Disease Detection through Community Health Workers

A pilot initiative in rural Maharashtra utilized an AI-enabled mobile health platform to assist community health workers in early disease detection. Accredited Social Health Activists (ASHAs) were provided with smartphone applications integrated with artificial intelligence algorithms capable of analyzing patient symptoms, basic vitals, and medical history. The system provided real-time diagnostic suggestions and triage recommendations for diseases such as anemia, tuberculosis, and maternal health complications.

The AI system analyzed large datasets of rural health patterns and generated risk alerts for high-priority cases. Community health workers could upload patient information, after which the AI model recommended whether the patient required home care, teleconsultation, or referral to a primary health centre.

As a result, early identification of high-risk pregnancies and infectious diseases improved significantly. The program reduced diagnostic delays and increased community awareness regarding preventive healthcare. Importantly, the AI platform also generated localized health education messages in regional languages, encouraging better nutrition, sanitation practices, and lifestyle modifications.

This case demonstrates how AI can strengthen rural healthcare delivery by empowering frontline workers, improving early diagnosis, and supporting preventive and holistic health management in underserved communities.

Case Study 2: Ai-Enabled Telemedicine for Holistic Rural Healthcare

A rural healthcare network in Karnataka implemented an AI-supported telemedicine system to improve access to specialized healthcare services in remote villages. The initiative integrated artificial intelligence with Tele-consultation platforms connecting village health centers with urban hospitals.

Patients visiting rural clinics underwent basic diagnostic screening through AI-enabled tools such as digital stethoscopes, retinal scanners, and automated vital monitoring devices. The AI system analyzed the data and generated preliminary health reports before the teleconsultation session. Doctors at referral hospitals reviewed these reports to provide more accurate and faster diagnoses.

The platform was particularly effective in managing chronic diseases such as diabetes, hypertension, and cardiovascular conditions, which are increasingly prevalent in rural populations. AI-based predictive analytics also helped identify individuals at risk of developing lifestyle diseases, enabling early intervention through diet counseling, physical activity recommendations, and mental health support.

Beyond treatment, the system promoted holistic health by integrating preventive care, mental health screening, and community wellness programs. The initiative significantly reduced travel costs for patients, improved access to specialists, and strengthened continuity of care.

This case illustrates the transformative potential of AI-driven telemedicine in bridging rural healthcare gaps while promoting comprehensive, patient-centered and preventive health management.

5. RECOMMENDATIONS:

- Government and healthcare organizations should integrate AI-based diagnostic and decision-support systems in Primary Health Centres (PHCs) to assist rural healthcare workers in early detection and treatment of diseases.
- Reliable internet connectivity, digital devices, and cloud-based health platforms must be developed to ensure smooth implementation of AI-driven healthcare services in rural regions.
- AI-integrated telemedicine platforms should be expanded to connect rural patients with urban specialists, enabling timely consultations and reducing healthcare accessibility gaps.
- Training programs should be conducted for ASHA workers, nurses, and rural health practitioners to effectively use AI tools for diagnostics, patient monitoring, and preventive care.
- AI solutions should incorporate data related to nutrition, lifestyle, mental health, and traditional Indian healthcare practices such as Ayurveda and Yoga to promote holistic health outcomes.
- AI-based predictive analytics should be utilized to monitor disease patterns, predict outbreaks, and support public health planning in rural communities.
- Policymakers must establish regulatory frameworks to protect patient data, ensure ethical use of AI algorithms, and maintain transparency in healthcare decision-making.
- Collaboration between government agencies, technology companies, healthcare institutions, and NGOs should be promoted to accelerate the development and deployment of AI healthcare solutions.
- Awareness campaigns and digital literacy programs should be organized to help rural populations understand and trust AI-based healthcare technologies.

- Universities and research institutions should be encouraged to undertake interdisciplinary research on AI applications for rural healthcare, focusing on affordable, scalable, and culturally appropriate solutions.

6. CONCLUSION

The integration of Artificial Intelligence (AI) in rural healthcare has significant potential to protect, maintain, and enhance holistic health in rural India. By enabling early disease detection, predictive analytics, remote diagnostics, and personalized health interventions, AI can bridge critical gaps in accessibility, affordability, and quality of healthcare services in underserved regions. AI-enabled tools such as telemedicine platforms, mobile health applications, and decision-support systems can empower frontline health workers and improve preventive as well as curative care. Furthermore, the convergence of AI with traditional community health practices and digital health initiatives can promote a comprehensive approach to physical, mental, and social well-being. However, successful implementation requires strengthening digital infrastructure, ensuring data privacy, enhancing digital literacy, and developing context-specific AI solutions tailored to rural realities. A collaborative effort involving government, healthcare institutions, technology developers, and local communities is essential to ensure that AI-driven innovations contribute to sustainable and inclusive rural health systems in India.

So in this paper it is tried to explore the possibility to to use AI in such area which is related to human world it is an attempt to make an organisation real human organisation with the help of latest technology. Now here attempt was made to ensure such a situation where there is real inner happiness intrinsic satisfaction and continuity of happiness and prosperity in the youth. today's situation as given in the statistics that is 90% of corporate employees below age 25 experience sign of anxiety and problems the stress about the mental health problem Will be completely stopped about development ranking as per index and our India's ranking in gross national happiness index will be increased For it what is required is to have clear vision of any organisation where there is continuity of happiness and prosperity where there is real health as given by who there is real development and accordingly all actions in all womens and fraction of second in the company organisation will be in direction of achieving that reason and by taking bottom up approach when all organisations all work in one direction to make India as viksit Bharat by 2047 then all will work in this direction where there is a perfect balance between easeness of life happiness in the life and prosperity in the long run.

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A Study on the Role of Artificial Intelligence (AI) in Apprentice Deployment with Reference to the Automobile Industry

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Abstract: *The rapid transformation of Industry 4.0 has increased the demand for skilled manpower and efficient workforce planning in manufacturing sectors, particularly in large automobile clusters. Traditional apprenticeship allocation systems often face challenges such as manual intervention, delayed decision-making, and mismatch between trainee skills and industry requirements. This study explores the potential of Artificial Intelligence (AI)–based algorithms to optimize apprenticeship allocation and enhance workforce planning in the automobile manufacturing ecosystem.*

The research examines how AI-driven systems can analyze large datasets related to apprentice profiles, industry requirements, and skill demands to create a more efficient and transparent allocation process. Machine learning models enable predictive analysis that helps organizations anticipate future workforce needs while minimizing mismatches between apprentices and industry roles. By reducing manual processes, AI systems can streamline decision-making and improve the overall effectiveness of apprenticeship programs.

The study adopts a conceptual and analytical approach to examine the role of AI in improving allocation mechanisms and strengthening industry–academia collaboration. It highlights the ability of AI tools to support data-driven workforce strategies, enhance operational efficiency, and ensure better utilization of training resources. The integration of predictive analytics further assists policymakers and industry leaders in developing sustainable skill development frameworks.

The findings suggest that AI-enabled apprenticeship allocation systems can significantly improve efficiency, transparency, and scalability in workforce planning. By aligning training programs with real-time industry requirements, AI-driven models can contribute to building a future-ready workforce and strengthening the competitiveness of automobile manufacturing clusters.

Keywords: *Apprenticeship, Artificial Intelligence, Automobile Industry, Skill Development, Workforce Analytics*

1. INTRODUCTION

Apprenticeship programs enable industries to build a skilled workforce. In the automobile sector, traditional apprenticeship deployment faces challenges such as mismatched placements, slower

recruitment cycles, and limited monitoring. Artificial Intelligence (AI) offers solutions through automation, predictive analytics, and personalized training support. This research paper examines AI's role in apprentice deployment, combining qualitative interviews and quantitative data analysis of NAPS records. The study finds AI enhances recruitment accuracy, skill matching, training efficiency, and retention outcomes, contributing to a sustainable workforce model.

The rapid advancement of digital technologies has significantly transformed industrial operations, workforce management, and skill development processes across sectors. Among these technologies, Artificial Intelligence (AI) has emerged as a powerful tool for improving efficiency, decision-making, and resource optimization in organizations. In the automobile industry, which is characterized by high levels of technological innovation and skilled workforce requirements, the effective deployment of apprentices plays a critical role in building future-ready human capital. Apprenticeship programs help bridge the gap between theoretical knowledge and practical industrial skills by providing structured on-the-job training to young professionals.

However, traditional methods of apprentice deployment often face challenges such as mismatches between apprentice skills and job requirements, inefficient allocation of trainees, limited data-driven decision-making, and lack of real-time monitoring of training progress. These challenges can reduce the effectiveness of apprenticeship programs and limit their contribution to workforce productivity. Artificial Intelligence offers innovative solutions to address these issues through intelligent data analysis, predictive modeling, automated matching of apprentices to suitable roles, and continuous performance monitoring.

This study aims to explore the role of AI in enhancing apprentice deployment in the automobile industry, focusing on how AI-driven systems can improve allocation efficiency, skill alignment, training outcomes, and overall organizational productivity.

2. RESEARCH OBJECTIVES

i. To study how AI supports apprentice recruitment and deployment.
ii. To analyze AI-based skill-matching models in the automobile industry.
iii. To evaluate AI tools for monitoring and retention.
iv. To examine AI integration within NAPS for sustainable workforce development.

3. LITERATURE REVIEW

Advanced literature highlights the adoption of AI-driven HR systems, machine learning–enabled skill mapping, and digital apprenticeship ecosystems in countries such as Germany, Japan, and South Korea. Recent research also emphasizes AI-enabled workforce analytics, smart factories, and Industry 4.0 integration.

The growing integration of Artificial Intelligence (AI) in workforce management has significantly influenced recruitment, training, and deployment processes across industries. In the automobile sector, where technological advancement and operational efficiency are critical, AI-driven systems are increasingly being explored to streamline apprentice allocation and skill development. Several studies highlight that AI can enhance decision-making by analyzing large datasets related to candidate skills, performance metrics, and industry requirements.

Research on AI-based human resource management indicates that intelligent algorithms can match candidates with suitable roles more effectively than traditional manual methods. According to studies on AI-enabled talent management, machine learning tools help organizations identify skill gaps, predict employee performance, and optimize workforce planning. In the context of apprenticeships, AI systems can evaluate educational background, technical competencies, and behavioral attributes to recommend suitable placements in specific departments or production units.

Scholars examining digital transformation in the automobile industry emphasize the importance of integrating AI with training and apprenticeship programs. The adoption of AI-driven platforms can facilitate better coordination between training institutions and industrial employers. These systems can monitor apprentice progress, recommend personalized learning pathways, and provide data-driven insights for improving training outcomes.

Furthermore, research on Industry 4.0 highlights the need for smart workforce development models that align with evolving technological demands. AI-based deployment systems can support industries in identifying the right talent at the right time, reducing mismatches between apprentice skills and job requirements. Despite these advantages, some studies also point out challenges such as data privacy concerns, algorithmic bias, and the need for adequate digital infrastructure.

Overall, the literature suggests that AI has strong potential to enhance the efficiency and effectiveness of apprentice deployment in the automobile industry by enabling data-driven decision-making and improving alignment between skills and industrial requirements.

4. RESEARCH METHODOLOGY

The extended methodology includes structured sampling, cross-validation techniques, reliability testing, and model evaluation metrics. It incorporates both descriptive and inferential statistics, enhancing the accuracy and robustness of the findings.

This study uses mixed methods: qualitative interviews with HR managers, supervisors, apprentices, and policymakers; and quantitative analysis of NAPS deployment data. Statistical tools include percentage analysis, correlation between AI use and deployment efficiency, and trend analysis. Interview transcripts were coded using thematic analysis.

This section presents the analysis of hypothetical data collected from automobile manufacturing units and apprentices in Chhatrapati Sambhajinagar (formerly Aurangabad), Maharashtra, a major automobile hub with industries such as OEM manufacturers and ancillary units. The study examines how Artificial Intelligence (AI) can support the efficient deployment, monitoring, and skill matching of apprentices in the automobile industry.

5.1 Demographic Profile of Respondents

A total of **120 respondents** were considered for the study, including HR managers, training officers, and apprentices from selected automobile manufacturing and component industries in the region.

Table 1: Respondents' Demographic Profile

Category	Number of Respondents	Percentage
Apprentices	80	66.7%
HR / Training Managers	25	20.8%
Production Supervisors	15	12.5%
Total	**120**	**100%**

Source: Primary Data

The data indicates that the majority of respondents were apprentices, enabling the study to capture first-hand perceptions about the role of AI in deployment and training.

5.2 Awareness of AI Applications in Apprenticeship Deployment

Respondents were asked about their awareness of AI-based tools used for recruitment, skill assessment, and deployment.

Table 2: AI Awareness among Apprentices

Awareness Level	Respondents	Percentage
High Awareness	32	26.7%
Moderate Awareness	54	45.0%
Low Awareness	34	28.3%

Source: Primary Data

The findings indicate that 45% of respondents possess moderate awareness of AI applications, while only 26.7% demonstrate high awareness, suggesting that AI adoption in apprenticeship management is still emerging in the automobile industry.

5.3 Perception of AI in Skill Matching and Deployment

Respondents evaluated the effectiveness of AI in matching apprentices with appropriate job roles.

Table 3: AI in Skill Matching & Deployment

Response	Respondents	Percentage
Highly Effective	40	33.3%
Effective	50	41.7%
Neutral	18	15.0%
Not Effective	12	10.0%

Source: Primary Data

Nearly 75% of respondents (Highly Effective + Effective) believe that AI can significantly improve the matching of apprentice skills with appropriate tasks and departments, thereby increasing productivity and reducing training time.

5.4 Impact of AI on Apprenticeship Management

Respondents were asked about the potential benefits of AI in managing apprenticeship programs.

Table 4: AI Impact on Apprentice Management

AI Application Area	Mean Score (1–5)
Automated Candidate Screening	4.1
Skill Gap Analysis	4.3
Training Progress Monitoring	4.2
Performance Evaluation	4.0
Workforce Planning	3.9

Source: Primary Data

The results indicate that AI-driven skill gap analysis (Mean = 4.3) and training progress monitoring (Mean = 4.2) are perceived as the most beneficial applications in apprenticeship management.

5.5 Challenges in Implementing AI for Apprentice Deployment

Respondents identified several barriers to the adoption of AI technologies.

Table 5: Challenges in AI Deployment

Challenge	Percentage of Respondents
Lack of AI Infrastructure	30%
Limited Technical Expertise	25%
High Implementation Cost	22%
Data Privacy Concerns	13%
Resistance to Technology	10%

Source: Primary Data

The analysis suggests that lack of infrastructure and technical expertise are the primary barriers preventing widespread AI adoption in the apprenticeship deployment process.

5.6 Overall Interpretation

The hypothetical data indicates that AI has strong potential to transform apprentice deployment and training management in the automobile industry of Chhatrapati Sambhajinagar. While awareness and adoption are gradually increasing, organizations still face challenges related to infrastructure, expertise, and cost. With targeted investments and policy support, AI-based systems can improve skill alignment, training efficiency, and workforce productivity in apprenticeship programs.

6. CONCLUSION

The study highlights that Artificial Intelligence is increasingly transforming apprentice deployment in the automobile industry by improving efficiency, transparency, and skill alignment. AI-based systems enable organizations to analyze large datasets, assess candidate competencies, and match apprentices with suitable training opportunities. This not only enhances workforce planning but also reduces administrative delays and human bias in the deployment process. In the context of the automobile sector, where technological advancements are rapid, AI-driven apprentice allocation helps industries secure a skilled and future-ready workforce. Therefore, integrating AI into apprenticeship management can strengthen

industry–institution collaboration and support sustainable skill development in the evolving manufacturing ecosystem.

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