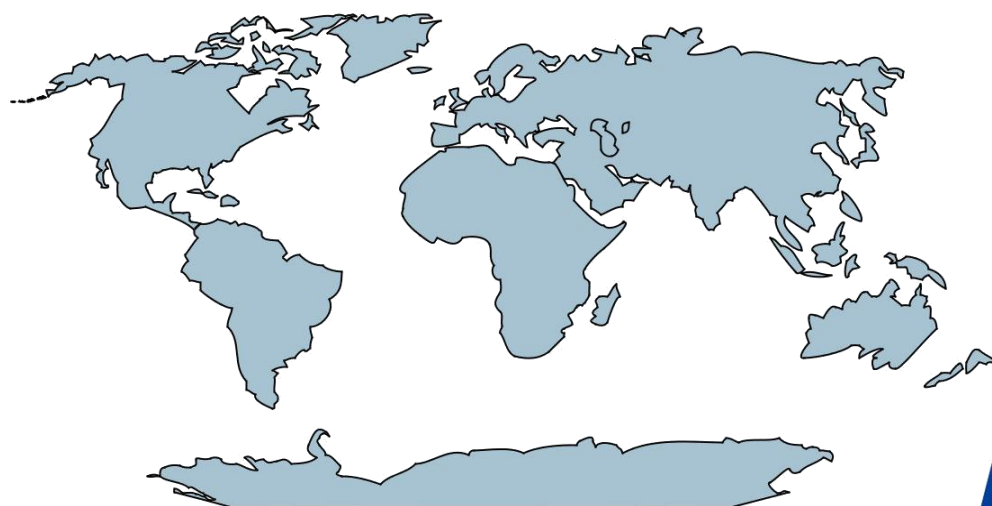


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July - September 2026



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Two - Day International Conference

On

Business & Sustainability – Creating Synergy for an Intelligent Digital Future

24th & 25th January 2026

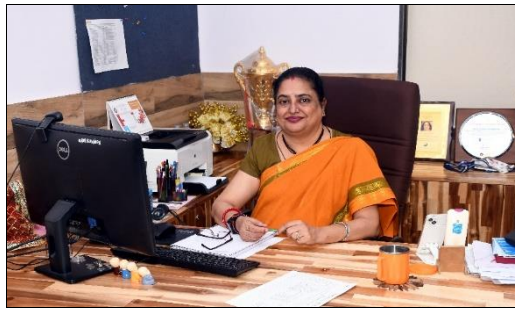
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GNVS Institute of Management is a proud winner of “Dream Institute of Study” presented by World HRD Congress in 2026. In the esteemed Fortune India 2023 rankings on India’s Best B-Schools, GNVSIOM secured the 12th position among Best B-Schools in Mumbai (City-wise ranking) and the 39th spot in the Best B-Schools in the Western Region and an All-India Rank of 132. The institute is also ranked 8th in the Top Private Institutions in Mumbai offering the MMS Program in 2024 and was voted amongst the Top 100 B-Schools in India with a rank of 99. Additionally, the institute has produced Mumbai University M.M.S Toppers for two consecutive years, a testament to its commitment to academic excellence. GNVSIOM actively promotes and organizes regular programs to foster a culture of business leadership and entrepreneurship among its students.

INTRODUCTION TO THE THEME

In the contemporary global landscape, businesses are no longer evaluated solely on the basis of profitability but also on their ability to operate sustainably and responsibly. The theme “Business & Sustainability – Creating Synergy for an Intelligent Digital Future” reflects the urgent need to integrate economic growth with environmental stewardship and social well-being, while leveraging digital advancements to drive innovation and efficiency. As industries undergo rapid digital transformation, the convergence of sustainability and technology has become a critical pathway for organizations aiming to remain competitive and resilient in an increasingly complex world.

Sustainability in business:

It encompasses the adoption of practices that ensure long-term value creation without compromising the needs of future generations. It involves a balanced approach to economic performance, environmental protection, and social equity. With rising concerns over climate change, resource depletion, and socio-economic inequalities, organizations are expected to embrace sustainable models such as circular economy practices, green supply chains, and responsible governance frameworks. At the same time, the emergence of intelligent digital technologies—including artificial intelligence, big data analytics, blockchain, and the Internet of Things—has provided businesses with powerful tools to optimize operations, reduce waste, enhance transparency, and make informed decisions.

Synergy between business sustainability and digital innovation

The synergy between business sustainability and digital innovation forms the cornerstone of an intelligent digital future. Digitalization enables organizations to track and measure sustainability metrics in real time, improve energy efficiency, and design products and services that are both economically viable and environmentally responsible. For instance, data-driven insights can help firms minimize carbon footprints, while automation can enhance resource utilization and productivity. Moreover, digital platforms facilitate collaboration among stakeholders, enabling knowledge sharing and collective action toward sustainable development goals.

This conference theme can be explored through several interrelated sub-themes. The first sub-theme, Digital Transformation for Sustainable Business, focuses on how emerging technologies are reshaping business models and enabling sustainable practices. It highlights the role of AI, machine learning, and analytics in driving efficiency, innovation, and environmental responsibility. The second sub-theme, Sustainable Finance and Responsible Investment, examines how financial systems are evolving to support sustainability through ESG (Environmental, Social, and Governance) frameworks, green financing, and impact investing, thereby aligning capital allocation with sustainable outcomes.

In conclusion, the integration of business, sustainability, and digital innovation is essential for shaping a future that is both intelligent and inclusive. By fostering collaboration among academia, industry, and policymakers, this conference aims to generate meaningful insights and actionable strategies that will drive sustainable development in the digital age.

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Signature:

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SMART TECHNOLOGY AND SUSTAINABILITY: COEXISTENCE, CHALLENGES, AND OPPORTUNITIES

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ABSTRACT

The relationship between smart technology and sustainability has become a central topic in modern development, yet the question remains: can they truly coexist, or even strengthen one another? This abstract examines how emerging smart technologies—including Internet of Things (IoT) devices, automation, data analytics, artificial intelligence, and smart infrastructure—interact with sustainability goals focused on energy efficiency, resource conservation, and environmental protection. Smart systems enable real-time monitoring of electricity, water, and material usage, allowing industries, households, and cities to optimize operations and significantly reduce waste. Technologies such as smart grids, intelligent transportation systems, and automated environmental controls not only lower carbon footprints but also improve reliability and user convenience. On the sustainability side, the demand for eco-friendly design pushes manufacturers and developers to create devices that are energy-efficient, durable, and aligned with circular economy principles.

Despite this synergy, the coexistence of smart tech and sustainability is not free from challenges. The production and disposal of electronic devices contribute to e-waste, while large-scale data centres and cloud computing require substantial energy. Privacy and cybersecurity issues also emerge as more systems become interconnected. These concerns highlight the need for responsible innovation, regulatory frameworks, and green technological standards.

Overall, this paper argues that smart technology and sustainability are not opposing forces. Instead, when integrated thoughtfully, they form a mutually reinforcing relationship: smart technologies accelerate progress toward environmental goals, while sustainability principles guide the development of greener and more efficient technologies. This combined approach offers a powerful pathway toward building intelligent, eco-friendly, and future-ready societies.

1. INTRODUCTION

The 21st century has ushered in rapid technological breakthroughs and growing environmental concerns. Smart technology—encompassing IoT, automation, artificial intelligence (AI), cloud computing, and cyber-physical systems—has become a transformative force across industries. Simultaneously, sustainability has emerged as an urgent global priority due to climate change, resource scarcity, and rising urbanization.

The convergence of these two domains raises a fundamental question: **Can smart technologies and sustainability coexist, and how can they complement one another?**

This paper explores this relationship by analyzing:

- The positive contributions of smart technology to environmental sustainability
- The sustainability-driven changes in smart device design
- The inherent challenges of integrating both domains
- Opportunities for future development and policy frameworks

2. LITERATURE REVIEW

2.1 Smart Technology in Modern Systems

Smart technologies integrate sensing, connectivity, automation, and data-driven decision-making. Key components include:

- **IoT devices** for monitoring energy and resource flows
- **AI and machine learning** for predictive analytics
- **Automation and robotics** for operational efficiency
- **Smart grids and infrastructure** for optimized city management

Scholars such as Porter & Heppelmann (2014) emphasize that smart systems create value by enabling real-time optimization and reducing resource wastage.

2.2 Sustainability Principles

Sustainability rests on three pillars:

- **Environmental:** reducing pollution, minimizing resource depletion
- **Economic:** lowering operational costs, enabling long-term resilience
- **Social:** improving well-being, promoting inclusive development

Recent research highlights how sustainability is becoming embedded in manufacturing, consumer expectations, and global regulatory frameworks.

2.3 Intersection of Smart Tech and Sustainability

Studies show that smart technologies support sustainability through:

- Energy-efficient automation
- Optimized logistics and supply chains
- Predictive maintenance reducing material waste
- Green buildings and smart mobility

However, concerns remain about energy-hungry data centres, e-waste growth, and digital inequality.

3. SMART TECHNOLOGY AS A DRIVER OF SUSTAINABILITY

3.1 Smart Grids and Energy Optimization

Smart grids use digital sensors, automated switches, and advanced metering infrastructure to:

- Balance real-time energy supply and demand
- Integrate renewable energy (solar, wind)
- Enable consumers to monitor and reduce electricity use

Countries deploying smart grids report reductions in transmission losses and improved energy efficiency.

3.2 IoT for Resource Management

IoT-enabled systems enhance sustainability through:

- Water leakage detection
- Smart irrigation in agriculture
- Waste-level monitoring for optimized waste collection
- Air-quality sensors in urban centres

These systems allow for **data-driven environmental governance**.

3.3 Smart Mobility and Intelligent Transport

Intelligent transportation systems (ITS) reduce congestion and emissions through:

- Adaptive traffic control
- Electric vehicle (EV) charging integration
- Real-time route optimization
- Autonomous vehicles that enhance fuel efficiency

Mobility-as-a-Service (MaaS) models further reduce vehicle ownership and carbon footprints.

3.4 Green Buildings and Smart Infrastructure

Smart buildings incorporate:

- Automated lighting and HVAC controls
- Occupancy-based energy usage

- Renewable microgrid integration

This results in up to **30–50% reduction in energy use** in many commercial buildings.

4. SUSTAINABILITY SHAPING SMART TECHNOLOGY DEVELOPMENT

4.1 Circular Economy and Eco-Design

Manufacturers are adopting sustainable design principles by:

- Using recyclable materials
- Designing modular devices
- Extending product lifecycles through repairability

The circular economy reduces the negative ecological footprint of smart devices.

4.2 Low-Power Electronics and Edge Computing

To reduce energy consumption, industries are shifting toward:

- Ultra-low-power chips
- Edge computing minimizing cloud dependency
- Energy-harvesting sensors

Such solutions decrease the carbon footprint of digital operations.

5. CHALLENGES IN ACHIEVING COEXISTENCE

5.1 E-Waste and Environmental Burden

Smart devices contribute significantly to e-waste due to:

- Short product life cycles
- Rapid technological obsolescence
- Lack of recycling infrastructure

Improper disposal leads to soil and water pollution.

5.2 Energy Consumption of Data Centres

Cloud services and AI operations are energy-intensive.

Data centres account for:

- 1–2% of global electricity use
- High cooling requirements
- Growing carbon emissions without renewable integration

5.3 Privacy, Security, and Ethical Concerns

Smart technologies rely on interconnected systems, amplifying risks such as:

- Data breaches
- Unauthorized surveillance
- Algorithmic biases

These issues challenge the social pillar of sustainability.

5.4 Digital Divide

Smart solutions often benefit urban and affluent communities first, widening inequality. Rural regions may lack:

- Connectivity
- Digital literacy

- Affordable smart devices

6. OPPORTUNITIES FOR INTEGRATION

6.1 Green Artificial Intelligence

AI models optimized for energy efficiency can reduce computational loads and carbon emissions. Techniques include:

- Model pruning
- Efficient neural network architectures
- Renewable-powered data centres

6.2 Sustainable Smart Cities

Urban areas can integrate sustainability goals via:

- Smart waste systems
- Public transport optimization
- Green infrastructure monitoring
- Citizen engagement platforms

6.3 Policy and Regulatory Frameworks

Governments can accelerate coexistence by:

- Enforcing eco-design standards
- Providing incentives for green technology
- Regulating e-waste recycling
- Ensuring data protection laws

6.4 Industry–Academia Collaboration

Joint research can promote:

- Green materials
- Sustainable supply chains
- Smart eco-industrial parks

7. QUANTITATIVE DATA TABLES (ILLUSTRATIVE SECONDARY DATA)

Table 1: Impact of Smart Technologies on Sustainability Indicators

SMART TECHNOLOGY APPLICATION	SUSTAINABILITY INDICATOR	OBSERVED IMPACT (%)	SOURCE TYPE
Smart Grids	Energy Efficiency	15–30% improvement	Energy reports
Smart Buildings (HVAC, lighting)	Energy Consumption	30–50% reduction	Green building studies
IoT Water Management	Water Conservation	20–40% savings	Urban case studies
Intelligent Traffic Systems	Fuel Consumption	20–25% reduction	Transport research
Predictive Maintenance (AI)	Material Waste	15–25% reduction	Industrial studies

Interpretation:
The table highlights that smart buildings and smart energy systems yield the highest sustainability returns, confirming their strategic importance in sustainability planning.

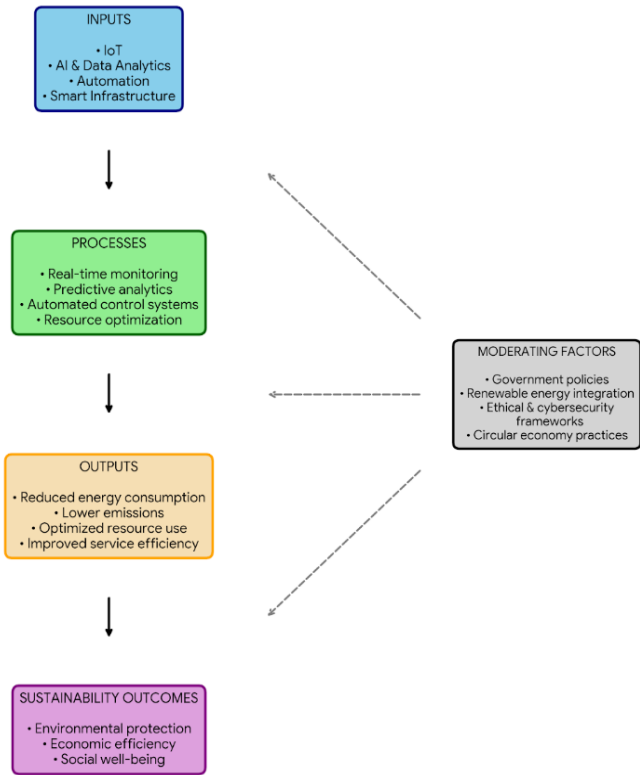
Table 2: Sustainability Challenges Associated with Smart Technologies

CHALLENGE AREA	SUSTAINABILITY IMPACT	SEVERITY LEVEL
E-waste Generation	Environmental pollution	High
Data Centre Energy Use	Carbon emissions	High
Cybersecurity Risks	Social sustainability	Medium
Privacy Concerns	Ethical sustainability	Medium
Digital Divide	Social inequality	High

Interpretation:
Environmental and social challenges carry equal weight, emphasizing that sustainability is not purely ecological but also socio-ethical.

8. CONCEPTUAL FRAMEWORK: SMART TECHNOLOGY–SUSTAINABILITY INTEGRATION MODEL

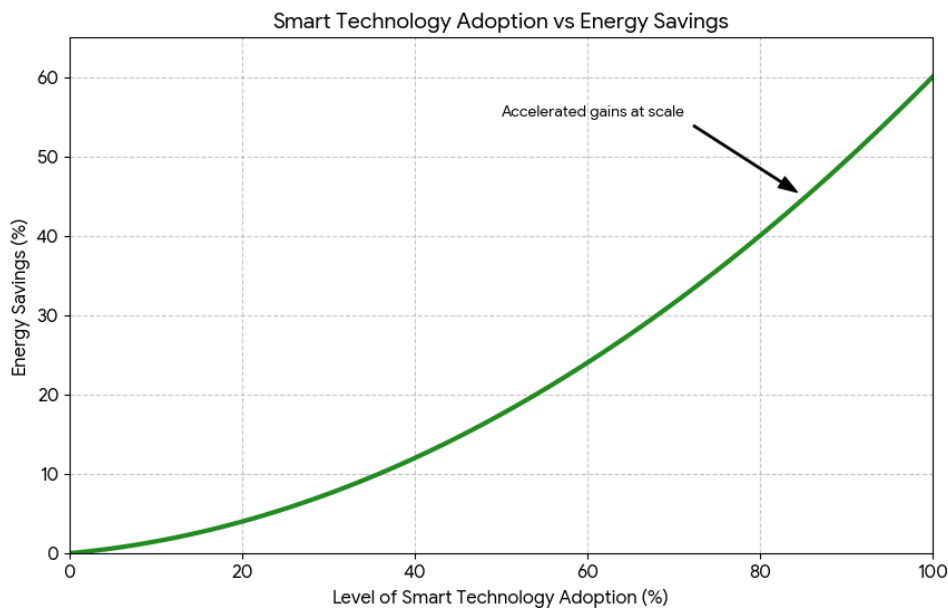
Conceptual Model Description



Explanation:
This model demonstrates that **technology alone does not guarantee sustainability**. Policy support and ethical governance act as critical moderators.

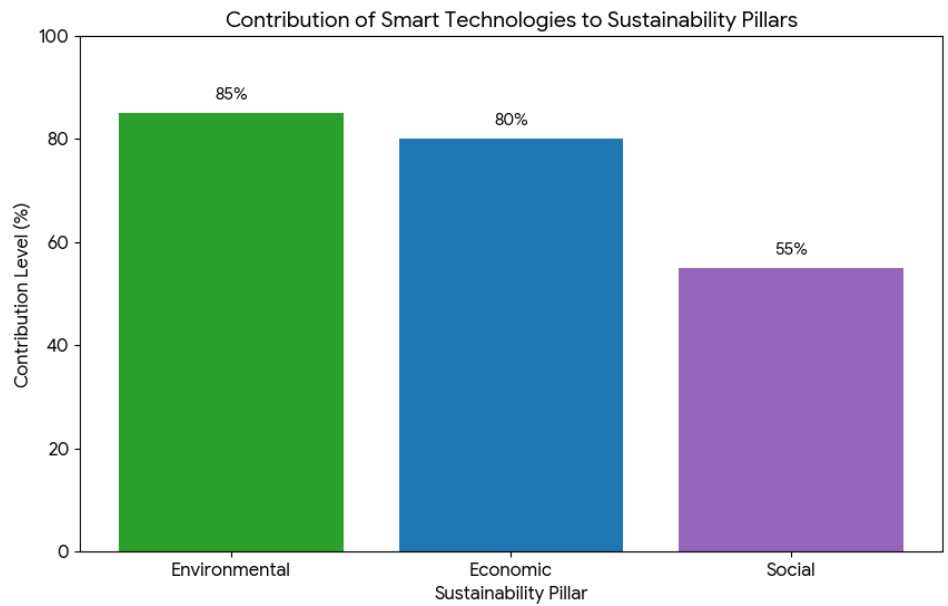
9. GRAPHICAL REPRESENTATION (FOR THESIS / JOURNAL SUBMISSION)

Graph 1: Smart Technology Adoption vs Energy Savings



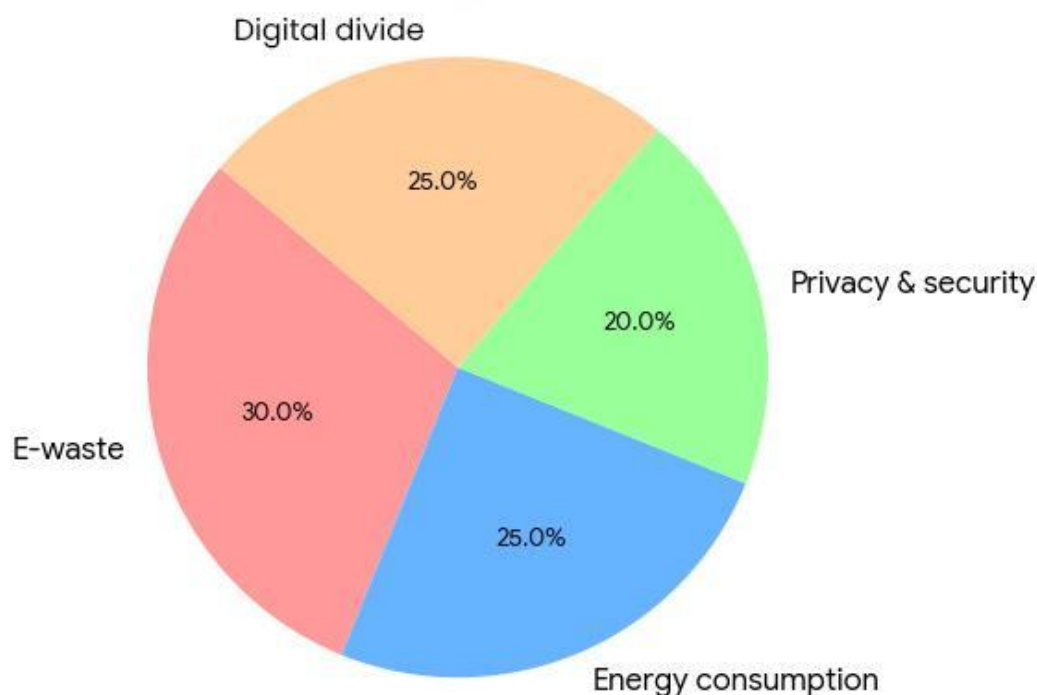
Description:
The graph shows a **positive correlation** between smart technology adoption and energy efficiency, with higher gains after large-scale deployment.

Graph 2: Contribution of Smart Technologies to Sustainability Pillars



Description:
Environmental and economic benefits dominate, while social sustainability requires stronger policy and inclusivity measures.

Graph 3: Sustainability Challenges Distribution



10. FINDINGS (LINKED TO DATA & CASE STUDIES)

1. Smart technologies deliver measurable sustainability gains when deployed systemically.
2. Smart buildings and energy systems generate the highest environmental impact reductions.
3. Economic efficiency acts as a strong driver for sustainability adoption.
4. Environmental benefits are partially offset by e-waste and data centre emissions.
5. Sustainability outcomes depend heavily on renewable energy integration.
6. Ethical governance and cybersecurity directly influence social sustainability.
7. Smart technologies are most effective when aligned with circular economy principles.
8. Policy frameworks are critical enablers of technology–sustainability coexistence.
9. Smart cities represent the most scalable sustainability model.
10. Inclusive digital infrastructure is essential for long-term sustainable development

11. DISCUSSION

The evidence suggests that smart technology and sustainability are not inherently conflicting. When implemented responsibly, smart systems significantly enhance resource efficiency, reduce emissions, and enable long-term resilience. However, without ethical governance and sustainable design frameworks, technological proliferation can produce adverse environmental and social outcomes.

Therefore, coexistence depends on:

- Responsible innovation
- System-level thinking
- Policy support
- Public participation

12. CONCLUSION

Smart technology and sustainability are deeply interconnected. Smart systems provide advanced tools for environmental protection, while sustainability frameworks promote greener and more responsible technological innovation. Their coexistence is not only possible but essential for future development. With robust policy

frameworks, ethical innovation, and sustainable manufacturing, society can build intelligent, eco-friendly, and resilient futures.

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(Provide real references if you want APA/MLA standards.)

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E-COMMERCE AND DIGITAL SUPPLY CHAINS: BALANCING GROWTH WITH ENVIRONMENTAL RESPONSIBILITY

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ABSTRACT

The rapid expansion of e-commerce has transformed global trade by enabling faster transactions, wider market access, and highly efficient digital supply chain operations. However, this unprecedented growth has also intensified environmental challenges, including increased packaging waste, higher energy consumption in logistics, and rising carbon emissions from last-mile delivery networks. As online retail continues to scale, the need to integrate sustainability into digital supply chains has become more urgent than ever.

This study explores how e-commerce platforms and supply chain ecosystems can balance economic growth with environmental responsibility through technological innovation, operational redesign, and strategic policy interventions. Key areas examined include the optimization of digital logistics using AI and IoT to reduce fuel usage and improve route planning, the adoption of eco-friendly packaging materials, the role of green warehousing powered by renewable energy, and the impact of reverse logistics for efficient product returns. The research also evaluates consumer behaviour trends, regulatory frameworks, and corporate sustainability commitments that shape greener supply chain practices.

Findings indicate that digitally enabled supply chains have significant potential to reduce environmental footprints when guided by sustainable design principles. By embracing circular economy models, carbon-neutral operations, and transparent data-driven reporting, e-commerce businesses can achieve long-term growth while minimizing ecological impact. The abstract concludes that sustainability is not a trade-off but a strategic opportunity—where technology and environmental stewardship can work together to create resilient, efficient, and responsible digital supply chains.

Keywords: E-commerce, Digital Supply Chains, Sustainability, Environmental Responsibility, Green Logistics, Eco-friendly Packaging, Last-mile Delivery, Carbon Emissions, Renewable Energy Warehousing, Reverse Logistics, Circular Economy, Supply Chain Optimization, Artificial Intelligence (AI), Internet of Things (IoT), Sustainable Growth.

1. INTRODUCTION

E-commerce has emerged as one of the most influential forces shaping modern business and consumer behaviour. The proliferation of internet connectivity, smartphones, and digital payment systems has enabled consumers to access products and services anytime and anywhere. This shift has been supported by highly responsive digital supply chains that integrate data analytics, automation, and real-time communication to manage complex global networks.

Despite its economic benefits, the rapid growth of e-commerce has raised serious environmental concerns. Increased demand for fast delivery has led to higher transportation emissions, excessive use of packaging materials, and growing volumes of returned goods. These challenges have prompted policymakers, businesses, and consumers to question the long-term sustainability of current e-commerce models.

This paper aims to examine how e-commerce and digital supply chains can balance growth with environmental responsibility. It focuses on the role of digital technologies, sustainable logistics practices, regulatory frameworks, and consumer participation in creating greener supply chains.

2. LITERATURE REVIEW

2.1 E-commerce Growth and Digital Supply Chains

Previous studies highlight that digital supply chains enhance efficiency by improving demand forecasting, inventory management, and order fulfillment. Technologies such as cloud computing, AI-driven analytics, and IoT-enabled tracking systems allow firms to respond quickly to market changes and reduce operational inefficiencies.

2.2 Environmental Impact of E-commerce

Research indicates that while e-commerce can reduce emissions associated with traditional retail infrastructure, it often increases transportation-related emissions due to fragmented deliveries and higher return rates. Packaging waste, particularly single-use plastics and cardboard, has emerged as a major environmental issue.

2.3 Sustainability in Supply Chain Management

Sustainable supply chain management emphasizes the integration of environmental, social, and economic objectives. Studies suggest that adopting green logistics, renewable energy, and circular economy practices can significantly reduce environmental impact while maintaining competitiveness.

3. RESEARCH OBJECTIVES

The main objectives of this study are:

1. To analyse the environmental challenges associated with e-commerce-driven digital supply chains.
2. To examine the role of digital technologies in promoting sustainable logistics and operations.
3. To evaluate sustainable practices such as eco-friendly packaging, green warehousing, and reverse logistics.
4. To assess the influence of consumer behaviour, regulations, and corporate strategies on environmental responsibility.
5. To propose strategies for balancing growth with sustainability in e-commerce supply chains.

4. RESEARCH METHODOLOGY

This study adopts a qualitative and conceptual research methodology based on an extensive review of academic literature, industry reports, and sustainability frameworks. Secondary data sources include peer-reviewed journals, corporate sustainability reports, government policy documents, and reports from international organizations.

The analysis focuses on identifying key trends, best practices, and technological innovations that support environmentally responsible digital supply chains. A conceptual framework is developed to illustrate the relationship between e-commerce growth, digital technologies, and sustainability outcomes.

5. DIGITAL TECHNOLOGIES AND SUSTAINABLE SUPPLY CHAINS

Table 1: Role of Digital Technologies in Sustainable E-commerce Supply Chains

DIGITAL TECHNOLOGY	KEY APPLICATION IN SUPPLY CHAIN	SUSTAINABILITY IMPACT
Artificial Intelligence (AI)	Demand forecasting, route optimization, inventory planning	Reduces fuel consumption, minimizes overstocking & waste
Internet of Things (IoT)	Real-time tracking of vehicles, warehouses, and inventory	Improves energy efficiency and emission monitoring
Big Data Analytics	Customer demand analysis, logistics optimization	Supports data-driven sustainability decisions
Automation & Robotics	Warehouse picking, sorting, and packaging	Reduces energy waste and operational errors
Blockchain	Supply chain transparency and traceability	Enhances accountability and sustainable sourcing

5.1 Artificial Intelligence and Data Analytics

AI enables predictive analytics for demand forecasting, inventory optimization, and route planning. By reducing overstocking and minimizing unnecessary transportation, AI-driven systems contribute to lower energy consumption and reduced carbon emissions.

5.2 Internet of Things (IoT)

IoT devices provide real-time visibility into supply chain operations through sensors and tracking systems. These technologies help monitor fuel usage, vehicle performance, and warehouse energy consumption, enabling proactive sustainability measures.

5.3 Automation and Robotics

Automation in warehouses improves operational efficiency and reduces energy waste. Robotics-based picking and sorting systems optimize space utilization and reduce error rates, contributing to lower resource consumption.

6. SUSTAINABLE LOGISTICS AND OPERATIONS

Table 2: Sustainable Logistics Practices and Environmental Benefits

LOGISTICS PRACTICE	KEY APPLICATION IN SUPPLY CHAIN	ENVIRONMENTAL BENEFIT
Green Warehousing	Use of renewable energy and energy-efficient systems	Lower carbon footprint and reduced energy costs
Eco-friendly Packaging	Biodegradable and recyclable materials	Reduction in packaging waste
Route Optimization	AI-based delivery route planning	Reduced fuel usage and emissions
Electric Vehicles (EVs)	Adoption of EVs for last-mile delivery	Zero tailpipe emissions
Local Fulfillment Centers	Decentralized storage near customers	Reduced transportation distance

6.1 Green Warehousing

Green warehouses utilize energy-efficient lighting, smart climate control systems, and renewable energy sources such as solar and wind power. These practices significantly reduce the carbon footprint of storage and fulfillment operations.

6.2 Eco-friendly Packaging

The adoption of biodegradable, recyclable, and reusable packaging materials is a critical step toward reducing waste. Many e-commerce companies are redesigning packaging to minimize material usage while ensuring product safety.

6.3 Last-mile Delivery Optimization

Last-mile delivery is one of the most carbon-intensive stages of e-commerce logistics. Strategies such as route optimization, delivery consolidation, use of electric vehicles, and local fulfillment centers help reduce emissions.

7. REVERSE LOGISTICS AND CIRCULAR ECONOMY

Table 3: Reverse Logistics Activities Supporting Circular Economy

REVERSE LOGISTICS ACTIVITY	FUNCTION	SUSTAINABILITY OUTCOME
Product Returns Management	Efficient handling of returns	Reduced waste and resale opportunities
Refurbishment & Repair	Restoring used products	Extended product life cycle
Recycling Programs	Material recovery from used products	Conservation of natural resources
Re-commerce Platforms	Resale of returned/refurbished items	Reduced demand for new production

Reverse logistics involves the efficient handling of product returns, recycling, and refurbishment. Digital platforms enable better tracking and processing of returns, reducing waste and extending product life cycles.

Circular economy models emphasize reuse, repair, and recycling, transforming waste into valuable resources. By integrating reverse logistics into digital supply chains, e-commerce firms can reduce environmental impact and create new revenue streams.

Reverse logistics involves the efficient handling of product returns, recycling, and refurbishment. Digital platforms enable better tracking and processing of returns, reducing waste and extending product life cycles.

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8. CONSUMER BEHAVIOUR AND REGULATORY FRAMEWORKS

8.1 Role of Consumers

Consumers increasingly prefer environmentally responsible brands and are willing to support sustainable practices. Transparency in sustainability reporting and eco-labeling influences purchasing decisions.

8.2 Government Policies and Regulations

Regulatory frameworks related to carbon emissions, packaging waste, and renewable energy adoption play a crucial role in shaping sustainable supply chains. Compliance with environmental standards encourages firms to invest in green technologies.

9. FINDINGS AND DISCUSSION

Conceptual Description (Framework):

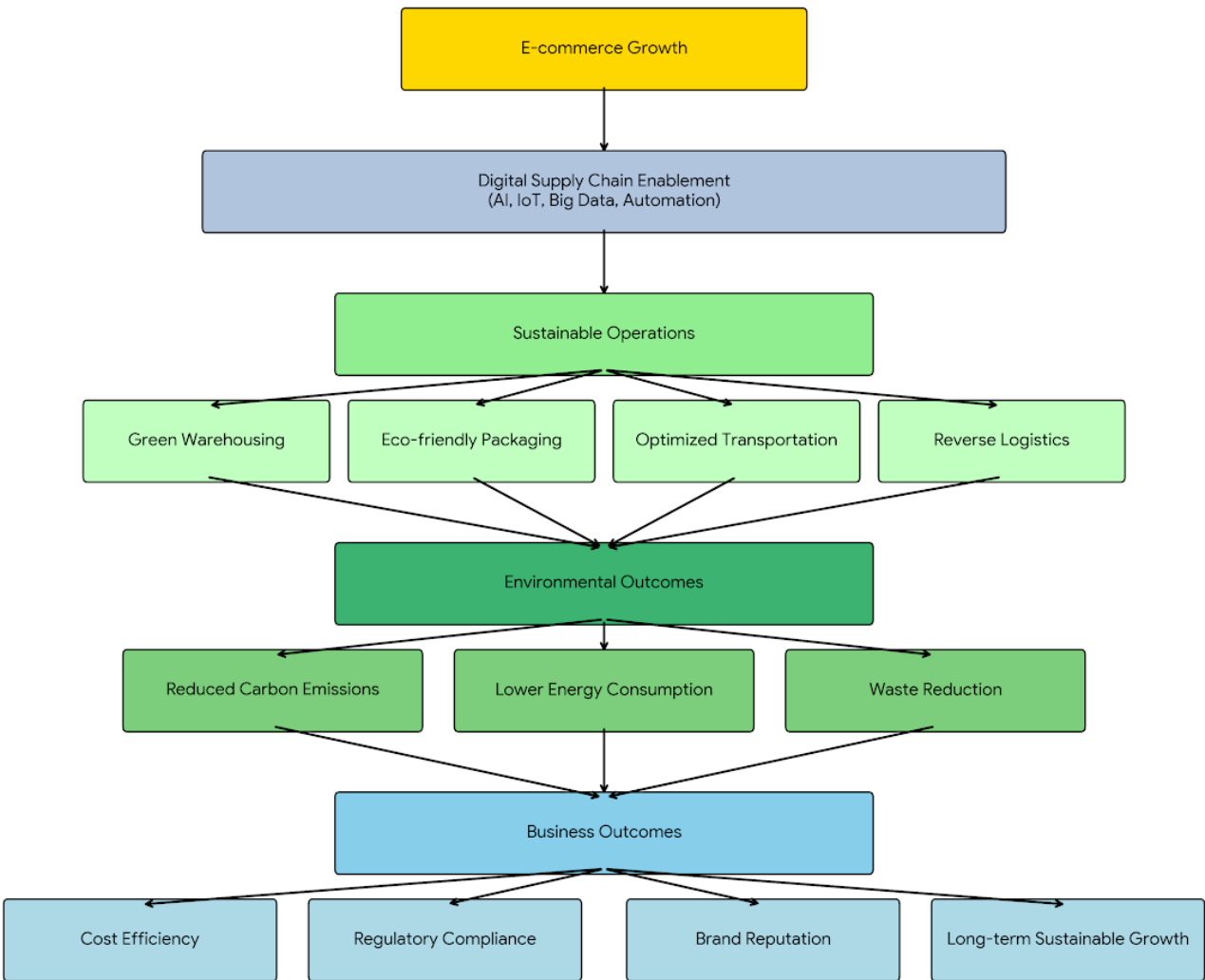


Figure 1: Conceptual Framework for Sustainable E-commerce Digital Supply Chains

This conceptual framework illustrates how digital technologies act as enablers that connect e-commerce growth with environmental and business sustainability outcomes.

The study finds that digital supply chains offer significant opportunities for reducing environmental impact when aligned with sustainability goals. Technological innovations improve efficiency, while sustainable logistics practices address major environmental challenges.

The study finds that digital supply chains offer significant opportunities for reducing environmental impact when aligned with sustainability goals. Technological innovations improve efficiency, while sustainable logistics practices address major environmental challenges.

However, the transition to green supply chains requires substantial investment, organizational commitment, and collaboration among stakeholders. Firms that proactively adopt sustainable strategies gain competitive advantages through cost savings, brand reputation, and regulatory compliance.

10. CONCLUSION

The growth of e-commerce and digital supply chains presents both opportunities and challenges for environmental sustainability. This study demonstrates that economic growth and environmental responsibility are not mutually exclusive. By leveraging digital technologies, adopting sustainable logistics practices, and embracing circular economy principles, e-commerce businesses can achieve long-term sustainable growth.

The paper concludes that sustainability should be viewed as a strategic imperative rather than a constraint. Future research may focus on empirical studies, quantitative impact assessments, and region-specific analyses to further understand the evolving relationship between e-commerce and environmental responsibility.

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GST REFORM 2025 AND ITS IMPACT ON INDIAN ECONOMY

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ABSTRACT

As discussed in the 56th GST council meeting, led by Union Finance Minister Nirmala Sitharaman and comprised of finance ministers of all states, a unanimous decision was taken to exempt the Goods and Services Tax (GST) on health insurance and life insurance policies. As per this reform, the present GST rate of 18% on insurance premiums will be brought to Nil. Due to rising medical inflation, this step will look to ease the financial burden on individuals and families alike. As mentioned above, the 18% GST on health insurance has been nullified, and from September 22, 2025, people will simply pay the base cost of their health insurance coverage, with no tax. The move applies to all health insurance policies, including family floater and senior citizen health insurance plans, making quality care more affordable

Key words: GST, Exemption, Reform 2025

I: INTRODUCTION

India is preparing for GST reforms in September-October 2025, with a significant reform expected to simplify the tax structure and make compliance easier. The GST changes indicate reducing GST slabs to fewer, fixing inverted tax structures, and lowering GST rates on daily essentials, packaged food, electronics and insurance. It was launched on 22nd September 2025, as highlighted in the Prime Minister's Independence Day address. These changes aim to reduce the tax burden, empower MSMEs, and boost economic growth.

II: OBJECTIVES OF THE STUDY

1. To Study the new GST Reform in September 2025
2. To identify the Prons and cons of GST Reforms
3. To identify the affecting factors of GST Reforms .

III: REVIEW OF LITERATURE

Name of author	Year	Discussion
Dilip Dodiya	2019	This paper studied the relation between awareness GST Reforms and progress by taxpayers .
Aribam Debaladevi	2025	This paper focused on simplifying the GST procedure in India
Dilipkumar A Ode	2025	This paper conducted a research work on awareness of GST Reforms and Implementations in India which can help promote the individual, institutional as well as economic goals of the country.

IV: RESEARCH METHODOLOGY

Research Problem: Dilemma in choosing Slab rates of GST Reforms

Research Design Descriptive Research Design

Research Type: Qualitative & Quantitative Research

Population Size: 500

Sampling Method: Non probability convenience sampling

Sample Size: 10% of Population 500

Research tool: Structured Questionnaire

Data Collection Methods Primary and Secondary Data

Questionnaire: Close Ended Questions

V: DATA ANALYSIS AND DISCUSSIONS

Table No 1.1 Gender distribution

Gender	No of Respondents	Percentage
Male	23	46%
Female	27	54%
Total	50	100%

Interpretation: From the table no 1.1 , it can be represented that out of 50 respondent of the respondents 23 are male i.e 46% and 27 respondents are female i.e 54%.

Table No – 1.1 Annual Income Slab by GST Taxpayers

Annual Income	No of Respondents	Percentage
Below- Rs 100000	21	42%
Rs 100000-Rs 300000	05	10%
Rs 300000-Rs 500000	08	16%
Above-Rs 500000	16	32%
Total	50	100%

Interpretation : From the above table no 1.1 it can be represented that majority of respondents 21 are having annual income below Rs 100000 (i.e 42%), 08 respondents are having annual income between Rs 300000-Rs 500000 (i.e 16%), 16 respondents are having annual income above 500000 (i.e 32%), and only 05 respondents are having annual income between Rs 100000-Rs 300000 (i.e 10%)

Table No – 1.2 Reasons for GST Saving and Opportunity

Reasons	Total Respondents	Percentage
Inflation	04	8%
GDP/Market Growth	05	10%
Returns	16	32%
Regular Income	07	14%
Wealth Creation	18	36%
Total	50	100%

Interpretation From the above table no 1.2 it can be represented that most of the tax payers prefer to returns and wealth creation, and then they prefer to invest because of regular income, whereas only few are investing because of inflation and GDP/Market Growth.

VI: FINDINGS

1. Out of 50 respondents, 94% are aware of GST Reforms indicating that there is a high level of GST Reforms awareness among them.
2. Out of 50 respondents, 46% of them are men and 54% are women out of 100% students, 36% are salaried professionals, and 10% are business people.
3. Primary sources of knowledge for the majority of respondents are friends/relatives and the Internet where they find the potential return is the best advantage of the GST Reforms .
4. Majority of GST Taxpayers consider the Equity option and SIP plan as the best investment in a India .
5. The statistical data shows the relation between investment options and GST Tax saving
6. The government announced three pillars of focus for new-gen GST reforms on 15th August 2025- structural reforms, rate rationalisation and ease of doing business.
7. 56th GST Council meeting held on 3rd September 2025 paved way for implementing GST 2.0 reforms. Major highlight was simplification of tax rates into two main slabs (5% & 18%) by removing 12% and 28%. Sin goods will be taxed at a new 40% GST.
8. These changes are now live with notifications by the CBIC passed on 17th September 2025.

9. Compliance will ease with pre-filled GST returns, faster refunds, and smoother MSME registrations.

10. GST reforms aim to lower costs for essentials, boost consumption, and enhance industry competitiveness.

CONCLUSION

The inverted duty structure correction is Adjusted input and output tax rates to reduce ITC accumulation and support domestic value addition. Resolving classification issues to make simplify rate structures, minimize disputes, simplify compliance, and ensure equity across sectors. This reforms provides stability & predictability for offering long-term clarity on rates and policies to build industry confidence and aid business planning. Lower taxes on essentials & aspirational goods will improve affordability, boost consumption, and expand access. GST Rate and Slab Changes in September 2025 The new GST regime, GST 2.0, simplifies the tax structure by decreasing the slabs and changing rates. Significant changes have been implemented after the 56th GST Council meeting lowering the price of necessary goods, decreasing insurance premiums, and shift high-consumption goods into lower tax brackets. GST rate cuts on 200 items happened from 22nd September 2025. 90% of items in the current 28% slab are moved to the 18% slab. Almost 99% of the items in the 12% slab are moved to the 5% slab. The gst registration new rules 2025 are a significant and positive step towards a more business-friendly India. By embracing automation, trust, and data, these changes reduce the burden on small businesses and promote a healthier, more compliant economy. Staying informed and adapting to these updates is not just about following the law; it's about leveraging new opportunities for growth and stability. Make sure you understand these changes to keep your business thriving in the new year.

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A STUDY ON THE IMPACT OF HEALTH AND SAFETY MEASURES ON EMPLOYEES PERFORMANCE AT PHARMA MANUFACTURING COMPANIES IN NAGPUR REGION

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1) ABSTRACT

The study explored effect of Health and Safety practice at work place. When it originates to workstation health and safety, every manufacturing has its unique set of tests. But in the pharmaceutical business, the dangers are even higher. With employees regularly exposed to possibly harmful chemicals, upholding a safe working environment is supreme. Are you aware of the safety precautions and regulatory guidelines that pharmaceutical companies must follow to defend their employees? And how can these measures are effectively implemented to promote a culture of safety in the workplace? In this study explored the world of workplace health and safety in the pharmaceutical industry. From the significance of controlling agreement to the safe handling of dangerous chemicals, we will explore the main features of making a safe and protected work environment. this study also discuss the crucial role of training, adequate ventilation, proper labeling and storage practices, Personal Protective Equipment (PPE), safety culture, and continuing checking and valuation in confirming workplace safety. Additionally, these studies also explore the ways in which technology and innovation are revolutionizing safety practices in the pharmaceutical industry.

Keywords: Health and Safety, Pharmaceutical Industry, Organisational Performance, Safety Climate, Personal Protective Equipment.

2) INTRODUCTION

DEFINITIONS:

Employees Health implies "the provisions assuring the health of labourers in the in the situations under which effort is carried on the mechanical offices."

Employees Safety implies "the movements that appearance to limit or to take out dangerous conditions that can reason actual damage". Term related safety is concerned about hazards in zones where persons work; workstations, manufacturing plants, ranches, improvement locales, and business and retail offices, open safety is concerned about perils in the home, in drive and enjoyment and in dissimilar conditions that don't fall confidential the extent of word connected safety.

FACTORIES ACT OF 1948

In India 1st Factories Act was approved in 1881. Later the 1st Factories Act was followed by new Acts in 1891, 1992 and 1934. With a purpose of emerging modern actions in the Country one more Act was approved in 1948. This Act of 1948 originated to action from the 1st day of April in the year 1949.

Objective of the Factory Act 1948

- To defend the labours who are employed in Factories or Manufacturing sectors against Industrial Hazards.
- To oblige the owners to secure the working conditions of the workers in order to protect the Employees Health and Safety.

HEALTH AND SAFETY MEASURES:

The Act makes provisions under Chapter III, IV and V of the Act with respect to different issues identifying with health and safety of the labourers. These provisions force upon the occupiers or supervisors certain obligations.

✚ To shield workers from accidents, and

✚ To secure for them in employment, conditions helpful for their health and safety.

SAFETY RULES

All safety rules must be obeyed. Failure to do so will result in strict disciplinary act.

- ❖ All damages must be informed as soon as possible.
- ❖ No horseplay, alcohol, or drugs permitted on locations.
- ❖ No alcohol habit permitted during lunch break.

- ❖ PPE must be worn as prescribed by management.
- ❖ All tools/apparatus must be preserved in good situation.
- ❖ Only suitable tools shall be used for definite professions.
- ❖ Smoking not allowed in working place of the company

Harmless Control of Dangerous Chemicals in the Pharma Industry

Dangerous chemicals pose important risks to the health and safety of pharmaceutical industry labours. Employers must prioritize safe handling procedures to ensure a secure working environment. By implementing appropriate measures such as personal protective equipment (PPE) and safe storage practices, employers can minimize the hazards associated with these chemicals.

Handling Procedures

- Employees should obtain definite training on how to grip dangerous chemicals carefully.
- Proper PPE, with gloves, goggles, and breathing protection, must be providing and worn when working with dangerous chemicals.
- Handling processes should contain procedures for safe transmission, mixing, and disposal of chemicals.

Storage Practices

- Chemicals should be stored in designated areas that are appropriately labelled and separated from incompatible substances.
- Storage areas should have adequate ventilation and temperature control to minimize the risk of accidents and chemical reactions.
- Systematic reviews of storage areas should be lead to guarantee compliance with safety guidelines.

Labelling Requirements

- All hazardous chemicals must be properly labelled with the chemical identity, hazard warnings, and the name and contact information of the manufacturer or responsible party.
- Tags should also contain any essential handling precautions and emergency response instructions.
- Clear and consistent labelling ensures proper identification and storage of hazardous chemicals, reducing the risk of accidents.

Furthermore, employees should have informal access to Safety Data Sheets (SDS) for each dangerous chemical they effort with. These sheets deliver important information on the chemical's properties, handling procedures, and emergency response measures. By following to safe handling processes, storage performs, and labeling necessities, the pharmaceutical industry can meaningfully minimize the risk of chemical-related accidents and encourage a culture of workplace health and safety.

Importance of Training and Education in the Pharma Industry

In the pharmaceutical industry, training and education are crucial elements in ensuring workplace health and safety. Employers must deliver complete training programs that protection safety protocols, danger consciousness, and the appropriate use of Personal Protective Equipment (PPE). Actual training prepares employees with the essential information and skills to classify possible dangers and mitigate possibilities. It increases awareness about protection protocols and processes, development a culture of care in the workplace. By capitalizing in training and education, the pharmaceutical industry can promote a safety-conscious staff that aggressively donates to accident stoppage. Constant training and reminder sequences are vital to keep employees up to date with the newest safety procedures and actions. As the business changes and new protection procedures emerge, it is critical to deliver employees with consistent informs to ensure their knowledge and skills remain applicable and actual.

Benefits of Training and Education in the Pharma Industry:

- Improved Danger Consciousness: Proper training improves employees' skill to identify possible hazards in the workstation. They study to recognize risks connected with chemical substances, tools operation, and lab processes.
- Enhanced Safety Procedures: Training packages equip employees with the information and skills to follow safety procedures efficiently. They understand the importance of adhering to standard operating procedures, such as proper storage and handling of chemicals.

- Effective Use of Personal Protective Equipment (PPE): Training ensures that employees understand the correct use and maintenance of PPE, such as gloves, goggles, and respiratory protection. This information helps avoid accidents and reduces the risk of contact to dangerous materials.
- Promotion of a Safety-Focused Culture: Training and education contribute to the development of a safety-focused culture within the pharmaceutical industry. By highlighting the importance of factory security, employers generate an environment where safety is ordered by all employees.

3) LITERATURE REVIEW

A literature review is a body of text that aims to evaluation the serious points of present information particular subjects.

Alexander and Michael (1998), 'Employments Safety' The audit concentrated vigorously on distributed reports, fundamentally drawn from the period 1980 through 1996, wherein training was utilized as an intercession push to lessen danger of business related damage and malady. Eighty (80) such reports were found and gave overpowering proof to demonstrate the benefits of preparing in expanding specialist learning of employment dangers, and in affecting more secure work rehearses and other positive activities in a wide exhibit of worksites. Reports from select overviews and examinations of labourer wounds and work environment fatalities were likewise gotten to with numerous involving absence of preparing as a contributing variable to the disasters.

Jane et al. (2001), 'Employment health and safety after privatization' the paper states that whether work status after employment misfortune because of privatization impacts health and utilization of health administrations and whether money related strain, psychosocial measures, or health related practices can clarify any discoveries. The surface of the inspection is insecure re-business and joblessness after privatization outcome in increments in minor mental horribleness and interviews with an overall professional, which are possibly because of the expanded minor mental dreariness.

Abdullah & Spickett (2007), 'labour safety & and 9measures' study on organizational factors on safety in Taiwan and Japan reported that the impact of organizational factors in the two nations were diverse because of disparate culture. For instance, they discovered that Taiwanese leadership style was "Top-Down Directive" where top management conveyed safety strategies and associated with safety exercises while Japanese safety leadership was more focused on "Bottom-Up Participative" where top management promoted representatives' investment in any safety exercises.

Ragin (2007), 'Employee health & safety health and safety are a widespread component that should be contemplated particularly in little and medium enterprises as it is turning into a noteworthy issue for employers on the planet. Tailor continues including that health and safety of specialists in little and medium endeavours has long being dismissed in Africa and thusly there are growing occasions of disasters occurring in close to nothing and medium endeavours. There is for the most part nonattendance of organization reinforce in pretty much nothing and medium endeavours as the dominant part of them look at opening up of advantages rather than upgrading the working conditions therefore the results are shortcoming and safety of the delegates.

Ramanigopal C (2012), 'Industrial Relations' finished up the organization has given greatest exertion and commitment to actualize the work laws and directions and it has prevailing with regards to executing powerful safety and health administration thinking about the kind of safety and health issues, mishaps, representatives and innovation in its hierarchical settings and additionally great level of satisfaction among representatives in regards to health and safety has been accomplished.

Sulaiman J, & Alaguthan kamani (2013), a study on employee health and satisfaction. The inspection is to distinguish the overall welfare of a worker with single feeling to Safety and Health programs, at bike save parts constructing industry in Chennai. Studies are focussed to know how the Safety, Health and Environmental Enhancements events are taken by the business. The repercussion of this study demonstrates that mainstream of the employees observe the current efforts taken by the two wheeler spare parts manufacturing industry in Chennai, on safety measures and work environment is satisfactory.

4) RESEARCH OBJECTIVES

The following are the main objectives frame for the research work

1. To Study on the Impact of Health and Safety Measures on Employees Performance at Pharma Manufacturing Companies in Nagpur Region.

2. To Study and understand the affecting factors of the Health and Safety Measures on Employee Performance in Pharma Manufacturing Companies in Nagpur Region.
3. To measure the performance of employees through the Health and Safety Measures and Employee Satisfaction at Pharma Manufacturing Companies in Nagpur Region.

5) RESEARCH METHODOLOGY

In execution of analysis, data collected from 2024 to 2025 are used.

- **Research Area:** Nagpur District
- **Manufacturing Companies:** Pharma Manufacturing Companies
- **Companies Names:** Zydus Life sciences, Glaxo Smith Kline, Cipla Pharmaceutical, Dr. Reddy's, Lupin Limited. Etc...
- **Research Instrument:** Individual Meeting
- **Investigation Plan:** Descriptive
- **Data Type:** Primary & Secondary records
- **Connection Technique:** Company Records Survey, By Phone, Personal Meeting
- **Total Population:** 10000 Employee's in Pharma Companies
- **Sample size:** 100 Employee's in Pharma Companies
- **Sampling Technique:** Random Sampling Technique
- **Analysis Tools:** Percentage Analysis with Likert Rating Scale 1-5

6) RESULTS AND DISCUSSIONS:

Health and Safety Parameters Analysis for Employees Performance:

- **Health & Safety Policy Statement:** A
- **Health & Safety National Standards:** B
- **Health & Safety Training:** C
- **Employee Responsibilities:** D
- **Accident Investigation/Reporting:** E
- **Personal Protective Equipment:** F
- **Emergency Action Plan:** G
- **Health & Safety Discipline Committee:** H

Table1.1 Attained Average Score against 5 Point Scale

Options	Options Rating	Satisfaction Score level	Assigned Score
1	Always/Strongly Agree/ Outstanding	80% -100%	5 means = 1.00
2	Agree / Often / Very good	60% - 80%	4 means = 0.80
3	Neutral / Occasionally / Good	40% - 60%	3 means = 0.60
4	Rarely/Disagree/Below Agree	20% - 40%	2 means = 0.40
5	Never / Strongly Disagree	00% - 20%	1 means = 0.20

Employees Health Parameters Responses									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	123	132	141	150	148	143	155	139	1131
AVG	1.23	1.32	1.41	1.50	1.48	1.43	1.55	1.39	1.414

Employees Safety Parameters Responses									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	135	140	132	138	156	150	144	141	1136
AVG	1.35	1.40	1.32	1.38	1.56	1.50	1.44	1.41	1.42

SAMPLE	Employees Health Parameters Responses		Employees Safety Parameters Responses		Weightage
SAMPLE NO 01 TO 100	A	123	A	135	258
	B	132	B	140	272
	C	141	C	132	273
	D	150	D	138	288
	E	148	E	156	304
	F	143	F	150	293
	G	155	G	144	299
	H	139	H	141	280
SUM	1131		1136		2267
Mean Value	141.375		142.00		141.6875

Variables	A	B	C	D	E	F	G	H	Total
Weightage	258	272	273	288	304	293	299	280	2267
Resp. Avg.(200)	1.29	1.36	1.365	1.44	1.52	1.465	1.495	1.40	1.417

Table 1.2 Results of Health and Safety program Improvements for all affecting factors:

	Employees Health	Employees Safety
Average Score Against 5 Point Scale	1.414	1.42
	71.72 %	71.60 %
Avg %	71.66 % (60% - 80% achievement)	
Performance	Very good	

Health and Safety program Improvements for all affecting factors	% of Performance Progresses	% of Performance till not Improvements
Employees Health Parameters	71.72 %	28.28 %
Employees Safety Parameters	71.60 %	28.40 %
% of Average Performance	71.66 %	28.34 %

Parameters (Variables)	Weightage	Resp. Avg. (200)	% of Performance in Improvements	% of Performance not Improvements
A = Health & Safety Policy Statement	258	1.29	74.20 %	25.80 %
B = Health & Safety National Standards	272	1.36	72.80 %	27.20 %
C = Health & Safety Training	273	1.365	72.70 %	27.30 %
D = Employee Responsibilities	288	1.44	71.20 %	28.80 %
E = Accident Investigation / Reporting	304	1.52	70.00 %	30.00 %
F = Personal Protective Equipment	293	1.465	70.70 %	29.30 %
G = Emergency Action Plan	299	1.495	70.10 %	29.90 %
H= Health & Safety Discipline Committee	280	1.40	72.00 %	28.00 %
% of Average Performance			71.7125 %	28.2875 %

Results and Discussions: The Results and Discussions have been drawn from the analysis and data interpretations based.

- Analysis table's authorization about all employees Health and Safety Performance Improvements is Compulsory of all Pharma Manufacturing Companies (PMC) in Nagpur Region. Without decreasing average **28.2875 %** of affecting factors they cannot achieve all organisations' goals in HRM Department.
- The strategic positioning of Health and Safety directly promotes Companies business goals and objectives, and thereby enhancing Companies performance. Health and Safety research exposed that HR's role is to establish and implement a high-level roadmap for strategic Health and Safety Management in PMC in Nagpur Region.
- PMC in Nagpur Region must attention on constant learning and Awareness trainings program about Health and Safety in working places for employees. PMC Administrators should be involved in policy decisions for Health and Safety training. Good Health and Safety training must provide opportunities to learn and grow all employees Health and Safety Performance.

7) CONCLUSIONS

Conclusion Established on investigation findings and discussion, it can be decided that

- Health and Safety practices have significant effect on employees Health and Safety performance in PMC in Nagpur Region.
- Effective Health and Safety policy can be a crucial factor for employees and Organizations. Strong and consistent leadership with the successful implementation of Health and Safety practices in HRM Department of the company has dominant effect in determining the performance of employees in PMC in Nagpur Region.
- Employees Health and Safety improvement programs are use training that have been planned for the PMC in Nagpur Region within the framework of HRM practices could be work well if Managers and Management can be able to support it.
- The division based Health and Safety training programs aimed by external professionals are useful to some scope but they are unaware of the internal environment, culture type of leadership, methodology of working. Hence a mix of internal & external trainers is essential for Health and Safety training programs in PMC in Nagpur Region.

8) SCOPE FOR FUTURE RESEARCH / RESEARCH IMPLICATION

- The scope this study is limited to PMC in Nagpur Region only, so the same study can be undertaken in other Organizations in India and the inference can be compared. Also find that the Health and Safety Practice is growing by **4.5 %** per year, so the scope of Health and Safety practice in PMC in Nagpur Region will also increase by the same percentage.
- As there was a time bound in the research work and so survey was conducted over 100 respondents only in PMC in Nagpur Region. During the survey the employees were non-cooperative for finishing the questionnaire. The study is based on the Primary data & Secondary data in PMC in Nagpur Region.
- This learning has much possibility for upcoming research. The area of study can be extended and number of respondents can also be increased to arrive at a more realistic conclusion regarding the Health and Safety practices in PMC in Nagpur Region.

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ANALYSING THE EFFECT OF AUTOMATION IN PRODUCTION PLANNING AND QUALITY
MANAGEMENT IN THE MIDC AREA, NAGPUR

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1) ABSTRACT

Automation of activities can permit businesses to improve performance, by reducing errors and improving quality and speed, and in some cases achieving outcomes that go beyond human capabilities. Automation also contributes to productivity, as it has done historically. At a time of boring productivity growth, this would give a needed boost to economic growth and prosperity and help offset the impact of a declining share of the working-age population in many countries. Automation now has the potential to change the daily work activities of everyone, from miners and landscape gardeners to commercial bankers, fashion designers, welders and CEOs. India has made significant progress in various spheres of science and technology over the years and can now take pride in having a strong network of S&T institutions, trained manpower and an innovative knowledge base. While India's technical talent is recognized world over, there have been serious institutional gaps in promoting industry research institutions interaction.

This report takes a critical look at the Indian manufacturing sector with respect to the technology and scientific resource availability. Critical high growth manufacturing sectors like food processing, auto components, pharmaceuticals, light engineering etc., have been profiled. The modern technology position, technology growth creativities and upcoming requirements have been recognized to propel Indian manufacturing industry attain high development rates. Manufacturing jobs are perfect for workers transitioning out of agriculture as facility jobs want high level of education and professionalism.

Keywords: *Improve Performance, Reducing Errors, Improving Quality and Speed, High Growth Manufacturing.*

2) INTRODUCTION OF AUTOMATION, PRODUCTION PLANNING & QUALITY MANAGEMENT:

The word 'Automation' is subsequent from Greek words "Auto" (self) and "Matos" (moving). Automation consequently is the mechanism for schemes that "move by it". However, separately from this unique sense of the term, automated systems also attain significantly greater performance than what is likely with manual arrangements, in terms of power, precision and speed of procedure.

2.1) Definitions of Automation, Production Planning & Quality Management:

Automation is a set of technologies that results in operation of machines and systems without significant human intervention and achieves performance superior to manual operation.

Production Planning is a managerial function which is mainly concerned with two main important aspects: (i) routing or planning work tasks (ii) layout or spatial relationship between the resources. Production planning is dynamic in nature and always remains in fluid state as plans may have to be changed according to the changes in circumstances.

Quality Management can enhance customer satisfaction with a business's products and services through solid oversight of all associated and necessary tasks and activities.

2.2) INDUSTRIAL AUTOMATION

Industrial Automation makes extensive use of Information Technology. Industrial Automation also includes important quantity of hardware technologies, connected to Instrumentation and Identifying, Actuation and Determinations, Electronics for Indication Conditioning, Communication and Display, Entrenched as well as Stand-alone Computing Schemes etc. As Industrial Automation schemes develop more sophisticated in terms of the information and algorithms they use, as they encompass larger areas of operation comprising several units or the whole of a factory, or even several of them, and as they integrate manufacturing with other areas of business, such as, sales and customer care, finance and the entire supply chain of the business, the practice of IT grows histrionically.

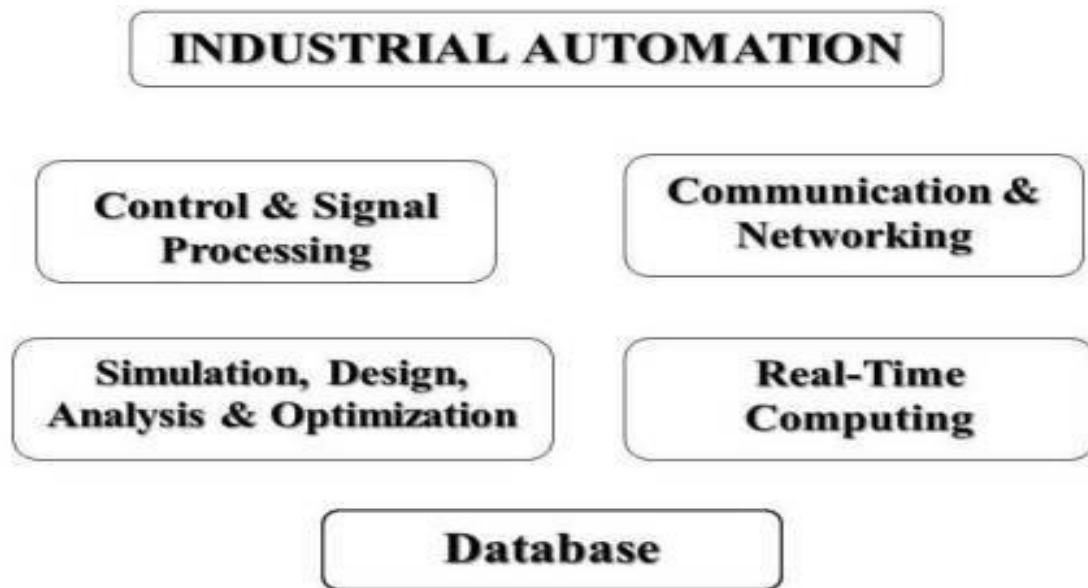


Fig 2.1: The major IT areas that are used in the context of Industrial Automation

2.3) ROLE OF AUTOMATION IN INDUSTRY

- Manufacturing procedures, essentially, produce complete product from raw/unfinished material using energy, manpower and tools and infrastructure.
- Since an industry is essentially a “systematic economic activity”, the fundamental objective of any industry is to make profit.
- Roughly speaking, $\text{Return} = (\text{Price/unit} - \text{Cost/unit}) \times \text{Production Quantity}$

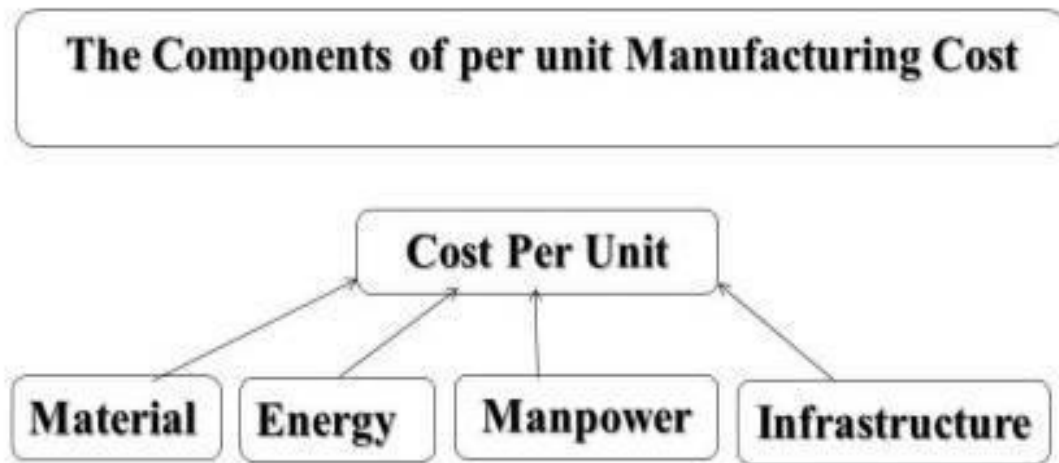


Fig 2.2: The Components of per unit Manufacturing Cost

Automation disturbs all of these issues. Firstly, automated machines have meaningfully lower manufacture periods. For example, in machine tools, manufacturing a variety of parts, significant setup times are needed for setting the operational configuration and parameters whenever a new part is loaded into the machine. This can lead to significant unproductive for expensive machines when a variety of products is manufactured. In Computer Numerically Controlled Machining Centers set up time is reduced significantly with the help of Automated Tool Changers, Automatic Control of Machines from a Part Program loaded in the machine computer. The consequent increase in actual metal cutting time results in reduced capital cost and an increased volume of production.

TYPES OF AUTOMATION PRODUCTION SYSTEMS

FIXED AUTOMATION:

Fixed Automation is a system in which the sequence of processing operations is fixed by the equipment configuration. The operations in the sequence are usually simple. It is the integration and coordination of many

such operations into one piece of equipment that makes the system complex. The typical features of fixed automation are:

- High initial investment for custom-engineered equipment
- High production rates
- Relatively inflexible in accommodating product changes

The financial explanation for fixed automation is established in products with very high request amounts and capacities. The high initial cost of the equipment can be spread over a very large number of units, thus making the unit cost attractive compared to alternative methods of production.

PROGRAMMABLE AUTOMATION:

Now programmable automation, the production tools is designed with the ability to alteration the order of operations to accommodate changed product outlines. The operation sequence is controlled by a program, which is a set of instructions coded so that the system can read and interpret them. Innovative programs can be ready and arrived into the tools to produce new products. Some of the features that characterize programmable automation include:

- High investment in general-purpose equipment
- Low production rates comparative to fixed automation
- Flexibility to deal with changes in product configuration
- Most suitable for batch production

FLEXIBLE AUTOMATION:

Flexible automation is an extension of programmable automation. The concept of flexible automation has developed only over the last 15 to 20 years, and the principles are still evolving. A flexible automated scheme is one that is accomplished of creating a range of products with almost no time lost for changeovers from one product to the next. There is no production time lost while reprogramming the system and altering the physical setup. Consequently, the system can produce various combinations and schedules of products, instead of requiring that they be made in separate batches.

- High investment for a custom-engineered system
- Nonstop manufacturing of variable combinations of goods
- Medium production rates
- Flexibility to deal with product design variations

REASONS FOR AUTOMATING

1. **Increased productivity:** Automation of manufacturing operations holds the promise of increasing the productivity of labour. This means greater output per hour of labour input. Higher production rates are achieved with automation than with the corresponding manual operations.
2. **High cost of labour:** The trend in the industrialized societies of the world has been toward ever-increasing labour costs. As a outcome greater investment in automated equipment has convert economically acceptable to change manual operations. The extraordinary cost of labour is making business leaders to substitute machines for human workforce. Because machines can produce at higher rates of output, the use of automation results in a lower cost per unit of product.
3. **Labour shortages:** In many advanced nations there has been a general shortage of labour. Labour shortages also stimulate the development of automation as a substitute for labour.
4. **Trend of labour toward the service sector:** This trend has been especially prevalent in the advanced countries. First around 1986, the proportion of the work force employed in manufacturing stands at about 20%. In 1947, this percentage was 30%. By the year 2000, some estimates put the figure as low as 2%, certainly, automation of production jobs has caused some of this shift.
5. **Safety:** By programing the procedure and moving the operator from a dynamic contribution to a superintendent role, work is complete safer. The safety and physical wellbeing of the worker has become a national objective with the enactment of the Occupational Safety and Health Act of 1970. It has also provided an impetus for automation.

6. **High price of raw materials:** The high price of raw materials in manufacturing outcomes in the requirement for bigger competence in using these materials. The reduction of scrap is one of the welfares of automation.
7. **Improved product quality:** Automated operations not only produce parts at faster rates than do their manual counterparts, but they produce parts with greater consistency and conformity to quality specifications.
8. **Reduced manufacturing principal period:** For reasons that we shall inspect in sub sequent sections, automation permits the manufacturer to decrease the time between client order and product distribution. This gives the manufacturer a competitive advantage in promoting good customer service.
9. **Decrease of in-process inventory:** Holding large inventories of work-in-process represents a significant cost to the manufacturer because it ties up capital. In- process inventory is of no value. It serves none of the purposes of raw materials stock or finished product inventory. Accordingly, it is to the manufacturer's advantage to reduce work-in progress to a minimum. Automation tends to accomplish this goal by reducing the time a work part spends in the factory.
10. **High price of not automating:** An important modest benefit is increased by automating a manufacturing plant. The benefit cannot easily be established on a company's plan approval form. The benefits of automation often show up in intangible and unexpected ways, such as improved quality, higher sales, better labour relations, and better company image.

3) LITERATURE REVIEW

This reviews existing literature on Automation in Production planning and Quality Management. This involves review of theoretical aspects related to this study.

Konstanty Szlag, (2020), the automation of production is an important element in the functioning of any production enterprise. The purpose of this article is to analyze the quality of the product complete manually with the use of spot-welding machineries and to analyze the excellence of the product. Throughout the analysis, the effect of production automation on the product superiority was found. Requests of the robotized welding procedure are used not only because of improved quality limits, but also because of the important decrease of production charges and less fatigue of employees. The robot operator is a excellence supervisor and donates to quality management.

Torben Lucht, (2021), the on-going digitization of production has led to a significant increase in global competition. Manufacturing companies located in high-wage countries such as Germany must find ways to transform their production to economically competitive technologies. Automation is seen as a suitable method for reducing process costs in the manufacturing industry. Especially the automation of production planning and control (PPC) is a major challenge for companies.

Alison Fang, (2023), manufacturing industries, automation technologies is increasingly being developed and implemented for their ability to optimize processes to achieve higher efficiency and productivity. They can increase production volume while ensuring uniform output and, after an initial capital investment, can cost less to operate than an equivalent human workforce.

Deepika C, (2024), this paper explores the role of automation in production systems within the mechanical engineering sector, focusing on its impact on efficiency, cost reduction, product quality, and scalability. It discusses the history and key concepts of automation, various technologies involved and global trends influencing adoption. The paper also observes the profits and challenges of automation

4) RESEARCH OBJECTIVES

The following are the Main Objectives:

4. To study and understand the concept of Automation in Production Planning and Quality Management.
5. To study the role of Automation in Production Planning and Quality Management at Manufacturing Companies in MIDC Area, Nagpur.
6. To study the affecting factors of Automation in Production planning and Quality Management at Manufacturing Companies in MIDC Area, Nagpur.
7. To measure and analyzing the overall performance of employees through the Automation in Production planning and Quality Management at Manufacturing Companies in MIDC Area, Nagpur.

5) RESEARCH METHODOLOGY

In execution of analysis, data collected from 01/01/2025 to 31/10/2025 are used.

- **Research Area:** MIDC Area, Nagpur.
- **Manufacturing Companies Names:** Bajaj Steel Industries Ltd, Sharda Shree Ispat Limited, Jayswal Neco Ltd, Ferro Alloys Corporation Ltd, Eros Metal Works Pvt.
- **Research Instrument:** Individual Meeting
- **Investigation Plan:** Descriptive
- **Data Type:** Primary & Secondary records
- **Connection Technique:** Companies Records Survey, By Phone, Personal Meeting
- **Total Population:** 8000 Employee's
- **Sample size:** 100 Employee's
- **Sampling Technique:** Random Sampling Technique
- **Analysis Tools:** Percentage Analysis with Likert Rating Scale 1-5

6) RESULTS AND DISCUSSIONS:

Affecting factors of Automation in Production Planning & Quality Management at Manufacturing Companies:

- **Productivity Growth:** A
- **Labour Cost:** B
- **Safety of Labour:** C
- **Product Quality:** D
- **Production Lead Time:** E
- **Labour Shortages:** F
- **Reduction of In-process Inventory:** G
- **Reduction of Production Cost:** H

Table1.1 Average Score against 5 Point Scale

Options	Options Rating	Satisfaction Score level	Assigned Score
1	Always/Strongly Agree/ Outstanding	80% -100%	5 means = 1.00
2	Agree / Often / Very good	60% - 80%	4 means = 0.80
3	Neutral / Occasionally / Good	40% - 60%	3 means = 0.60
4	Rarely/Disagree/Below Agree	20% - 40%	2 means = 0.40
5	Never / Strongly Disagree	00% - 20%	1 means = 0.20

Responses of Automation in Production Planning									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	121	130	150	148	136	128	147	133	1093
AVG	1.21	1.30	1.50	1.48	1.36	1.28	1.47	1.33	1.3663

Responses of Automation in Quality Management									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	125	135	144	139	150	147	129	148	1117
AVG	1.25	1.35	1.44	1.39	1.50	1.47	1.29	1.48	1.3963

Responses of Automation in Performance of Employees									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	130	136	145	153	157	136	139	150	1146
AVG	1.30	1.36	1.45	1.53	1.57	1.36	1.39	1.50	1.4325

Responses of Manufacturing Companies Growth									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	129	134	156	148	136	132	137	146	1118
AVG	1.29	1.34	1.56	1.48	1.36	1.32	1.37	1.46	1.3975

Responses of Automation Strategy Analysis									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	133	138	146	149	150	153	138	134	1141
AVG	1.33	1.38	1.46	1.49	1.50	1.53	1.38	1.34	1.4263

SAMP LE	Automation in Production Planning		Automation in Quality Management		Automation in Performance of Employees		Manufacturin g Companies Growth		Automation Strategy Analysis		Weightag e
NO 01 TO 100	A	121	A	125	A	130	A	129	A	133	638
	B	130	B	135	B	136	B	134	B	138	673
	C	150	C	144	C	145	C	156	C	146	741
	D	148	D	139	D	153	D	148	D	149	737
	E	136	E	150	E	157	E	136	E	150	729
	F	128	F	147	F	136	F	132	F	153	696
	G	147	G	129	G	139	G	137	G	138	690
	H	133	H	148	H	150	H	146	H	134	711
SUM	1093		1117		1146		1118		1141		5615
Mean Value	136.625		139.625		143.25		139.75		142.625		1.40375

Table 1.2 Results of overall performance of Automation in Production Planning & Quality Management at Manufacturing Companies in MIDC Area, Nagpur.

Employees Performance and Efficiency Improvements for all affecting factors	Avg Score Against 5 Point Scale	% of Performance Progresses	% of Performance till not Improvements
Automation in Production Planning	1.3663	72.674%	27.326%
Automation in Quality Management	1.3963	72.074%	27.926%
Automation in Performance of Employees	1.4325	71.35%	28.65%
Manufacturing Companies Growth	1.3975	72.05%	27.95%
Automation Strategy Analysis	1.4263	71.474%	28.526%
Avg %	71.93%		28.07%
Performance	Very good (60% - 80% achievement)		

Parameters (Variables)	Weightage	Resp. Avg. (500)	% of Performance in Improvements	% of Performance not Improvements
A = Productivity Growth	638	1.276	74.48%	25.52%
B = Labour Cost	673	1.346	73.08%	26.92%
C = Safety of Labour	741	1.482	70.36%	29.64%
D = Product Quality	737	1.474	70.52%	29.48%
E = Production Lead Time	729	1.458	70.84%	29.16%
F = Labour Shortages	696	1.392	72.16%	27.84%
G = Reduction of In-process Inventory	690	1.38	72.40%	27.60%

H= Reduction of Production Cost	711	1.422	71.56%	28.44%
% of Average Performance			71.925%	28.075%

7) CONCLUSIONS:

- ❖ Analysis table's authorization about overall performance of Automation in Production Planning & Quality Management Performance Improvements is Compulsory of all Steel Manufacturing Companies in Nagpur Region. Without decreasing average **28.075%** of affecting factors they cannot achieve all organisations' goals in HRM Department.
- ❖ The automation of production planning and control is an important instrument for increasing efficiency in the manufacturing industry. The evidence supporting the argument that automation increases productivity, helps to address population aging and labour shortage, and improves work place health & safety cannot be ignored.
- ❖ While there might be short-term negative social impact, stopping or scaling back automation or robotics is not the answer. A company, business or country runs the risk of losing effectiveness overall should the development of automation be halted. It is therefore paramount that the collaboration between governments and industries make this transition safe and beneficial for all.
- ❖ The basis for the operation of a production enterprise today is to satisfy the needs of customers at the lowest possible price. To find a respectable quality product at a low price, the company must invest in new and better-quality production technologies.

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AN EVALUATION OF PERFORMANCE STRATEGIES IMPLEMENTED BY MUTUAL FUND MANAGERS IN VARIOUS INDIAN MUTUAL FUNDS

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1) ABSTRACT:

Investors and investment managers need timely and accurate information on the performance of their investment portfolios. Performance evaluation provides such information. Without it, investors and investment managers would find it increasingly difficult to meet stakeholders' current and future needs in a very competitive investment management industry. In the investment management industry, performance evaluation broadly refers to the measurement, analysis, interpretation, assessment, and presentation of investment results. In specific, performance estimation delivers information about the profit and risk of investment portfolios over definite times. Choice of investment managers is a thoroughly connected topic. By providing accurate data and analysis on investment decisions and their consequences, performance evaluation allows investment managers (and the portfolio managers they employ) to take corrective measures to improve investment decision-making and management processes.

Performance estimation information helps in considerate and regulatory investment risk and must, therefore, lead to better risk management. For asset owners and prospective clients, performance evaluation communicates portfolio managers' results. Approximately, it permits asset owners and potential clients to make superior choices (including selection, continuation, and dismissal) about investment managers by in case relevant information on performance and its drivers. Accurate performance presentations are especially important for asset owners and prospective clients in facilitating accurate analysis. Performance evaluation in its feedback role may have a large impact on investment managers, asset owners, and other stakeholders.

Keywords: Investors, Investment Managers, Risk Management, Performance Evaluation, Feedback Role.

2) INTRODUCTION OF MUTUAL FUNDS

A mutual fund is set up in the form of trust, which has sponsors, trustees, Asset Management Company (AMC) and custodians. The belief is recognized by a sponsor or more than one sponsor who is like the promoter of a firm. The trustees of the mutual fund hold its property for the advantage of the unit holders.

Mutual funds as Trusts:

The mutual fund in India is constituted in the form of a Public Trust created under the Indian Trusts Act, 1882. The fund sponsor acts as the Settler of the Trust, contributing to its initial capital, and appoints a Trustee to hold the assets of the Trust for the advantage of the unit holders, who are the receivers of the Faith.

The fund Sponsor:

"Sponsor" is clear under SEBI guidelines as any individual who, performing alone or in mixture with additional body corporate, forms a mutual fund. The sponsor of a fund is similar to the organizer of a company as he gets the fund listed with SEBI. The sponsor will form a Trust and appoint a Board of Trustees. The sponsor will also generally appoint an Asset Management Company as fund managers. The sponsor, whichever directly or performing through the Trustees, will also employ a custodian to grip the fund resources.

3) LITERATURE REVIEW

A literature review is a frame of manuscript that purposes to review the serious points of current knowledge on particular topics.

Rajesh R. Duggimpudi, Hussein A. Abdou & Mohamed Zaki, (2010), the mutual funds industry grew successfully and brought about substantial returns to the investors and the public sector. The principal goal of this paper is to assess the performance of Indian equity differentiated mutual funds. A secondary goal is to examine the relationship between risk and profit of these funds based on total risk and efficient risk. The assessment trusts on three methods, namely, the Treynor, the Sharp and the Jensen methods.

Kalpesh P Prajapati & Mahesh K Patel, (2012), In this paper the performance evaluation of Indian mutual funds is carried out through relative performance index, risk-return analysis, Treynor's ratio, Sharp's ratio, Sharp's measure, Jensen's measure, and Fama's measure. The data used is daily closing NAVs. The source of data is website of Association of Mutual Funds in India.

Naila Iqbal, (2013), there is many challenges facing mutual fund industry which is of prime concern to the people who have an investment spree. People find mutual fund investments so much interesting because they think they can gain high rate of return by diversifying their investment and risk. But, in realism this possibility of high rate of earnings is just one side of the coin. On the other side, there is the harsh reality of highly fluctuating rate of returns.

Prakash Sivaraman & C. Sundar (2014), Mutual funds are an integral part of the stock market, which have become an investment avenue for a large number of investors in recent years. There are a number of investment opportunities available to an investor. Each of these investments has its own risk and return features. The present study was conducted to evaluate and compare the performance of equity mutual fund schemes of selected companies.

Aashka Thakkar, (2015), Today the Indian mutual fund industry is considered as one of the major and prominent player in the Capital Market. Mutual fund existence a long term investment opportunity is still moderately new for mainstream of Indian investors. The rate of savings in India is above 32% which is the second highest in the World after China. But still the Indian investors prefer Bank deposits, Post Office savings, and investment in physical assets like Gold and Real Estate. Also the paper will also concentrate on the available opportunities which the industry can focus to get more investors' attention, which in turn will increase the investment in mutual funds.

Nilesh & Dipsh Dhanda, (2017), Mutual funds offer benefit of diversification of risk to investors. Individual investors may not have the time and professional competence for analysing risk and return across sectors and companies. Diversification involves the mixing of investments within a portfolio to manage risk. Investing and liquidating investment process is quite easy in case of mutual funds. Funds collected through different schemes by fund managers are invested in equity and debt market for the corporate sector which leads to pooling of investment and capital formation in the country.

4) RESEARCH OBJECTIVES

The following are the Main Objectives:

- 1) To study the concept of various Mutual Fund Schemes in India.
- 2) To analyses the performance of various Mutual Fund Schemes in India.
- 3) To measure and analyses the performance and evaluation strategies adopted by Mutual Fund Managers in various Mutual Fund Schemes in India.

5) RESEARCH METHODOLOGY

In carrying out analysis data collected from **2020 - 2025** are used.

Types : Empirical

Research Design : Descriptive

Data Type: Secondary data

Contact Method : Company Records Survey,

Data Analysis Method : Standard Deviation, Beta, Sharpe Ratio Method.

Mutual Fund Schemes : Mid Cap, Large Cap, Small Cap.

Fund Manager Name: Tejas Sheth, Vinit Sambre, Trideep Bhattacharya, R. Srinivasan, Chandraprakash Padiyar,

6) RESULTS AND DISCUSSIONS:

Performance and Evaluation Strategies Adopted by Mutual Fund Managers in an Indian Mutual Fund Industry: Period 2020-2025 (5 Years)

COMPARISION OF SELECTED MUTUAL FUND BASED ON VARIOUS PARAMETERS					
AMC NAME	Axis Small Cap Fund-Reg(G)	DSP Small Cap Fund-Reg(G)	Edelweiss Small Cap Fund-Reg(G)	SBI Small Cap Fund-Reg(G)	Tata Small Cap Fund-Reg(G)
Fund Manager	Tejas Sheth	Vinit Sambre	Trideep Bhattacharya	R. Srinivasan	Chandraprakash Padiyar

Mutual Fund-Category	Equity : Small Cap	Equity : Small Cap	Equity : Small Cap	Equity : Small Cap	Equity : Small Cap
Asset Under Management	AUM: ₹ 23,317.93 (cr.)	AUM: ₹ 14,258.03 (cr.)	AUM: ₹ 4,237.19 (cr.)	AUM: ₹ 31,790.25 (cr.)	AUM: ₹ 9,417.80 (cr.)

SMALL CAP FUND BASIC DETAILS:

Exp Ratio (%)	1.61	1.73	1.83	1.58	1.71
Exit Load (%)	1	1	1	1	1
Exit Load Remarks	Nil for 10% of investments and 1% for remaining investments on or before 12M Nil after 12M	1% before 12M Nil on or after 12M	1% on or before 90D Nil after 90D	1% on or before 1Y Nil after 1Y	Nil up to 12% of original cost of investments and 1% for more than 12% on or before 12M Nil after 12M
Lock-in Period (Years)	0	0	0	0	0
Inception Date	29-Nov-13	14-Jun-07	07-Feb-19	09-Sep-09	12-Nov-18
Min. Investment (in ₹)	100	100	100	5,000	5,000
Benchmark Index	Nifty Smallcap 250 - TRI	BSE 250 Small Cap – TRI	Nifty Smallcap 250 - TRI	BSE 250 Small Cap - TRI	Nifty Smallcap 250 – TRI

7) FINDINGS: RETURN (%)

6 month	-2.12	-2.72	-6.13	-5.34	-8.54
1 yr	11.7	13.82	8.36	3.94	8.26
2 yr	23.44	26.07	25.15	19.74	23.67
3 yr	22.41	23.11	24.31	19.59	24.95
5 yr	31.8	35.07	34.95	30.74	35.68
10 yr	18.32	16.84	-	18.82	-

MF RATIOS

Standard Deviation	14.56	17.48	16.47	15.1	16.19
Beta	0.73	0.88	0.83	0.76	0.79
Sharpe	0.27	0.22	0.28	0.23	0.28
Sortino	0.51	0.4	0.52	0.42	0.51
Alpha	0.13	-0.11	0.15	-0.06	0.22

PORTFOLIO ATTRIBUTES

Portfolio P/B Ratio	7.11	5.03	7.62	6.33	4.77
Portfolio P/E Ratio	50.11	35.75	49.86	40.75	40.69
Turnover Ratio (%)	35	24	16	81	10.58

PORTFOLIO MARKET CAP

Avg. Market Cap (₹ cr)	20,346.17	8,305.90	20,636.05	11,938.08	7,959.59
Large (%)	3.97	-	3.39	-	-
Mid (%)	22.28	5.08	32.34	6.49	11.38
Small (%)	60.5	87.75	60.66	73.24	79.4

Rolling Return Statistics - 5 Year

			Return Statistics (%)			Return Distribution (% of times)		
Fund Name	Average	Maximum	Minimum	Less than 0%	0 – 10 %	10 – 20 %	20 – 30 %	More than 30%
Axis Small Cap Fund-Reg (G)	27.05	33.26	21.07	0	0	0	93.75	6.25
DSP Small Cap Fund-Reg (G)	28.19	36.48	22.58	0	0	0	58.33	41.67
Edelweiss Small Cap Fund-Reg(G)	30.77	38.3	25.32	0	0	0	48.96	51.04
SBI Small Cap Fund-Reg (G)	26.51	33.13	21.33	0	0	0	86.46	13.54
Tata Small Cap Fund-Reg (G)	30.06	38.88	24.21	0	0	0	52.08	47.92

COMPARISION OF SELECTED MUTUAL FUND BASED ON VARIOUS PARAMETERS

AMC NAME	Axis Bluechip Fund-Reg(G)	DSP Large Cap Fund-Reg(G)	Edelweiss Large Cap Fund-Reg(G)	SBI BlueChip Fund-Reg(G)	Tata Large Cap Fund-Reg(G)
Fund Manager	Shreyash Devalkar	Abhishek Singh	Bharat Lahoti	Saurabh Pant	Abhinav Sharma
Mutual Fund-Category	Equity : Large Cap	Equity : Large Cap	Equity : Large Cap	Equity : Large Cap	Equity : Large Cap
Asset Under Management	AUM: ₹ 33,218.10 (cr.)	AUM: ₹ 5,610.99 (cr.)	AUM: ₹ 1,228.80 (cr.)	AUM: ₹ 51,010.20 (cr.)	AUM: ₹ 2,538.98 (cr.)

LARGE CAP FUND BASIC DETAILS:

Exp Ratio (%)	1.58	1.68	1.7	1.67	1.88
Exit Load (%)	1	1	1	1	1
Exit Load Remarks	Nil for 10% of investments and 1% for remaining investments on or before 12M Nil after 12M	1% before 12M Nil on or after 12M	1% on or before 90D Nil after 90D	1% on or before 1Y Nil after 1Y	Nil up to 12% of investments and 1% for remaining investments on or before 365D Nil after 365D
Lock-in Period (Years)	0	0	0	0	0
Inception Date	18-Feb-11	14-Nov-06	26-Dec-07	29-Mar-05	01-Jul-94

Min. Investment (in ₹)	100	100	100	5,000	5,000
Benchmark Index	BSE 150 Mid Cap - TRI	Nifty Midcap 150 - TRI	Nifty Midcap 150 - TRI	Nifty Midcap 150 - TRI	Nifty Midcap 150 - TRI
NAV IN Rs.	109.7	143.07	97.46	233.07	413.38
52 Weeks high	117.71	153.74	103.98	251.01	460.19
52 Weeks low	94.32	120.64	80.08	205.35	360.71

RETURN (%)

6 month	0.11	-1.27	-1.46	0.54	-2.92
1 yr	8.83	8.08	15.56	7.8	1.09
2 yr	24.64	26.42	32.99	21.85	25.63
3 yr	21.61	21.39	28.79	21.2	23.21
5 yr	25.47	23.29	34.03	31.86	28.26
10 yr	15.63	15.11	17.72	14.82	14.95

MF RATIOS

Standard Deviation	15.2	16.36	16.75	14.09	15.05
Beta	0.88	0.95	0.98	0.8	0.88
Sharpe	0.26	0.24	0.34	0.27	0.3
Sortino	0.5	0.48	0.69	0.58	0.61
Alpha	-0.18	-0.34	0.13	-0.14	-0.07

PORTFOLIO ATTRIBUTES

Portfolio P/B Ratio	10.61	7.56	11.27	10.61	6.6
Portfolio P/E Ratio	58.01	46.45	61.84	51.97	50.32
Turnover Ratio (%)	42	37	51	59	30.87

PORTFOLIO MARKET CAP

Avg. Market Cap (₹ cr)	68,329.88	46,900.21	61,083.18	52,354.10	48,389.94
Large (%)	23.52	10.56	26.35	16.47	10.72
Mid (%)	62.04	66.12	59.04	65.14	63.99
Small (%)	4.39	16.7	11.17	13.08	16.53

Rolling Return Statistics - 5 Year

Return Statistics (%)				Return Distribution (% of times)				
Fund Name	Average	Maximum	Minimum	Less than 0%	0 – 10 %	10 – 20 %	20 – 30 %	More than 30%
Axis Blue chip Fund-Reg(G)	13.46	21.01	4.49	0	11.91	85.57	2.51	0
DSP Large Cap Fund-Reg(G)	9.91	26.24	-2.2	0.77	49.95	48.96	0.33	0
Edelweiss Large Cap Fund-Reg(G)	12.58	25.32	0.19	0	17.16	81.97	0.87	0
SBI Blue Chip Fund-	11.95	26.29	-0.41	0.22	20.22	79.23	0.33	0

Reg(G)								
Tata Large Cap Fund-Reg(G)	11.18	26.08	-1.64	0.66	27.65	71.37	0.33	0

MID CAP FUND BASIC DETAILS:

Expense Ratio (%)	1.58	1.68	1.7	1.67	1.88
Exit Load (%)	1	1	1	1	1
Exit Load Remarks	Nil for 10% of investments and 1% for remaining investments on or before 12M Nil after 12M	1% before 12M Nil on or after 12M	1% on or before 90D Nil after 90D	1% on or before 1Y Nil after 1Y	Nil up to 12% of investments and 1% for remaining investments on or before 365D Nil after 365D
Lock-in Period (Years)	0	0	0	0	0
Inception Date	18-Feb-11	14-Nov-06	26-Dec-07	29-Mar-05	01-Jul-94
Min. Invest (in ₹)	100	100	100	5,000	5,000
Benchmark Index	BSE 150 Mid Cap - TRI	Nifty Midcap 150 – TRI	Nifty Midcap 150 - TRI	Nifty Midcap 150 - TRI	Nifty Midcap 150 - TRI
NAV IN Rs.	109.7	143.07	97.46	233.07	413.38
52 Weeks high	117.71	153.74	103.98	251.01	460.19
52 Weeks low	94.32	120.64	80.08	205.35	360.71

COMPARISION OF SELECTED MUTUAL FUND BASED ON VARIOUS PARAMETERS

AMC NAME	Axis Midcap Fund-Reg(G)	DSP Midcap Fund-Reg(G)	Edelweiss Mid Cap Fund-Reg(G)	SBI Magnum Midcap Fund-Reg(G)	Tata Mid Cap Growth Fund-Reg(G)
Fund Manager	Shreyash Devalkar	Vinit Sambre	Trideep Bhattacharya	Bhavin Vithlani	Satish Chandra Mishra
Mutual Fund-Category	Equity : Mid Cap	Equity : Mid Cap	Equity : Mid Cap	Equity : Mid Cap	Equity : Mid Cap
Asset Under Management	AUM: ₹ 28,809.45 (cr.)	AUM: ₹ 17,657.92 (cr.)	AUM: ₹ 9,241.96 (cr.)	AUM: ₹ 21,512.11 (cr.)	AUM: ₹ 4,505.38 (cr.)

RETURN (%)

6 month	0.11	-1.27	-1.46	0.54	-2.92
1 yr	8.83	8.08	15.56	7.8	1.09
2 yr	24.64	26.42	32.99	21.85	25.63
3 yr	21.61	21.39	28.79	21.2	23.21
5 yr	25.47	23.29	34.03	31.86	28.26
10 yr	15.63	15.11	17.72	14.82	14.95

MF RATIOS

Standard Deviation	15.2	16.36	16.75	14.09	15.05
Beta	0.88	0.95	0.98	0.8	0.88
Sharpe	0.26	0.24	0.34	0.27	0.3
Sortino	0.5	0.48	0.69	0.58	0.61
Alpha	-0.18	-0.34	0.13	-0.14	-0.07

PORTFOLIO ATTRIBUTES

Portfolio P/B Ratio	10.61	7.56	11.27	10.61	6.6
Portfolio P/E Ratio	58.01	46.45	61.84	51.97	50.32
Turnover Ratio (%)	42	37	51	59	30.87

PORTFOLIO MARKET CAP

Avg. Market Cap (₹ cr)	68,329.88	46,900.21	61,083.18	52,354.10	48,389.94
Large (%)	23.52	10.56	26.35	16.47	10.72
Mid (%)	62.04	66.12	59.04	65.14	63.99
Small (%)	4.39	16.7	11.17	13.08	16.53

Rolling Return Statistics - 5 Year

Return Statistics (%)				Return Distribution (% of times)				
Fund Name	Average	Maximum	Minimum	Less than 0%	0 – 10 %	10 – 20 %	20 – 30 %	More than 30%
Axis Midcap Fund-Reg. (G)	16.95	27.25	4.57	0	11.1	64.37	24.53	0
DSP Midcap Fund-Reg.(G)	13.72	25.81	3.11	0	26.3	65.48	8.21	0
Edelweiss Mid Cap Fund-Reg.(G)	16.14	37.01	-0.08	0.11	17.09	60.27	17.98	4.55
SBI Magnum Midcap Fund-Reg.(G)	13.85	35.12	-2.64	2.66	18.76	58.38	19.53	0.67
Tata Mid Cap Growth Fund-Reg(G)	14.84	31.28	-0.15	0.11	18.65	61.6	19.53	0.11

8) CONCLUSION & RECOMMENDATIONS

SMALL CAP FUND

- 1. Best for Growth:** Tata Small Cap Fund (highest 5Y returns, low turnover, strong alpha).
- 2. Balanced Choice:** Edelweiss Small Cap Fund (best risk-adjusted returns, consistent high-return periods).
- 3. Cost-Efficient:** SBI Small Cap Fund (low expense ratio) but only for long-term holders tolerant of volatility.
- 4. Avoid:** DSP Small Cap Fund due to negative alpha and higher risk without commensurate returns.

Final Conclusion: For aggressive investors, Tata and Edelweiss are top picks. Conservative investors may prefer Axis for its large-cap buffer.

LARGE CAP:

- 1. Best All-Rounder:** DSP Large Cap, High returns (5Y: 22.35%), best Sharpe/Sortino ratios, and reasonable valuations. Suitable for those investors seeking growth with moderate risk.
- 2. Cost-Conservative Choice:** SBI Blue Chip, Low expense ratio (1.5%), decent returns (5Y: 22.33%), and large AUM (₹51,010 cr.). Ideal for long term passive investors.
- 3. Aggressive Investors:** Tata Large Cap, Highest 5Y returns (22.84%) but higher volatility.
- 4. Avoid (For Now):** Axis Blue chip

MID CAP FUND:

- 1. Best for High Growth:** Edelweiss Midcap Fund
- 2. Best for Consistency:** Axis Midcap Fund

3. Best for Low Risk: SBI Magnum Midcap Fund

Edelweiss Mid Cap Fund stands out as the top performer, but Axis Midcap Fund is a strong alternative for consistency. SBI Magnum is best for lower risk, while DSP Midcap lags behind.

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ANALYZING THE IMPACT OF STRATEGIC MANAGEMENT FOR OVERALL PERFORMANCE OF EMPLOYEES ON BUSINESS OUTCOMES

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1) ABSTRACT

Adoption of Strategic Management Practices conceptually enables firms to understand their strategic position and identifying how to make strategic choices for the future and manage strategy in action. Employing strategic management is critical to firm's performance. Strategic management demands efficient systems to counter unpredictable events that can sustain their operations and minimize the risks involved. Theoretical and empirical proof carries the fight that acceptance of greater strategies leads to enhanced organization performance. The purpose of the study was to know whether a Manufacturing Company has been using the Strategic Management for complete performance of Organizational Improvement & overall Employee Career Improvement. Strategic Management creates from strategic planning and as a method for managing all significant features of a company's environment it systematically differs from other management methods that only seek to advance operational efficiency.

Therefore, the empirical research first aimed to determine the influence of systematic use of strategic management, which fits in with prescriptive manufacturing companies in Nagpur for business outcomes. The second purpose was to found the features of consuming strategic management in instruction to advance a company's effectiveness. The empirical research discloses that those companies scientifically relating strategic management attained improved business outcomes than those that did not. To attain a superior result in the use of strategic management, companies should recover in the formulating and evaluating stages of using it.

Keywords: Strategic Management, Organizational Improvement, Employee Career Improvement, Manufacturing Companies, Strategic Planning.

2) INTRODUCTION:

The Concept of Strategy: A course of action, including the specification of resources required, to achieve a specific objective. CIMA Management Accounting: Official Terminology, (2005 edition). **Strategy** is the direction and scope of an organization over the long term and which achieves advantage in a changing environment through its configuration of resources and competences with the aim of fulfilling stakeholder expectations.

Corporate Strategy is the arrangement of major aims, purposes and goals and critical policies or plans for attaining those goals, stated in such a technique as to explain what business the company is in or is to be in and the caring of company it is or is to be.

Strategic Management Process is defined as the technique through which an organization expresses its strategy. It is a nonstop practice in which the business or organization accepts to implement a nominated few strategies, particulars the implementation plan and saves on appraising the growth and success of implementation through consistent assessment.

Common Themes in Strategy:

- ✚ The determination and long-term way of the business;
- ✚ The possibility of an organization's actions and actions mandatory to meet its aims.
- ✚ Meeting the tasks from the firm's business outside environment, such as rivals and the changing requirements of consumers;
- ✚ Meeting the tests from the firm's business outside atmosphere, such as competitors and the altering requirements of consumers;
- ✚ Using the firm's inside resources and capabilities efficiently and construction on its powers to meet environmental tasks;
- ✚ Providing cost to the people who depend on the firm, its stakeholders, such as clients and shareholders, to attain modest benefit.

STRATEGIC MANAGEMENT PROCESS:

- 1) **Goal Setting:** The vision and goals of the any organization are clearly specified. The short-range and long-standing aims are clear, procedures to complete the purposes are identified and current staff is estimated to select skilful people to work on the procedures.
- 2) **Analysis:** Information related to reach the aims of the organization is calm, possible internal and external issues that can interrupt the maintainable development of the organization are detected and SWOT analysis is also implemented.
- 3) **Strategy Formulation:** When the analysis is done, the organization moves to the Strategy Formulation step where the plan to acquire the essential resources is designed, prioritization of the issues opposite the business is done and finally the strategy is formulated consequently.
- 4) **Strategy Implementation:** Afterwards formulation of the strategy, the employees of the business or organization are clearly made aware of their roles and responsibilities. It is confirmed that funds would be available all the time. Then the implementation initiates.
- 5) **Strategy Evaluation:** In this process, the strategies being implemented are assessed regularly to check whether they are on track and are providing the desired outcomes. In case of deviations, the corrective actions are taken.

The Features of Strategic Management are:

- 1) **Top Management Involvement:** Strategic management relates to numerous parts of a firm's processes. So, it requires top management's involvement. Normally, only the top management has the outlook wanted to recognize the broad suggestions of its judgments and the authority to authorize the necessary resource distributions.
- 2) **Requirement of big volumes of resources:** Strategic management needs commitment of the firm to activities over an extended period of time. So they want considerable resources, such as, physical assets, money, manpower etc.
- 3) **Disturb the firm's long-term wealth:** Once a firm has dedicated itself to a specific policy, its image and competitive benefit are tied to that policy; its prosperity is needy upon such a policy for a long period.
- 4) **Future-oriented:** Strategic management includes predictions, what is expected by the managers. In such judgments, emphasis is placed on the expansion of forecasts that will enable the firm to choice the most talented strategic preferences. In the turbulent environment, a firm will succeed only if it receipts a practical stance to change.
- 5) **Multi-functional or multi-business significances:** Strategic management has multifaceted effects for most parts of the firm. They effect numerous strategic business units mainly in areas connecting to customer-mix, modest effort, organisational construction etc. All these parts will be affected by distributions or reorganizations of responsibilities and assets that outcome from these results.
- 6) **Non-self-generative judgments:** While strategic management may contain making judgments comparatively rarely, the organisation must have the readiness to make strategic judgments at any point of time. That is why Ansoffcalls them "non-self-generative selections".

3) LITERATURE REVIEW

This reviews existing literature on strategic management and organization performance. This involves review of theoretical aspects related to the study, empirical studies that relate to strategic management, performance and the research gaps therein.

Wernerfelt, (1984), the idea that strategy of a firm is a function of the complement of the resources held. It argues that a company will be positioned to succeed if it has the best and most appropriate stock of resources relevant for its business and strategy. Therefore strategic management performs will be contingent on firm's assets. The theory defines a firm in terms of the assets that firm mixes. Often, the term resource is incomplete to those characteristics that enhance competence and efficiency of the firm.

Hina Abbas & Sman Babar, (2013), this paper examines the success in corporate sector through strategic management. In recent times world economy has witnessed a lot of dynamism and challenges. The success in corporate sector will depend on management's recognition of the following functions: analyzing the environmental changes, selecting the strategists, helping them to think creatively, setting objectives,

establishing strategies to attain purposes, assign tasks and applying the strategies, determining achievement and estimating outcomes.

Hanasini Athapaththu, (2016), through successfully deploying strategies an organization can realize its mission and the objectives. So the firms should know about strategic planning and strategic management. Strategic planning which requires a great deal of strategic thinking is one of the most important management tool which helps managers to recognize the priorities and determine the main actions necessary to realize the mission and objectives of the organization. Nowadays strategic management has become one of the primary topics in management of organizations because of the dynamic business environment.

Ibrahim Bader Alharbi, (2024), This paper aims to shed light on the evolution of strategic management over time, including definitions, supporting theories, tools, importance, and application in various business settings, and highlight the challenges and upcoming movements of strategic management. In various business settings, and highlight the challenges and future trends of strategic management. This paper employs a methodical analysis design, also known as an impression, which is a complete combination of primary research studies. These approaches are utilized to identify, compile, critically, and synthesize all pertinent issues about the subject.

4) RESEARCH OBJECTIVES

The following are the Main Objectives:

8. To study and understand the concept of Strategic Management.
9. To study the role of Strategic Management for overall performance of employees at Manufacturing Companies in Nagpur.
10. To study the affecting factors of Strategic Management for overall performance of employees at Manufacturing Companies in Nagpur.
11. To measure and analyzing the overall performance of employees through the Strategic Management and Employee Satisfaction at Manufacturing Companies in Nagpur.

5) RESEARCH METHODOLOGY

In execution of analysis, data collected from 01/01/2025 to 31/10/2025 are used.

- **Research Area:** Nagpur Region
- **Manufacturing Companies Names:** Sunflag Iron & Steel Co. Ltd, Sharda Shree Ispat Limited, Jayswal Neco Ltd, Ferro Alloys Corporation Ltd, Eros Metal Works Pvt.
- **Research Instrument:** Individual Meeting
- **Investigation Plan:** Descriptive
- **Data Type:** Primary & Secondary records
- **Connection Technique:** Companies Records Survey, By Phone, Personal Meeting
- **Total Population:** 10000 Employee's in Manufacturing Companies
- **Sample size:** 100 Employee's in Manufacturing Companies
- **Sampling Technique:** Random Sampling Technique
- **Analysis Tools:** Percentage Analysis with Likert Rating Scale 1-5

6) RESULTS AND DISCUSSIONS:

Strategic Management Practices (SMP) Attentions for Employees Performance:

- **Objectives & Requirement for SMP:** A
- **Guideline & Planning for SMP:** B
- **Technical Education & Training of Employees:** C
- **Capacity Growth of Employees:** D
- **Communication between Management & Employees :** E

- Accommodations for Reward to the Employees: F
- Delegate's right with Responsibility: G
- Equal Chance for Employees : H

Options	Options Rating	Satisfaction Score level	Assigned Score
1	Always/Strongly Agree/ Outstanding	80% -100%	5 means = 1.00
2	Agree / Often / Very good	60% - 80%	4 means = 0.80
3	Neutral / Occasionally / Good	40% - 60%	3 means = 0.60
4	Rarely/Disagree/Below Agree	20% - 40%	2 means = 0.40
5	Never / Strongly Disagree	00% - 20%	1 means = 0.20

Table1.1 Average Score against 5 Point Scale

Responses of Goal Setting									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	128	157	136	145	129	150	147	139	1131
AVG	1.28	1.57	1.36	1.45	1.29	1.50	1.47	1.39	1.41375

Responses of Strategy Formulation									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	132	129	144	137	159	134	139	140	1114
AVG	1.32	1.29	1.44	1.37	1.59	1.34	1.39	1.40	1.3925

Responses of Strategy Implementation									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	140	124	135	146	139	141	146	150	1121
AVG	1.40	1.24	1.35	1.46	1.39	1.41	1.46	1.50	1.40125

Responses of Strategy Evaluation									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	125	130	140	138	147	153	157	137	1127
AVG	1.25	1.30	1.40	1.38	1.47	1.53	1.57	1.37	1.40875

Responses of Strategy Analysis									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	136	127	157	126	147	159	136	149	1137
AVG	1.36	1.27	1.57	1.26	1.47	1.59	1.36	1.49	1.42125

	Goal Setting		Strategy Formulation		Strategy Implementation		Strategy Evaluation		Strategy Analysis		Weight age
SAMPLE NO 01 TO 100	A	128	A	132	A	140	A	125	A	136	661
	B	157	B	129	B	124	B	130	B	127	667
	C	136	C	144	C	135	C	140	C	157	712
	D	145	D	137	D	146	D	138	D	126	692
	E	129	E	159	E	139	E	147	E	147	721
	F	150	F	134	F	141	F	153	F	159	737
	G	147	G	139	G	146	G	157	G	136	725
	H	139	H	140	H	150	H	137	H	149	715
SUM	1131		1114		1121		1127		1137		5630
Mean Value	141.375		139.25		140.125		140.875		142.125		140.75

Variables	A	B	C	D	E	F	G	H	Total
Weightage	661	667	712	692	721	737	725	715	5630
Resp. Avg.(500)	1.322	1.334	1.424	1.384	1.442	1.474	1.45	1.43	1.4075

Table 1.2 Results of overall performance of employees through the Strategic Management and Employee Satisfaction at Manufacturing Companies in Nagpur:

	Goal Setting	Strategy Formulation	Strategy Implementation	Strategy Evaluation	Strategy Analysis
Avg Score Against 5 Point Scale	1.41375	1.3925	1.40125	1.40875	1.42125
	71.725%	72.15%	71.975%	71.825%	71.575%
Avg %	71.85% (60% - 80% achievement)				
Performance	Very good				

Employees Performance and Efficiency Improvements for all affecting factors	% of Performance Progresses	% of Performance till not Improvements
Goal Setting	71.725%	28.275%
Strategy Formulation	72.15%	27.85%
Strategy Implementation	71.975%	28.025%
Strategy Evaluation	71.825%	28.175%
Strategy Analysis	71.575%	28.425%

Parameters (Variables)	Weightage	Resp. Avg. (500)	% of Performance in Improvements	% of Performance not Improvements
A = Objectives & Requirement for SMP	661	1.322	73.56%	26.44%
B = Guideline & Planning for SMP	667	1.334	73.32%	26.68%
C = Technical Education and Training of Employees	712	1.424	71.52%	28.48%
D = Capacity Growth of Employees	692	1.384	72.32%	27.68%
E = Communication between Management & Employees	721	1.442	71.16%	28.84%
F = Accommodations for Reward to the Employees	737	1.474	70.52%	29.48%
G = Delegate's right with Responsibility	725	1.45	71.00%	29.00%
H= Equal Chance for Employees	715	1.43	71.40%	28.60%
% of Average Performance			71.85%	28.15%

Results and Discussions: Impact of Strategic Management for overall performance of employees on business outcomes. The Results and Discussions have been drawn from the analysis and data interpretations based.

- Analysis table's authorization about all Strategic Management Performance Improvements is Compulsory of all Manufacturing Companies in Nagpur Region. Without decreasing average **28.15 %** of affecting factors they cannot achieve all Strategic Management & Organisations' Goals in HRM Department.
- The Strategic Management process directly promotes Companies business goals and objectives, and thereby enhancing Companies performance. Strategic Management research exposed that HR's role is to establish and implement a high-level roadmap for Strategic Management in Manufacturing Companies in Nagpur Region.

- Manufacturing Companies in Nagpur Region must attention on constant learning and Awareness trainings program about Strategic Management process in working places for employees. Manufacturing Companies Administrators should be involved in policy decisions for Strategic Management training. Good Strategic Management training must provide opportunities to learn and grow all employees Performance.

7) CONCLUSIONS

Conclusion based on examination of findings and discussion:

- Each organization grips its strategic management strength differently. Leadership style, development of the organization, construction and morale; all of these issues effect how an organization will method its strategic management efforts. But the most significant thing in any procedure is the execution of the strategy and its nonstop estimation. These issues help in determining the practicality of a strategy and confirm the company's achievement and development.
- Strategic philosophy and strategic management are more significant characteristics of senior management's tasks. Strategic planning procedure is a very complete procedure which necessitates a great deal of strategic philosophy. Strategic management helps an organization to determine its' mission and objectives through creating & sustaining competitive advantage.
- The complete strategic management procedure depends on the judgment creation of the leader. Leaders decide how to achieve goals. What kind of strategies should they be and how should they implement them. The most important role of leadership is to integrate people with the strategic management process.
- Nowadays the organization has realized the paybacks of strategic management do to an enterprise. The article has briefly explained the financial and non-financial benefits of strategic management towards the organization.

8) SCOPE FOR FUTURE RESEARCH / RESEARCH IMPLICATION

- The scope this study is limited to Manufacturing Companies in Nagpur Region only, so the same study can be undertaken in other Organizations in India and the inference can be compared. Also find that the Strategic Management Practice is growing by 5.2% per year, so the scope of Strategic Management practice in Manufacturing Companies in Nagpur Region will also increase by the same percentage.
- As there was a time bound in the research work and so survey was conducted over 100 respondents only in Manufacturing Companies in Nagpur Region. Throughout the survey the employees were non-cooperative for concluding the questionnaire. The study is based on the Primary data & Secondary data in Manufacturing Companies in Nagpur Region.
- This study has much scope for future research. The area of study can be extended and number of respondents can also be increased to arrive at a more realistic conclusion regarding the Health and Safety practices in Manufacturing Companies in Nagpur Region

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AN IMPACT OF SEGMENT-ORIENTED DIGITAL MARKETING ON CONSUMER PURCHASING BEHAVIOUR IN RURAL AREAS OF NAGPUR DISTRICT

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1) ABSTRACT

The segment oriented digital marketing using different platform of consumers is important when an organization wants to gain access to the market, grow their market, increase sales and also add shareholder's value. Even though online digital marketing is developing and expanding, it does not guarantee that consumers will have a positive awareness when it comes to the feasibility of online digital marketing. Consumer behavior regarding online marketing gives an indication as to what awareness is received from consumers and also gives businesses an overall consensus on consumer awareness with regards to online digital marketing. Scope of the study is related to understand the concept of digital marketing and to know the impact of segment oriented digital marketing using different platform in rural areas in Nagpur district and to know the awareness and preference of consumer's towards segment oriented digital marketing in rural areas in Nagpur district.

This study offers the literature that concerning the impact of digital marketing on consumer buying behavior. In the area of business marketing, not so much of studies have examined the segment oriented digital marketing, especially from students' perspective. Most of the previous studies have been conducted to present the advantages and disadvantages or the challenges of online business marketing. This study is of importance because it explores the impact of segment oriented digital marketing using different platform of consumers about online digital marketing. The study also explores the role of technology and consumers behavior towards business marketing.

Keywords: Segment Oriented Digital Marketing, Consumer Behavior, Consumer Buying Behavior, Different Platform, Technology and Consumers.

2) INTRODUCTION

Digital marketing contains all promotion hard work that uses an electronic method or the internet. Trades influence digital networks such as search engines, social media, email, and their websites to attach with present and potential customers. Marketing has always been about linking with your audience in the correct place and at the correct time. Today, in addition to traditional marketing approaches, you want to attach with the members of your target market where they are already spending time: on the internet. Arrive digital marketing which can be clear as any form of marketing that survives online.

Digital marketing contains of the use of various digital strategies and networks to join with clients where they pass much of their time online. From your website to your trade's online branding goods digital campaign, email advertising, online brochures, and external there's a band of methods that reduction below the parasol of "digital marketing." The **American Society for Quality (ASQ)** clarifies Customer Satisfaction as "An aspect that decides how happy customers are with a company's products, services, and capabilities". Armed with evidence since investigations and evaluations, firms can make educated results about how to advance their products and services.

Digital Marketing can be understood as a well-targeted, conversion-oriented, quantifiable, and interactive marketing of products or services by utilizing digital innovation to achieve the customers, and transform them into clients in a sustainable fashion. The whole concept and functionalities of Digital Marketing are more competent, effective, result-oriented and measurable. Digital Marketing is a great way of increasing brand awareness, customer engagement and long-term loyalty and generating a short-term boost in sales, despite the fact that every digital marketing campaign is different in their own ways, the reality is that many of them are built on common basics and a few key elements. Successful Digital Marketing Campaign requires a lot of time following through analytics and data to find insights.

TYPES OF DIGITAL MARKETING:

- ❖ **Affiliate Marketing:** Affiliate marketing operates the ever-growing reputation of business specialists and social media influencers. In working with these third-party influencers, your association will cooperate to promote your goods or facilities for return. In association, influencers will involve their audience with posts, blogs or videos to bring in extra business for your organization and generate original leads.

- ❖ **Content Marketing:** Content marketing mechanism in relationship with other forms of digital marketing. It is a method to include Search Engine Optimization (SEO) into fresh website content and the content produced can be shared as social media posts and in email promotion journals. Observing at the analytics for your content promotion can tell you a portion nearby your clients.
- ❖ **Email Marketing:** Even with the appearance of public media, mobile applications and other networks, email is still one of the greatest actual promotion methods, Rogers said, it can be portion of a content promotion approach, providing worth to customers and, above time, changing an audience into clients.
- ❖ **Promotion Analytics:** One of the main benefits of digital marketing is that it is extremely path able and measurable. When the individual track able promotion pieces were vouchers and similar straight mail proposals. If a consumer used the voucher you knew the message resonated.
- ❖ **Mobile Marketing:** This digital marketing kind is motivated on success your goal audience on their smartphone or tablet. Mobile marketing influences persons through text messages, social media, websites, and email and mobile applications. Dealers can tailor proposals or special content to a geographic place or period, such as when a client walks into a store or arrives an event.
- ❖ **Pay-per-Click (PPC):** refers to paid ads and promoted search engine outcomes. This is a temporary system of digital promotion; sense that when you are no lengthier disbursing, the advertisement no lengthier occurs. Like SEO, PPC is methods to growth examine circulation to a business online.
- ❖ **Search Engine Optimization (SEO):** The aim of SEO is to grow a business to rank advanced in Google search outcomes, finally growing search engine movement to the business's website. To achieve this, SEO dealers study words and phrases customers are using to search for evidence online and use those terms in their own content.
- ❖ **Social Media Marketing:** This contains all business does via social media a channel. Just around everybody is aware with social media, but dealers must method social with a combined and calculated attitude. Social media promotion efforts far outside simply making posts for social channels and replying to comments.

Segment Oriented Digital Marketing: Following are the segments of Digital Marketing

- 1) Grocery, 2) Fashion, 3) Appliances, 4) Mobiles, 5) Home Services, 6) Electronics,
7) Furniture, 8) Toys & Books, 9) Food & Healthcare, 10) Sports Hub, 11) Auto Accessories, 12) Travel, 13) Smart Gadgets, 14) Gift Cards, 15) Bikes & Scooters, 16) Medicines, etc..

Platform of Digital Marketing: Following are the platform of Digital Marketing

- 1) Amazon, 2) Myntra, 3) AJIO, 4) Flipkart, 5) Meesho, 6) Nykaa, 7) Shopsy, 8) JioMart,
9) Big Basket, 10) Glow Road. Etc..

3) LITERATURE REVIEW

This reviews existing literature on Segment Oriented Digital Marketing. This involves review of theoretical aspects related to this study.

K. Sathya & S. Preethi, (2017), Digital Marketing is the art and science of selling products and/or services over digital networks, such as the Internet and cellular phone networks. The art of Digital marketing involves finding the right online marketing mix of strategies those appeals to your target market and will actually translate into sales. India stands at fourth place with 120 million internet users in 2022.

Dr. Leena Jenefa & Dr Jagbir Singh Kadyan, (2019), Digital marketing plays a vital role in this competitive world and considered as a new form of marketing and provided new chances for corporations to do trades for 24 hours in a week. It provides assistances to contact the somebody face to face. The understanding has continued lead to know the attentiveness about digital marketing between clients and the level of happiness towards digital advertisement on purchaser goods.

Piruni A. Deyalage & Dushyantha Kulathunga, (2019), Customer satisfaction has been identified as an important phenomenon in relation to online shopping. The study of what reason client satisfaction has developed supreme for online trades. Therefore, the determination of this reading was to find the determinants of client satisfaction in an online situation. In this study, the authors proposed a conceptual model of customer satisfaction in the online context by identifying the key factors proposed by previous studies, and hypotheses were developed accordingly.

Ayodeji Awokunle Awosoji, (2021), this study determined the effect of digital marketing on customer satisfaction using a cross sectional survey in Lagos, Nigeria. Effectiveness and operational management of digital marketing pleases customer and make them feel happy when they buying products online particularly when the quality of the product is excellent. Customer satisfaction and email marketing has a significant positive correlation, customer satisfaction and social media marketing has a significant positive correlation, and customer satisfaction and search engine marketing has a significant positive relationship.

Sunantha P & Dr. M. Chandran, (2022), This era has been taken over by digitalization, where the marketers are moving towards digital marketing, which markets the goods and facilities finished the use of digital technologies thereby ahead analyses and changing them into reserved clients. The reserved customers are verified with the levels of satisfaction through which the digitalization is measured. The reading has been finished to finding out the details behind digital marketing and it's side by side of happiness to customer.

RESEARCH GAP: The following are the main Research Gaps

- Most of the earlier studies have been present the advantages and disadvantages or the challenges of online digital marketing. Also many studies have investigated role of digital marketing.
- Most of the earlier studies have been present online digital marketing mix of strategies those demands to target market. Till no one can done the research on segment oriented digital marketing using different platform.

4) RESEARCH OBJECTIVES

The following are the Main Objectives:

- 12.To study and understand the concept of Segment Oriented Digital Marketing.
- 13.To study the role of Segment Oriented Digital Marketing in Rural Areas of Nagpur District.
- 14.To study the affecting factors of Segment Oriented Digital Marketing in Rural Areas of Nagpur District.
- 15.To measure and analyzing the overall performance of Segment Oriented Digital Marketing on Consumer Purchasing Behaviour in Rural Areas of Nagpur District.

5) RESEARCH METHODOLOGY

In execution of analysis, data collected from 01/01/2025 to 31/10/2025 are used.

- **Research Area:** Rural Areas of Nagpur District.
- **Area Names:** Mansar, Deolapar, Ramtek, Chichala, Parsoda, Nagardhan
- **Research Instrument:** Individual Meeting
- **Investigation Plan:** Descriptive
- **Data Type:** Primary & Secondary records
- **Connection Technique:** Companies Records Survey, By Phone, Personal Meeting
- **Total Population:** 30000
- **Sample size:** 100
- **Sampling Technique:** Random Sampling Technique
- **Analysis Tools:** Percentage Analysis with Likert Rating Scale 1-5

6) RESULTS AND DISCUSSIONS:

Affecting Factors of Segment Oriented Digital Marketing:

- **Website Advertisement:** A
- **Website Awareness:** B
- **Website Experience:** C
- **Website Information:** D
- **Product Price:** E
- **Product Availability:** F

➤ **Product Offers / Scheme:** G

➤ **Product Delivery Timing:** H

Options	Options Rating	Satisfaction Score level	Assigned Score
1	Always/Strongly Agree/ Outstanding	80% -100%	5 means = 1.00
2	Agree / Often / Very good	60% - 80%	4 means = 0.80
3	Neutral / Occasionally / Good	40% - 60%	3 means = 0.60
4	Rarely/Disagree/Below Agree	20% - 40%	2 means = 0.40
5	Never / Strongly Disagree	00% - 20%	1 means = 0.20

Table1.1 Average Score against 5 Point Scale

Responses of Purchasing Behaviour									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	160	152	147	159	164	148	134	151	1215
AVG	1.60	1.52	1.47	1.59	1.64	1.48	1.34	1.51	1.51875

Responses of Consumer Awareness									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	153	158	150	147	139	146	140	155	1188
AVG	1.53	1.58	1.50	1.47	1.39	1.46	1.40	1.55	1.485

Responses of Consumer Experience									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	146	150	157	144	147	136	159	157	1196
AVG	1.46	1.50	1.57	1.44	1.47	1.36	1.59	1.57	1.495

Responses of Online Customer Service									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	139	146	150	147	160	155	149	152	1198
AVG	1.39	1.46	1.50	1.47	1.60	1.55	1.49	1.52	1.4975

Responses of Consumer Satisfaction									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	130	140	136	139	142	145	132	138	1102
AVG	1.30	1.40	1.36	1.39	1.42	1.45	1.32	1.38	1.3775

SAMP LE	Purchasing Behaviour		Consumer Awareness		Consumer Experience		Online Customer Service		Consumer Satisfaction		Weight age
NO 01 TO 100	A	160	A	153	A	146	A	139	A	130	728
	B	152	B	158	B	150	B	146	B	140	746
	C	147	C	150	C	157	C	150	C	136	740
	D	159	D	147	D	144	D	147	D	139	736
	E	164	E	139	E	147	E	160	E	142	752
	F	148	F	146	F	136	F	155	F	145	730
	G	134	G	140	G	159	G	149	G	132	714
	H	151	H	155	H	157	H	152	H	138	753
SUM	1215		1188		1196		1198		1102		5899
Mean Value	151.875		148.500		149.500		149.750		137.750		147.475

Table 1.2 Results of Overall Performance of Segment Oriented Digital Marketing on Consumer Purchasing Behaviour in Rural Areas of Nagpur District.

Overall Performance of Segment Oriented Digital Marketing	Avg Score Against 5 Point Scale	% of Performance Progresses	% of Performance till not Improvements
Purchasing Behaviour	1.51875	69.685%	30.315%
Consumer Awareness	1.485	70.300%	29.700%
Consumer Experience	1.495	70.100%	29.900%
Online Customer Service	1.4975	70.050%	29.950%
Consumer Satisfaction	1.3775	72.450%	27.550%
Avg %	70.517%		29.483%
Performance	Very good (60% - 80% achievement)		

Parameters (Variables)	Weightage	Resp. Avg. (500)	% of Performance in Improvements	% of Performance not Improvements
A = Website Advertisement	728	1.456	70.88%	29.12%
B = Website Awareness	746	1.492	70.16%	29.84%
C = Website Experience	740	1.480	70.40%	29.60%
D = Website Information	736	1.472	70.56%	29.44%
E = Product Price	752	1.504	69.92%	30.08%
F = Product Availability	730	1.460	70.80%	29.20%
G = Product Offers / Scheme	714	1.428	71.44%	28.56%
H= Product Delivery Timing	753	1.506	69.88%	30.12%
% of Average Performance			70.505%	29.495%

7) CONCLUSIONS:

- 1) The Analysis of Consumer Purchasing Behaviour and Satisfaction levels across various aspects about Segment Oriented Digital Marketing highlights in this Research Paper.
- 2) Every marketer must understand the psychology of these all segment Oriented Digital Marketing, so that they can be a successful marketer in the days to come in the competitive economy.
- 3) Segment Oriented Digital Marketing has transformed the way businesses interact with consumers in rural areas, offering unprecedented opportunities for growth and engagement. This study highlights the critical role of social media, search engine marketing, and mobile marketing in influencing purchase decisions in these rural areas markets.
- 4) Brands pointing to succeed in rural markets must adopt a holistic approach that combines technology with a deep understanding of local consumer behavior. By ordering transparency, personalization, and public engagement, businesses can build permanent relationships with consumers and drive maintainable growth in these developing markets.

8) SCOPE OF FUTURE RESEARCH:

- 1) **Understanding Consumer Behavior:** Investigating how changing circumstances.
- 2) **Focusing on Improving User Interfaces:** payment processes, security measures, and convenience to boost satisfaction in online transactions.
- 3) **Optimizing Challenges in Delivery:** Identifying challenges in the delivery process and exploring innovative strategies to enhance speed and reliability.
- 4) **Improving Customer Service:** Finding ways to enhance online customer service experiences and the impact of effective service on customer satisfaction and loyalty.

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ANALYSING THE ROLE OF TRAINING AND DEVELOPMENT PRACTICES IN RURAL
GOVERNMENT HOSPITALS, NAGPUR DISTRICT

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1) ABSTRACT

Training is important, not only from the point of view of the organization, but also for the employees. It provides them better job security and an opportunity for career development. A skill developed through training is an advantage for the organization and the employee. The benefits of training stay for a very long time. Training can become outdate only when there is a complete elimination of the desired for that skill and knowledge, which may happen because of the technological changes. Training and Development is the framework for helping employees to develop their personal and organizational skills, knowledge, abilities, and attitude. Globalization and liberalization is pushing organizations towards a steep competition. Organizations are trying their level best to sustain in this competitive environment. In such condition the supreme outcome is the lowest necessity and existence of the rightest employee is the law of the game. Organizations need the fittest employee who is sharp enough to perform their best for that organization. This calls for high competency and attitude, which may not be readily available in the employees of that organization. This capability gap can be occupied with a well-designed training and development platform. Hence the carefully planned and conducted Training and Development activity in any organization has become the activity of developing most superior workforce so that the organization and individual employee can accomplish their goals. Training is an investment in human resource which promises of better returns in future. It results in greater stability, flexibility and capacity for growth in an organization.

Government hospitals are provides services especially for poor people in rural area. Mostly poor people are going to government hospitals for various medical treatments. Near about 80% people are living in rural area of India. The Number of employees is also less recruited in government hospitals rather than actual requirements. Every year so many people died due to not provided medical treatments properly in time and provides poor services. Maharashtra state provides more services in the city government hospitals rather than rural government hospitals.

Keywords: Career Development, Skill Development, Training and Development, capacity for growth, Government hospitals, Greater Stability & Flexibility.

2) INTRODUCTION

CONCEPT OF TRAINING

Training is about developing employees as an individual to make them capable and confident in their jobs, and consequently in their life. Thus it is an organized process for increasing the knowledge and skill of the employees. Consequently it is a process aimed at changing the behaviour in such a way that the consequence would be useful for the upliftment of the organization. According to **Edwin B. Flippo**, "Training is the action of growing the knowledge and abilities of an employee for doing a specific job". According to **H. John Bernardino**, "Training is any attempt to improve employee performance on a currently held job or one related to it". According to **Armstrong, (2001: 543)**, "**Training** is the formal and systematic modification of behaviour through learning which occurs as a result of education, instruction, development and planned experience".

CONCEPT OF DEVELOPMENT

Development is related to enhancing the conceptual skills of the employee, which helps individual towards achieving maturity and self-actualization. In the words of **Michael Armstrong**, Employee development, often referred to as human resource development (HRD) is about the provision of learning, development and training opportunities in order to improve individual, team and organizational performance. Development is defined by **Alan Mumford**, "as an attempt to improve managerial effectiveness through a planned and deliberate learning process". According to **Bernard M Bass & James A. Vaughan**, "Development suggests the nature and alteration induced among employees through method of education and training".

Training	Development
Vocationally oriented and on the job and so training is short term	A long term process for developing conceptual skills
Training is generally for non-managerial personnel	Development is generally for managerial personnel

Training is imparting of technical and mechanical knowledge	Development is theoretical and conceptual idea implementation.
Training is related with specific job	Development is aimed at acquiring general knowledge
A mechanic who repairs generator better than engineer is only trained	An engineer may not be better mechanic but he has theoretical and conceptual skill as well as knowledge of principles of engineering

NEED FOR TRAINING:

- ❖ To improve the efficiency of employees
- ❖ To reduce wastage of time and money,
- ❖ To have quality output,
- ❖ To bring down supervision,
- ❖ To have preventive maintenance,
- ❖ To achieve optimum performance,
- ❖ To boost morale of employees,
- ❖ To prepare workforce for future challenging work,
- ❖ To reduce absenteeism,
- ❖ To bring down the grievances,
- ❖ To build career by personal growth,

When does the need for Training arise?

- The installation of new equipment or techniques
- A change in working methods or products produced
- A realisation that performance is inadequate
- Labour shortage, necessitating the upgrading of some employees
- A desire to reduce the amount of scrap and to improve quality
- An increase in the number of accidents
- Promotion or transfer of individual employees.
- Ensures availability of necessary skills and there could be a pool of talent from which to promote from.

Analysing Training Needs: For training to be effective it is important to not only discern the training needs of the individual / group but also how their needs fit the overall objectives of the organisation. Many organisations invest considerable resources in training and development but never really examine how training and development can most effectively promote organisational objectives, or how developmental activities should be altered in the light of business plans. (Beardwell et al, 2001: 329)

Change in Technology: A change in technology has such a pace today, that one notices the change and another technology comes before one has understood the first change completely. Such a change is evident from the technology change in case of cellular phones. From this fact what it boils down is training is not a static concept but very dynamic one and therefore must be a continuous one.

Quality Conscious Customers: Offerings of products and services for any sector are phenomenally increasing with a Jet Speed which has made it possible to ask for more and more quality of them. The customers have become more aware and demanding in case of a quality of service or a product. In order to cope with this forcing demand the employees need more and more training.

Increasing Productivity: The equation of profit was Sale less Cost = Profit, this has changed to permit only in costs and not in Sales. Thus competition needs very strict control over costs of inputs. Thus input to output ration which is considered as the productivity has to be higher and higher to enable to make profits, survive and grow. Thus keeping cost lower and lower is not possible without training the work force. It additionally renders the feeling of a job security amongst the employees.

Significance of Training and Development: Training and development platforms, as was sharp out previous, help eliminate performance insufficiencies in employees. This is particularly true when –

- The deficiency is caused by a lack of ability rather than a lack of motivation to perform,
- The individuals involved have the aptitude and motivation need to learn to do the job better, and
- Supervisors and peers are supportive of the desired behaviours.

THE PURPOSE OF TRAINING

- To increase productivity and quality
- To promote versatility and adaptability to new methods
- To reduce the number of accidents
- To reduce labour turnover
- To increase job satisfaction displaying itself in lower labour turn-over and less absenteeism
- To increase efficiency

3) LITERATURE REVIEW

This reviews existing literature on Training and Development Practices. This involves review of theoretical aspects related to this study.

Bagade S. D, (2012), Management is emphatically emphasizing on employee engagement, top talent retention strategy, leadership practices, key performance index, training for behavioral change- skill and capacity building in the culture – functional competence. Along with it, the values of the organization such as integrity, understanding, excellence, unity, responsibility, creating a culture to get aspired- action oriented – achiever.

Harshit Topno, (2012), Training and development enhances efficiency and develops a systematic way of performing duties and assigned tasks. Moreover it bridges the gap between job requirement and employees present specification. Training similar any other organizational movement needs time, energy and money. It's an investment in employees' productivity and retention by providing for career progression and employees job satisfaction over the long time.

Anthonia Adindu & Anne Asuquo, (2013), the health sector is labour intensive, requires diverse professionals and precise application of knowledge to deliver quality service. Health training institutions are critical in the health system and affect the lives of people because quality of training affects performance of health workers. Training prospectuses for most occupations in Nigeria are scientific and curative concerned with, training institutions are therefore, partially responsible for failure of the health scheme.

Wajdi Milhem, Khalil Abushamsieh, (2014), this article aims to identify the concept of human resource training and to emphasize strategies, theories and kinds of training. The organizational strategy and training are very essential to show the benefits of using strategic view and perception of training, since by linking this strategy with human resource actively, particularly on training and development, it will contribute to the success and enrichment of the organizations.

Ahmad Ayed & Sumaya Sayej, (2015), The study aimed to assess night shift and education / training developmental factors on performance of professional nurses in north West Bank governmental hospitals. Organizational issues are considered to be the keystone in attaining emotional and professional safety at work, which in turn are definitely reproduced in job performance together quantitatively and qualitatively.

4) RESEARCH OBJECTIVES

The following are the Main Objectives:

- 16.To study and understand the concept of training and development practices
- 17.To analyse the effectiveness of training and development programme in rural government hospitals.
- 18.To evaluation of patients satisfaction level at rural government hospitals in Nagpur Region.

5) RESEARCH METHODOLOGY

In execution of analysis, data collected from 01/01/2025 to 31/10/2025 are used.

- **Research Area:** Rural Areas of Nagpur District.
- **Area Names:** Ramtek (SDH), Parshivani, Kampthee (SDH), Katol.
- **Research Instrument:** Individual Meeting
- **Investigation Plan:** Descriptive
- **Data Type:** Primary & Secondary records
- **Connection Technique:** Records Survey, By Phone, Personal Meeting
- **Total Population:** 10000
- **Sample size:** 100
- **Sampling Technique:** Random Sampling Technique
- **Analysis Tools:** Percentage Analysis with Likert Rating Scale 1-5

6) RESULTS AND DISCUSSIONS:

Affecting Factors of Training and Development Programme

- **Aims and Necessity :** A
- **Guideline for planning:** B
- **Technical Education and Training:** C
- **Ability Growth for Decision making process:** D
- **Support among Management & Employees:** E
- **Facilities for Prize to the Employees:** F
- **Delegates power with duty:** G
- **Equal Chance for Employees:** H

Options	Options Rating	Satisfaction Score level	Assigned Score
1	Always/Strongly Agree/ Outstanding	80% -100%	5 means = 1.00
2	Agree / Often / Very good	60% - 80%	4 means = 0.80
3	Neutral / Occasionally / Good	40% - 60%	3 means = 0.60
4	Rarely/Disagree/Below Agree	20% - 40%	2 means = 0.40
5	Never / Strongly Disagree	00% - 20%	1 means = 0.20

Table1.1 Average Score against 5 Point Scale

Responses of Training and Development									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	180	172	165	159	164	161	157	168	1326
AVG	1.80	1.72	1.65	1.59	1.64	1.61	1.57	1.68	1.6575

Responses of Organizational Skills and Knowledge									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	165	159	157	149	153	151	160	164	1258
AVG	1.65	1.59	1.57	1.49	1.53	1.51	1.60	1.64	1.5725

Responses of Abilities and Attitude Development									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	150	164	158	147	162	168	157	153	1259
AVG	1.50	1.64	1.58	1.47	1.62	1.68	1.57	1.53	1.57375

Responses of Stability and Flexibility Development for Job									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	169	172	176	159	153	146	164	170	1309
AVG	1.69	1.72	1.76	1.59	1.53	1.46	1.64	1.70	1.63625

Responses of Capacity Growth for Performance									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	172	175	176	156	166	160	157	174	1336
AVG	1.72	1.75	1.76	1.56	1.66	1.60	1.57	1.74	1.67

Sample	Training and Development		Organizational Skills and Knowledge		Abilities and Attitude Development		Stability and Flexibility Development for Job		Capacity Growth for Performance		Weight age
NO 01 TO 100	A	180	A	165	A	150	A	169	A	172	836
	B	172	B	159	B	164	B	172	B	175	842
	C	165	C	157	C	158	C	176	C	176	832
	D	159	D	149	D	147	D	159	D	156	770
	E	164	E	153	E	162	E	153	E	166	798
	F	161	F	151	F	168	F	146	F	160	786
	G	157	G	160	G	157	G	164	G	157	795
	H	168	H	164	H	153	H	170	H	174	829
SUM	1326		1258		1259		1309		1336		6488
Mean Value	165.75		157.25		157.375		163.625		167.000		162.20

Table 1.2 Results of Overall Patients Satisfaction Level at Rural Government Hospitals in Nagpur Region.

Overall Patients Satisfaction Level for all affecting factors	Avg Score Against 5 Point Scale	% of Performance Progresses	% of Performance till not Improvements
Training and Development	1.6575	66.85%	33.15%
Organizational Skills and Knowledge	1.5725	68.55%	31.45%
Abilities and Attitude Development	1.57375	68.525%	31.475%
Stability and Flexibility Development for Job	1.63625	67.275%	32.725%
Capacity Growth for Performance	1.6700	66.60%	33.40%
Avg %	67.56%		32.44%
Performance	Very good (60% - 80% achievement)		

Parameters (Variables)	Weightage	Resp. Avg. (500)	% of Performance in Improvements	% of Performance not Improvements
A = Aims and Necessity	836	1.672	66.56%	33.44%
B = Guideline for planning	842	1.684	66.32%	33.68%
C = Technical Education and Training	832	1.664	66.72%	33.28%
D = Ability Growth for Decision making process	770	1.54	69.20%	30.80%
E = Support among	798			

Management & Employees		1.596	68.08%	31.92%
F = Facilities for Prize to the Employees	786	1.572	68.56%	31.44%
G = Delegates power with duty	795	1.59	68.20%	31.80%
H = Equal Chance for Employees	829	1.658	66.84%	33.16%
% of Average Performance			67.56%	32.44%

7) FINDINGS:

- 1) Some of Rural Government Hospitals employees think that they need not required particular training related their job profile. Rural Government Hospitals in Nagpur District many employees of different departments feel that only certain departments are given opportunity for providing training, show their skills and abilities can be increased which will boost their performance.
- 2) The training was provided to all employees in Rural Government Hospitals in Nagpur District as per government training program and policies. Rural Government Hospitals in Nagpur District some employees feel that duration of training was different for the same department.
- 3) Rural Government Hospitals in Nagpur District many employees accepted that after training programs their behavior has been changed and skills were improved. Rural Government Hospitals in Nagpur District both On-the-job and Off-the-job training was provided to all employees who are regular and permanent through internal and external consultants. The most of employees were satisfied with the number and frequency of training programs offered by government hospital.

8) CONCLUSIONS

- 1) Rural Government Hospitals in Nagpur District were offered services to poor and needy people who cannot afford private services. Training improves the drive, initiative and quality of services by hospitals to achieving objectives and it helps to enhancing effectiveness among employees within the Rural Government Hospitals in Nagpur District.
- 2) Rural Government Hospitals in Nagpur District are offered training and Development programs to its employees of all departments. Since majority of the employees were adopted changes after training sessions. There were systematic training and development programs were conducted for the employees as a result patient satisfaction level increased during the study period.
- 3) Regarding the healthcare physical facilities were available but still requires more to fulfill the needs of the patients. The behavior of staff and admission procedure from patient perspective was satisfactory. But still it was scope for improvement.

9) RECOMMENDATIONS

- 1) Rural Government Hospitals in Nagpur District should be taken feedback from the participants in training programs. More focus should be on newly join employees in rural Government Hospitals in Nagpur District so that they can self-motivated to increased performance.
- 2) Some employees in Rural Government Hospitals in Nagpur District feels that training sessions are very long and extensive and gets boring, so hospital management need to reduced time duration of training session.
- 3) Rural Government Hospitals in Nagpur District, nursing department got maximum number of training program in government rural hospital other departments should get equal opportunity for training program.

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ANALYZING THE ROLE OF HUMAN RESOURCE MANAGEMENT PRACTICES FOR OVERALL PERFORMANCE OF EMPLOYEES AT MANUFACTURING COMPANIES IN NAGPUR MIDC AREA

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1) ABSTRACT

The purpose of the study was to know whether a Manufacturing Company has been using the Human Resource Management for overall performance of Employees at Manufacturing Companies in Nagpur for complete Organizational Improvement & overall Employee Career Improvement. The study indicates that the Human resource planning is used by organizations to ensure that they have the right number and the right kind of people at the right place and at the right time. Where this process is carried out properly, it brings maximum long-run benefits to both the organization and the individual employee. Organization performance is unfair by set of actual HRM performs. It gives productive outcomes like attractive employee commitment, retention and reduced employee takings. This article highlights the role of HRM practices in increasing organizational effectiveness. The research is carried out to find out the employee perception towards existing HRM practices for better improvement in Manufacturing Companies in Nagpur.

Keywords: Manufacturing Companies. Human Resource Planning, Human Resource Management, Organization Performance, Employee Career Improvement.

2) INTRODUCTION

Definition and Meaning: Human Resource Management (HRM) is the procedure of recruitment, assortment of employee, providing correct orientation and induction, providing correct training and the increasing skills, valuation of employee (performance of appraisal), providing proper compensation and benefits, motivating, maintaining proper relations with labour and with trade unions, and maintaining employee's safety, welfare and health by complying with labour laws of concern state or country. Many unlimited scholars had clear human resource management in changed ways and with dissimilar words, but the essential significance of the human resource management contracts with how to manage people or employees in the organization. **Edwin Flippo** defines- HRM as "preparation, forming, directing, controlling of procurement, expansion, compensation, addition, maintenance and parting of human resources to the end that single, organizational and social purposes are attained." **The National Institute of Personal Management (NIPM)** of India has defined Human Resources - Personal Management as "that portion of management which is worried with people at work and with their connection inside an enterprise. Its intention is to bring composed and grow into an actual organization of the men and women who make up initiative and having respect for the well – existence of the individuals and of working crowds, to enable them to make their utmost contribution to its achievement".

Scope of Human Resource Management:

1. Personnel Aspect

Human Resource Planning: It is the procedure by which the business classifies the amount of jobs available. Job Analysis and Job Design, Job analysis is the systematic process for gathering, documenting, analyzing data about the work required for a job. Job analysis is the procedure for identifying those duties or behavior that defines a job.

Recruitment and Selection: Recruitment is the procedure of preparing advertisements on the basis of info collected from job analysis and publishing it in newsprint. Selection is the procedure of selecting the greatest candidate among the candidates applied for the work.

Orientation and Induction: Making the nominated aspirant informed about the organization's background, values, morals, and work beliefs.

Training and Development: Training is providing to both new and current employees to advance their performance.

Performance Appraisal: Performance checked is complete of each employee by Human Resource Management. Promotions, transfers, incentives, and salary increases are obvious on the base of employee performance appraisal.

Compensation Planning and Remuneration: It is the occupation of Human Resource Management to plan compensation and reward.

Motivation: Human Resource Management tries to retain employees motivated so that employees put their supreme efforts in work.

2. **Welfare Aspect** – Human Resource Management have to follow certain health and safety regulations for the benefit of employees. It contracts with working situations, and facilities like - canteens, crèches, break and lunch rooms, housing, transport, medical support, education, health and safety, regeneration services, etc.
3. **Industrial Relation Feature** – HRM works to preserve co-ordinal relation with the union members to avoid attacks or lockouts to safeguard smooth operative of the organisation. It also covers - joint discussion, collective negotiating, grievance and disciplinary actions, and argument payment.

IMPORTANCE OF HUMAN RESOURCE MANAGEMENT

Human Resource Management is related with effective utilization of human resources.

1. **Importance concerned with individual organization:** Human Resource Management can support a business to accomplish to its objective more professionally and successfully in the subsequent ways:

- Procurement of mandatory abilities through staffing, selection, appointment, inducting, training, compensation and promotion guidelines.
- Secures co-operation of all employee of the organization for achieving goals.
- Suitable operation of human resources for the achievement of the enterprise.
- Ensure a future team of efficient a competent workers required for the organization.

2. **Professional Importance:** Professional competency among employees can be achieved through the following ways.

- Human resource management delivers extreme chances to employees for their personnel growth.
- Providing healthy relationship among employees
- Proper allocation of work among employees.
- Providing training abilities for the single growth of employees.

3. **Social Importance:** HRM is important in social perspective also. It includes the following aspects:

- Human resource management improves the formality of workers.
- Provides suitable job to suitable person and it will help to satisfy the psychological and social approval of employees.
- Helps to deliver practical return to workers, which indications them to have a good standard of living.
- Helps to preserve a balance among jobs and job seekers in terms of numbers, qualification, aptitude etc.
- Takes health and safety actions which confirms physical and mental health of the workers.

4. **National Importance:** Effective management of human resources will speed up the economic growth of nation. This in turn leads to better standard of living and more job opportunities.

HUMAN RESOURCE MANAGEMENT: OBJECTIVES

- ✚ To help the organization touch its aims.
- ✚ To ensure effective use and extreme development of human resources.
- ✚ To confirm respect for human beings. To recognize and satisfy the requirements of persons.
- ✚ To confirm reconciliation of single aims with those of the organization.
- ✚ To achieve and maintain high morale among employees.
- ✚ To provide the organization with well-trained and well-motivated employees.
- ✚ To growth to the fullest the employee's job happiness and self-actualization.
- ✚ To develop and keep a quality of work life.

- ✚ To be morally and socially receptive to the requirements of society.
- ✚ To grow overall personality of each employee in its multidimensional aspect.
- ✚ To enhance employee's abilities to complete the present job.
- ✚ To equip the employees with exactness and clearness in transactions of business.
- ✚ To inculcate the sense of team soul, team work and inter-team association.

HUMAN RESOURCE ACTIVITIES:

Human Resource Management assumes the subsequent actions:

1. Human resource or manpower planning.
2. Recruitment, selection and placement of personnel.
3. Training and development of employees.
4. Performance Appraisal of employees.
5. Taking remedial steps such as handover from one job to another.
6. Remuneration of employees.
7. Social security and welfare of employees.
8. Setting overall and exact management strategy for organizational connection.
9. Shared bargaining, agreement negotiation and complaint handling.
10. Staffing the organization.
11. Aiding in the self-development of employees at all levels.
12. Evolving and preserving motivation for workers by providing inducements.
13. Studying and checking manpower management in the organization
14. Potential Appraisal Feedback Counselling.
15. Role Analysis for job occupants.
16. Job Rotation.
17. Quality Circle, Organization growth and Quality of Operational Life

3) LITERATURE REVIEW

A literature review is a body of text that aims to evaluation the serious points of present information particular subjects.

Anil Chandrakumara, (2013), this paper explores human resource management practices in small and medium enterprises Indonesia and South Korea. Despite the fact that these countries have been identified as strong emerging economies and the pivotal role those SMEs play in these countries; a relatively less attention has been paid to investigate HRM practices of SEMs. This study uses existing empirical research and published data to explore HRM practices of SMEs in the two countries. The analysis of HRM practices is made with respect to both cultural values orientations of the two nations and different theories and models of HRM practices.

Usama Awan, (2013), Employee unions usually remain counterproductive for private organizations. This review of literature examines the role of Human Resource Management practices between the employee unions and organization requirements. Literature review method adopted to critically analyze the existing literature through secondary resources to see the ways to avert the role of unionization from organizations. The objective of the paper is to speech the gap in literature, how HRM prevents unionization in private organizations.

Pavitra Dhamija, (2012), this paper explores human resource management practices. Management of human resources is an integral part for every concern. It is linked with the people at work and their relations within and outdoor the enterprise. Recruitment of efficient staff is one of the important activities as it generates the human capital for the concern. In the recent years, the field of human resource management has undergone numerous technological advancements.

Sangeeta Trehan & Karan Setia, (2014), With this paper we hope to contribute to a better understanding of the role of human resource practices in creating and sustaining organizational performance, specifically in the Indian context. The structure of the paper is as follows.

4) RESEARCH OBJECTIVES

The following are the main objectives frame for the research work

19. To Study and understand the concept of Human Resource Management on Employees Performance at Manufacturing Companies in Nagpur MIDC Area.
20. To Study and understand the Impact of affecting factors in the Human Resource Management on Employee Performance at Manufacturing Companies in Nagpur MIDC Area.
21. To measure the performance of employees through the Human Resource Management and Employee Satisfaction at Manufacturing Companies in Nagpur MIDC Area.

5) RESEARCH METHODOLOGY

In execution of analysis, data collected from 2024 to 2025 are used.

- **Research Area:** Nagpur MIDC Area
- **Manufacturing Companies Names:** Sharda Shree Ispat Limited, Facor Steel Ltd, Eros Metal Works Pvt, Vidarbha Iron & Steel Corporation Ltd.
- **Research Instrument:** Individual Meeting
- **Investigation Plan:** Descriptive
- **Data Type:** Primary & Secondary records
- **Connection Technique:** Company Records Survey, By Phone, Personal Meeting
- **Total Population :** 7800 Employee's in Companies
- **Sample size:** 100 Employee's in Companies
- **Sampling Technique:** Random Sampling Technique
- **Analysis Tools:** Percentage Analysis with Likert Rating Scale 1-5

6) RESULTS AND DISCUSSIONS:

Human Resource Management Parameters Analysis for Employees Performance:

- **Manpower Planning:** A
- **Training and Development :** B
- **Performance Appraisal:** C
- **Social Security and Welfare:** D
- **Organizational Relationship:** E
- **Incentives & Job Rotation:** F
- **Organization Development :** G
- **Feedback Counselling:** H

Options	Options Rating	Satisfaction Score level	Assigned Score
1	Always/Strongly Agree/ Outstanding	80% -100%	5 means = 1.00
2	Agree / Often / Very good	60% - 80%	4 means = 0.80
3	Neutral / Occasionally / Good	40% - 60%	3 means = 0.60
4	Rarely/Disagree/Below Agree	20% - 40%	2 means = 0.40
5	Never / Strongly Disagree	00% - 20%	1 means = 0.20

Table1.1 Attained Average Score against 5 Point Scale

Responses Employee Performance									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	125	132	140	127	138	140	122	135	1059
AVG	1.25	1.32	1.40	1.27	1.38	1.40	1.22	1.35	1.32375

Responses Employee Satisfaction									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	128	140	134	125	138	145	130	140	1080
AVG	1.28	1.40	1.34	1.25	1.38	1.45	1.30	1.40	1.35

SAMPLE	Employee Performance		Employee Satisfaction		Weightage
SAMPLE NO 01 TO 100	A	125	A	128	253
	B	132	B	140	272
	C	140	C	134	274
	D	127	D	125	252
	E	138	E	138	276
	F	140	F	145	285
	G	122	G	130	252
	H	135	H	140	275
SUM	1059		1080		2139
Mean Value	132.375		135		133.6875

Variables	A	B	C	D	E	F	G	H	Total
Weightage	253	272	274	252	276	285	252	275	2139
Resp. Avg.(200)	1.265	1.36	1.37	1.26	1.38	1.425	1.26	1.375	1.337

Table 1.2 Results of Overall Performance of Human Resource Management for Employee Satisfaction and Employees Performance:

	Employee Performance	Employee Satisfaction
Average Score Against 5 Point Scale	1.32375	1.35
	73.525%	73.00%
Avg %	73.2625% (60% - 80% achievement)	
Performance	Very good	

Improvements for all affecting factors	% of Performance Progresses	% of Performance till not Improvements
Employee Performance	73.525%	26.475%
Employee Satisfaction	73.00%	27.00%
% of Average Performance	73.2625%	26.7375%

Table 1.3 Results of Overall Performance of Employees through the Affecting Factors for Human Resource Management:

Parameters (Variables)	Weightage	Resp. Avg. (200)	% of Performance in Improvements	% of Performance not Improvements
A = Manpower Planning	253	1.265	74.70%	25.30%
B = Training and Development	272	1.36	72.80%	27.20%
C = Performance Appraisal	274	1.37	72.60%	27.40%
D = Social Security and Welfare	252	1.26	74.80%	25.20%

E = Organizational Relationship	276	1.38	72.40%	27.60%
F = Incentives & Job Rotation	285	1.425	71.50%	28.50%
G = Organization Development	252	1.26	74.80%	25.20%
H = Feedback Counselling	275	1.375	72.50%	27.50%
% of Average Performance			73.2626%	26.7375%

Results and Discussions: The Results and Discussions have been drawn from the analysis and data interpretations based.

- Analysis table's authorization about all Human Resource Management Performance Improvements is Compulsory of all Manufacturing Companies in Nagpur MIDC Area. Without decreasing average **26.7375%** of affecting factors they cannot achieve all organisations' goals in HRM Department.
- The strategic positioning of Human Resource Management directly promotes Companies business goals and objectives, and thereby enhancing Companies performance. Human Resource Management research exposed that HR's role is to establish and implement a high-level roadmap for strategic Human Resource Management in Manufacturing Companies in Nagpur MIDC Area.
- Manufacturing Companies in Nagpur MIDC Area must attention on constant learning and Awareness trainings program about Human Resource Management in working places for employees. Manufacturing Companies Administrators should be involved in policy decisions for Human Resource Management training. Good Human Resource Management training must provide opportunities to learn and grow all employees Performance.

7) CONCLUSIONS

Conclusion Established on investigation findings and discussion, it can be decided that

- Human Resource Management practices have significant effect on employee's performance in Manufacturing Companies in Nagpur MIDC Area.
- Effective Human Resource Management policy can be a crucial factor for employees and Organizations. Strong and consistent leadership with the successful implementation of Human Resource Management practices in HRM Department of the company has dominant effect in determining the performance of employees in Manufacturing Companies in Nagpur MIDC Area.
- Employees performance improvement programs are use training that have been planned for the Manufacturing Companies in Nagpur MIDC Area within the framework of HRM practices could be work well if Managers and Management can be able to support it.
- The division based training programs aimed by external professionals are useful to some scope but they are unaware of the internal environment, culture type of leadership, methodology of working. Hence a mix of internal & external trainers is essential for employee's performance training programs in Manufacturing Companies in Nagpur MIDC Area.

8) SCOPE FOR FUTURE RESEARCH / RESEARCH IMPLICATION

- The scope this study is limited to Manufacturing Companies in Nagpur MIDC Area only, so the same study can be undertaken in other Organizations in India and the inference can be compared. Also find that the HRM practices is growing by **6.2%** per year, so the scope of HRM practices in Manufacturing Companies in Nagpur MIDC Area will also increase by the same percentage.
- As there was a time bound in the research work and so survey was conducted over 100 respondents only in Manufacturing Companies in Nagpur MIDC Area. During the survey the employees were non-cooperative for finishing the questionnaire. The study is based on the Primary data & Secondary data in Manufacturing Companies in Nagpur MIDC Area.
- This study has much scope for future research. The area of study can be extended and number of respondents can also be increased to arrive at a more realistic conclusion regarding the HRM practices in Manufacturing Companies in Nagpur MIDC Area.

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GENDER EQUITY IN CORPORATE DECISION-MAKING

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ABSTRACT:

Corporate world is fraught with tough situations and business tangles giving rise to sensitive issues, including gender-equity. Over time, ample sensitization of gender-sensitive issues have been highlighted and dealt with in almost every workplace. Notwithstanding this, there are always times when this sensitivity takes a back seat and vitiates the importance of what is brought to the table by a woman entrepreneur / co-worker. Whatever said and done, the fact remains that 'it is still a man's world', and gender struggles cannot be totally eradicated. Women are stereotyped as "intuitive" and men as "rational". This research, inter alia, investigates gender differences in the intuitive and rational decision-making styles, combination of which yield mixed results.

This research paper delves into the gender equity issues and improvement in situations over a period of time, with women proving their worth in the corporate world and contributing immensely and dedicatedly to the betterment of business houses, resulting in benefits like better financial performance, improved decision-making, and a more inclusive culture. Achieving this requires going beyond representation to address structural barriers, unconscious bias, and power imbalances through policies, leadership commitment, and sensitization programs. The research delves into the modalities of achieving gender equity through clear policies, fostering inclusive culture, supporting women empowerment, addressing unconscious bias issues, etc.

The research will primarily be driven by hands-on experience and feedback from women entrepreneurs / society in general.

Key words: Gender equity, women empowerment, decision-making, styles, barriers, bias, ice-breaking strategies, perception.

INTRODUCTION

Gender equity in corporate decision-making refers to equal opportunity, participation, and influence of women in leadership roles - especially on Boards of Directors and in Executive Management. Historically, women have been under-represented in top corporate hierarchy positions due to structural biases, cultural norms and glass ceilings that limit access to decision-making authority.

Gender equity in corporate decision-making has emerged as a critical issue in contemporary business discourse, reflecting broader societal demands for fairness, inclusion, and sustainable governance. Despite significant progress in workforce participation, women remain underrepresented in senior leadership and board-level positions, where strategic decisions with far-reaching economic and social consequences are made. This imbalance not only raises concerns about equality and social justice but also has implications for organizational performance, innovation, and risk management, as diverse leadership teams are consistently linked to better decision outcomes. Examining gender equity in corporate decision-making is therefore essential to understanding the structural, cultural, and institutional barriers that persist, as well as the strategies organizations can adopt to foster more inclusive and effective leadership practices.

Recent policy actions, such as the Indian Companies Act mandating female board representation and governance targets in the UK, have increased attention on the topic. Empirical studies explore how female participation shapes corporate governance, strategy, and performance.

LITERATURE REVIEW

1. Qazi, A. R. Khan, A. U. Haq & M. Talat (2025) - "Board Gender Diversity in Corporate Governance of Public Listed Companies: A Literature Review" – Journal of Business and Management Research. Offers a recent literature review on gender diversity, theoretical frameworks, and implications for governance and decision-making outcomes.
2. Breaking barriers: assessing the influence of female directors on financial performance beyond the boardroom (2025) – Review of Managerial Science Highlights the persistent under-representation of women in executive committees and its consequences on performance and leadership influence
3. "Increasing women's contribution on board decision-making: The importance of chairperson leadership efficacy and board openness" (2017) – Journal of Business Research. Shows how board culture and

leadership style affect the ability of women directors to contribute meaningfully to corporate decision-making

4. Sudheer Reddy & Aditya Jadhav (2019) “Gender diversity in boardrooms – A literature review” - Cogent Economics & Finance. A comprehensive review of theories, factors influencing gender diversity, and performance impacts
5. Gender Diversity in Boards of Directors: A Bibliometric Mapping (2025) – MDPI Systematic mapping of gender diversity research, showing evolution of the field and emerging topics related to governance, firm performance, and diversity impacts
6. JBMRjournal.com: Board Gender diversity in corporate governance of public listed companies: This literature synthesizes research from 2010 to 2025 on board gender diversity (BGD) in the corporate governance of public listed companies, exploring its impact on firm performance, corporate social responsibility (CSR), environmental, social, and governance (ESG) outcomes, and risk management. Empirical findings indicate a generally positive association between BGD and firm value, CSR performance, and risk reduction, though results vary by context, including cultural, regulatory, and industry factors.

RESEARCH METHODOLOGY

- Primary source through circulation of questionnaire to employees at middle management and senior management levels in corporates
- Secondary source through information available on public domain

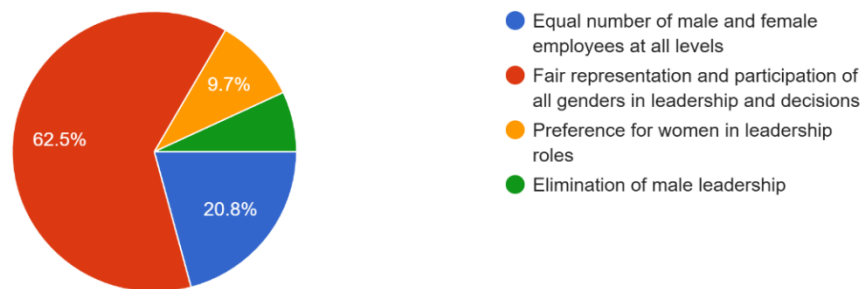
Case Studies and Sector Evidence

- Studies on Indian firms suggest that beyond mere quota fulfillment, higher intensity of female participation correlates with improved performance and governance outcomes.
- Research examining customer satisfaction underscores that boards with a critical mass of women (e.g., >25%) can significantly influence external performance indicators such as customer satisfaction.
- Gender diversity also shows connections to CSR performance, indicating that female directors enhance transparency and stakeholder accountability.

DATA ANALYSIS

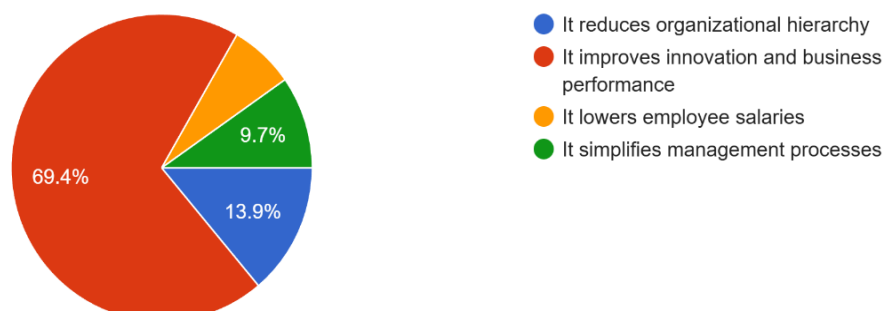
Q1.What does gender equity in corporate decision-making primarily aim to achieve ?

72 responses



Q2.Why is gender diversity important in corporate decision-making ?

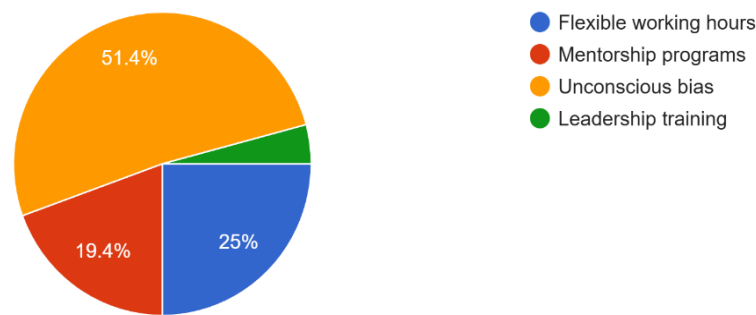
72 responses



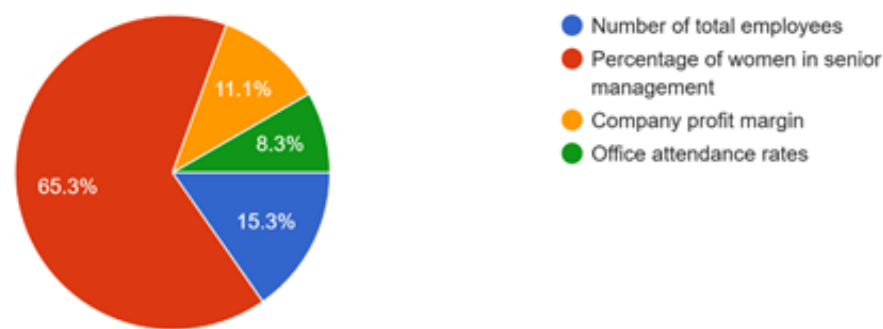
Q4.What role do corporate boards play in promoting gender equity ?
72 responses



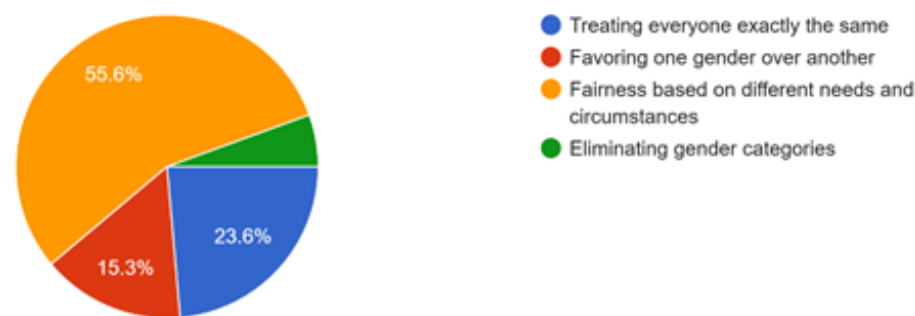
Q3.Which of the following is a common barrier to gender equity in corporate leadership ?
72 responses



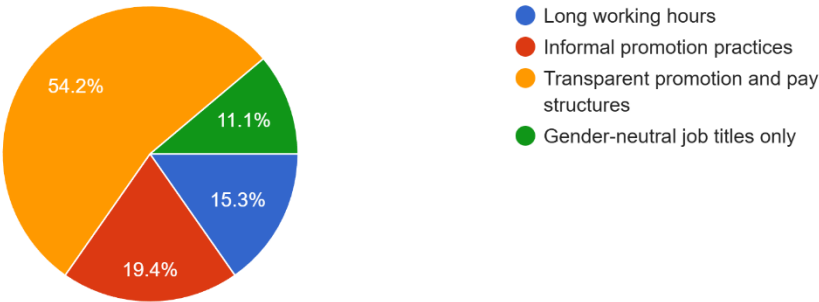
Q5.Which indicator best measures gender equity in decision-making roles ?
72 responses



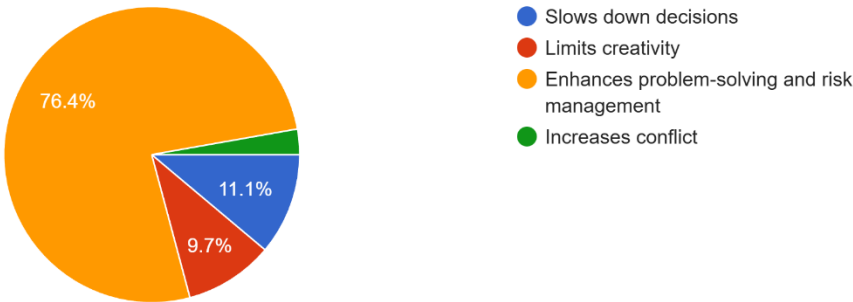
Q6.Gender equity differs from gender equality because equity focuses on ?
72 responses



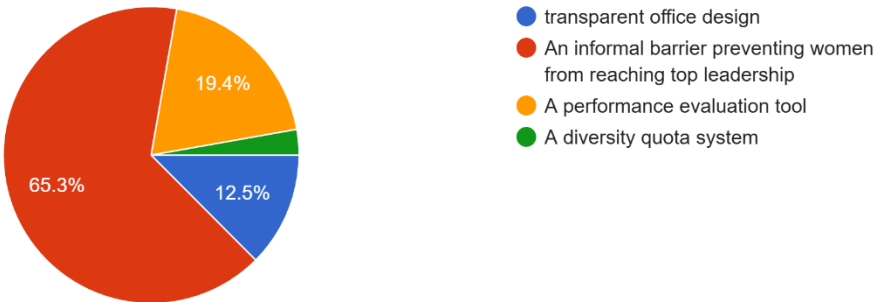
Q7.Which policy can most effectively support gender equity in corporate leadership?
72 responses



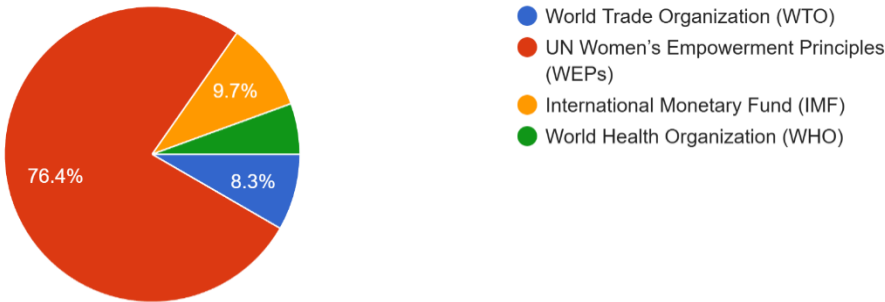
Q8.How does inclusive decision-making benefit organizations ?
72 responses



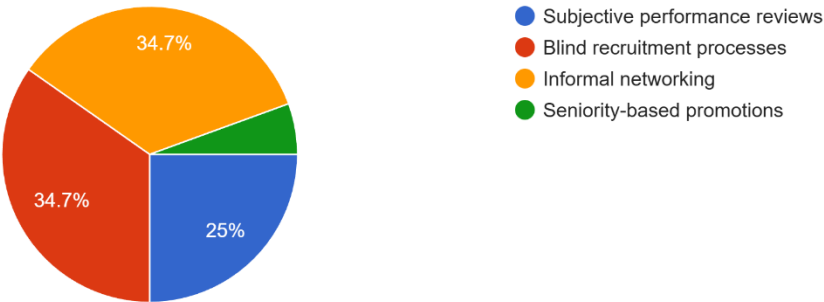
Q9.What is a “glass ceiling” in the corporate context ?
72 responses



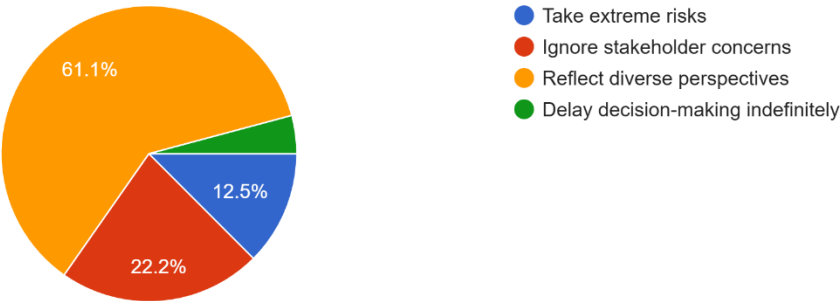
Q10.Which international initiative promotes gender equity in corporate leadership ?
72 responses



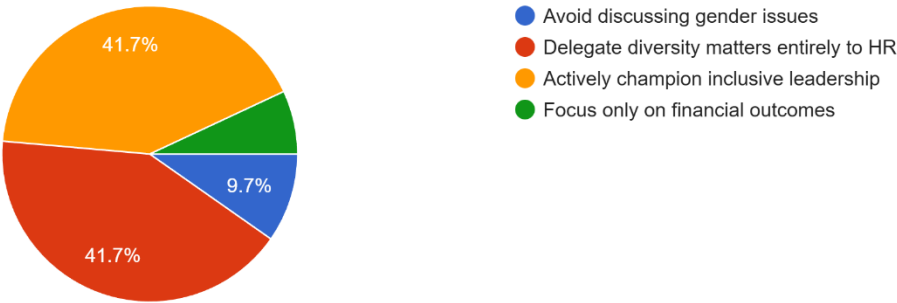
Q11.Which practice helps reduce gender bias in corporate decision-making ?
72 responses



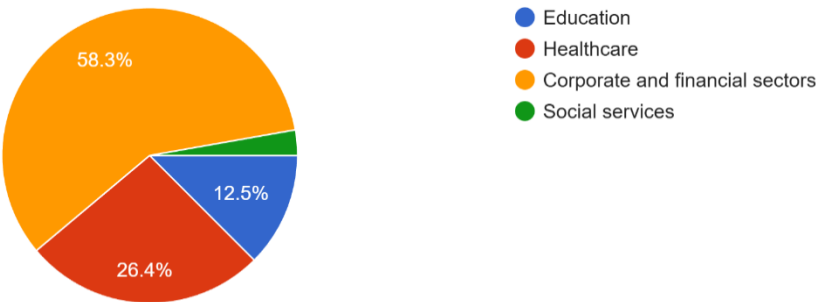
Q12. Gender-balanced leadership teams are more likely to ?
72 responses



Q13. What is a key responsibility of senior management regarding gender equity ?
72 responses

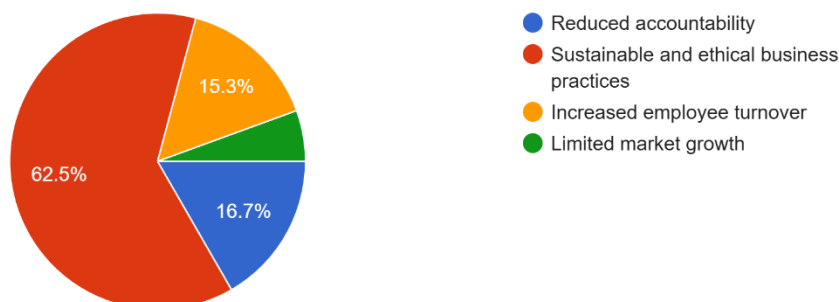


Q14. Which sector has traditionally shown lower female representation in top decision-making roles ?
72 responses



Q15. Achieving gender equity in corporate decision-making contributes to?

72 responses



FINDINGS & CONCLUSION

5. DISCUSSION

5.1 Benefits of Gender Equity in Decision-Making

- **Enhanced Board Deliberation:** Diverse viewpoints reduce cognitive biases and improve problem-solving.
- **Ethical Oversight:** Greater likelihood of ethical scrutiny and reduced agency costs.
- **Stakeholder Representation:** Broader perspectives align with stakeholder interests beyond shareholder profit.

5.2 Challenges and Limitations

- **Tokenism:** Single female appointments risk symbolic representation without real influence.
- **Context Dependence:** Cultural norms and firm structures mediate the impact of gender equity.
- **Measurement Variability:** Divergent methodologies lead to mixed performance outcomes.

SUGGESTIONS

Policy Implications

- **Quotas and Targets:** Regulatory mandates can accelerate representation, but must be paired with developmental pipelines for women leaders.
- **Leadership Development:** Encouraging mentorship and sponsorship programs to prepare women for executive roles.
- **Inclusive Governance Culture:** Strengthening organizational norms to value diverse contributions meaningfully.

CONCLUSION

Gender equity in corporate decision-making contributes to stronger governance, enriched strategic perspectives, and potentially improved firm outcomes. However, the effects vary by context, methodology, and depth of female involvement. Future research should emphasize longitudinal studies, cross-cultural comparisons, and intersectional analyses that consider race, socio-economic factors, and other dimensions of identity alongside gender.

✓ Gender Composition and Decision-Making Quality

Studies suggest that boards with greater gender diversity enhance deliberative quality, ethical oversight, and stakeholder representation. Gender-diverse boards tend to avoid groupthink and encourage more comprehensive evaluations of strategic choices.

Research also indicates that women in leadership bring distinct leadership styles, often more collaborative and participative, which can strengthen board discussions and decision quality.

✓ Impact on Firm Performance and Governance

Empirical findings are mixed:

- Some research shows positive links between board gender diversity and firm value, particularly when women are qualified and not token appointments.

- Systematic reviews find that female presence contributes unique monitoring skills but the direct link to financial performance is not always consistently significant.
- Specific analyses reveal that gender diversity can reduce risk and financial distress, suggesting stronger governance mechanisms.
- ✓ **Regulatory Interventions and National Contexts**
- In jurisdictions like India, gender equity requirements have significantly increased female board appointments, though representation in senior management remains low.
- In the UK, voluntary targets for board gender equity have led to women holding over 40% of board positions in major companies, showing progress but indicating a need for broader leadership equity.

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2. The Cascade Effect of Women on Boards: How Firm-Level Gender Diversity Management Develops Intellectual Capital (2024). *Corporate Governance: The International Journal of Business in Society*, 25(8), 132–155. <https://doi.org/10.1108/CG-11-2024-0577> — explores how gender diversity contributes to intellectual capital and decision making.
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ANALYZING THE IMPACT OF FINANCIAL MANAGEMENT IN MANUFACTURING INDUSTRIES AT NAGPUR MIDC AREA

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1) ABSTRACT

Financial Management is essential for the sustainability and keenness of manufacturing industries, impacting occupation, improvement, and GDP progress. It involves strategic planning, controlling, and optimizing financial resources to achieve organizational objectives effectively. Key aspects include budgeting, cost control, investment appraisal, working capital management, and risk mitigation. Exclusive challenges such as wealth strength, fluctuating raw material values, and difficult supply chain dynamics want tailored financial management performs. Conducting comprehensive studies in this area can offer valuable insights to practitioners, policymakers, and researchers, enhancing financial decision-making, driving innovation, and fostering sustainable growth in the manufacturing sector.

Financial Management is a process that organises financial activities from planning, implementation and control to financial accountability. This research purposes to find out the definition, principles and ideas of return valuation in financial management. This research is literature research, and the data used is primary & secondary data from various literatures. Qualitative descriptive method is used to assess the data obtained. Based on the description of the findings, financial management can be interpreted as business activities related to the acquisition, use and management of company funds to achieve the company's main objectives. Good financial management is certainly needed. The requirement for financial management can be decided as the essential to classify the purposes that must be met, the correct choice is the one that advances the company's aims; usually, the purpose of financial management choices is to maximise the company.

Keywords: Financial Management, GDP Growth, Budgeting, Cost Control, Investment Appraisal, Working Capital Management, Risk Mitigation.

2) INTRODUCTION

DEFINITIONS: Management is the process of planning, organizing, executing, and controlling organizational resources to achieve organizational goals effectively and efficiently. **Finance** can be defined as the art and science of handling cash. **Financial Management** involves planning, organizing, executing, and controlling an organization's funds. It encompasses various activities such as budgeting, liquidity, financing, risk management, investment analysis, and financial reporting. This is important not only for large companies or organizations but also for individuals managing their finances. With adequate financial management, entities or individuals can organize their income and expenses more systematically, identify suitable investment opportunities, and avoid financial issues that could threaten long-term financial stability. **Financial Management means** an individual's belief in their ability to manage a budget, make proper investments, or avoid unnecessary debt. These beliefs influence their level of independence in making financial decisions.

CONCEPTUAL FRAMEWORK OF FINANCIAL MANAGEMENT:

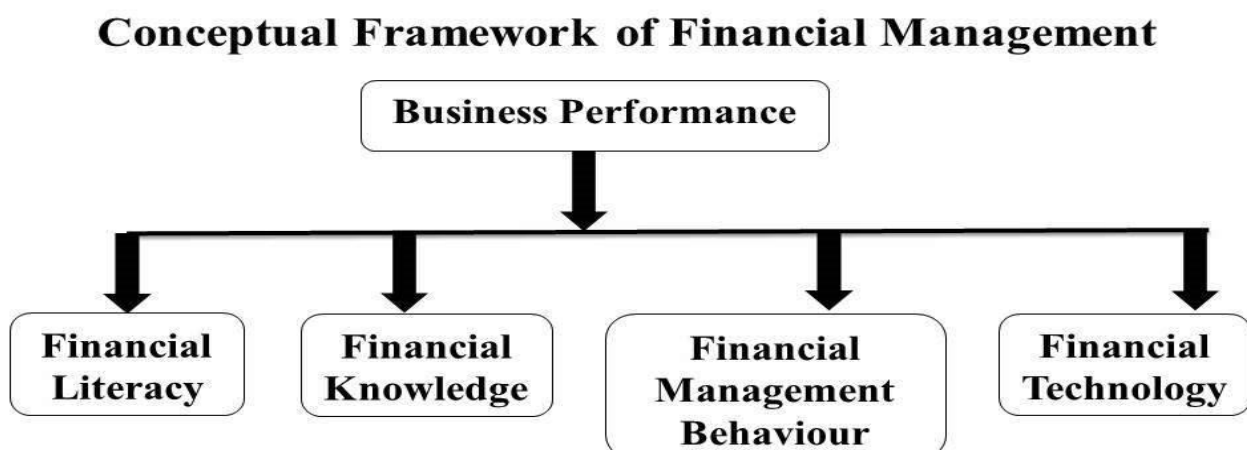


Fig.1: Conceptual Framework of Financial Management

Organization of Finance Function

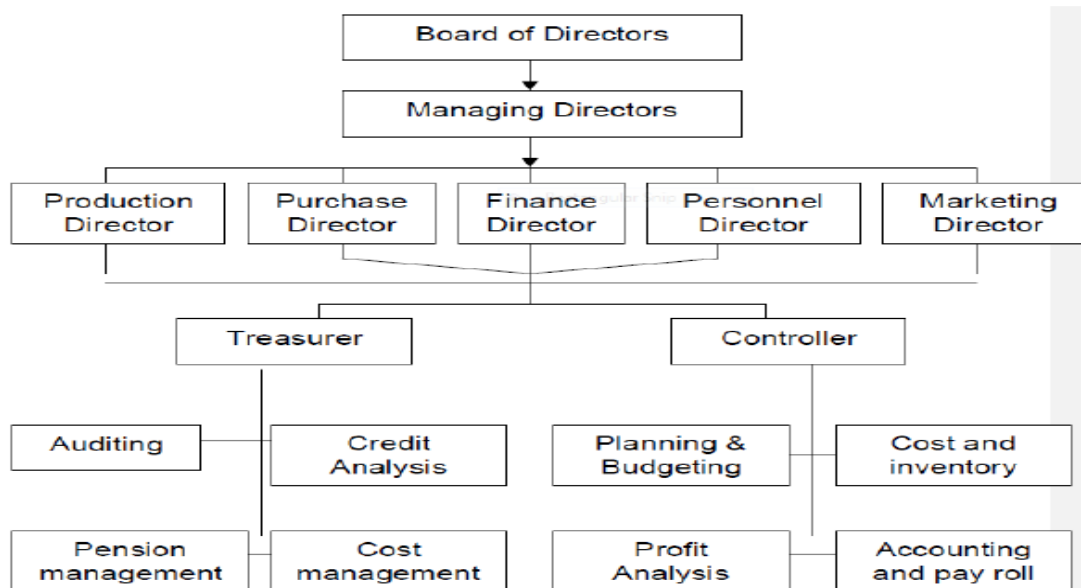


Fig.2: The Organization of Financial Management Function

Research Questions: This study aims to determine the Financial Management Practices and Challenges among the selected companies. Specifically, it seeks to fulfil the following questions: **What is the business profile of the respondents in terms of**

- ✚ Nature of the Organization;
- ✚ Number of Years Operating;
- ✚ Number of Employees; and Business Size?
- ✚ What are the financial management practices of the organization in terms of:
- ✚ Budgeting; Working Capital Management; and Long-term Financing?
- ✚ What are the financial management challenges of the organization in terms of:
- ✚ Product Costing; Product Promotion;
- ✚ Internal Management; and Statutory Mandates?

Nature of Financial Management

- ❖ Financial management is an essential portion of complete management. Acquisition, maintenance, replacement of assets, sources and costs of different capital, production, marketing, finance and personal decisions are the activities in a firm.
- ❖ The Central focus of financial management is valuation of firm. That is financial decisions are directed at optimizing the value of the firm.
- ❖ It involves risk return, trade off. Decisions on investment involve choosing the type of assets, which generate returns accompanied by risks. Generally higher the risk, returns must be greater and vice-versa.
- ❖ It affects the survival, growth and vitality of the firm. The amount, type, sources, conditions and cost of finance influence the functioning of the unit.
- ❖ It is the concern of every concern – small or big, individual or corporate undertakings.
- ❖ It is a sub-system of the business system, which has other sub-systems like production, marketing etc.
- ❖ The external legal and economic environment influences it. The investor preferences, stock market conditions etc. affect financial decisions of the business.
- ❖ Finance functions are generally centralized, i.e., more decisions is taken at the top level and ensures unified directions to investment and financing functions.

FINANCIAL MANAGEMENT APPROACHES

- 1) **Traditional Approach:** Focuses on procurement of funds from investors, financial institutions, and investment bankers. Decision making is ignored. Focus was on long term financial problems, working capital management was not given important. Financial management was confined to important events like mergers and acquisitions. This method ignores price and wealth, wealth construction estimate of firms, etc.
- 2) **Modern Approach:** Modern approach focuses on effective utilization of funds which were raised efficiently. It discusses on investment decision, financing decision and dividend decision.

OBJECTIVES OF FINANCIAL MANAGEMENT

- 1) **Profit / EPS Maximization:** According to this concept, a firm should undertake all those activities which add to its profits and eliminate all others which reduce its profits. This objective highlights the fact that all decisions-financing, dividend and investment, should result in profit maximization. Currently, most of big business under taking witness a divergence among ownership and management and business is dependent mainly on loan and borrowed funds and only a small portion being financed out of owner's funds. Hence, profit maximization will only act as a narrow objective.
- 2) **Wealth Maximization:** According to this concept, finance manager should take such decisions which increase net present value of the firm and should not undertake any activity which decrease net present value. This idea eliminates all the three simple criticisms of the income maximization idea. Modern thinkers consider wealth maximization as key objective of financial management. This is also known as value maximization or net present worth maximizations. This shareholders wealth maximization is evident from increase in the price of shares in the market.

AFFECTING FACTORS OF FINANCIAL MANAGEMENT:

INTERNAL FACTORS (COMPANY/INDIVIDUAL)

- **Income & Expenses:** Your income level dictates savings/spending; managing expenses is key to stability.
- **Cash Flow:** The ability to manage day-to-day capital and meet obligations.
- **Cost of Capital:** The expense of obtaining funds (debt vs. equity).
- **Risk Management:** Assessing and balancing risk vs. return
- **Financial Literacy & Behavior:** Knowledge, attitude, and self-efficacy impact decisions.
- **Capital Structure:** The mix of debt and equity used.

EXTERNAL FACTORS (ECONOMIC & MARKET)

- **Market Conditions:** Booms (favour equity) vs. depressions (favour debt) influence financing.
- **Inflation & Interest Rates:** Affect borrowing costs and investment returns.
- **Tax Rates:** Interest on debt is tax-deductible, impacting its cost.
- **Economic Indicators:** GDP growth and overall economic health.
- **Government Policies:** Affecting market liquidity and investment.

KEY DECISION AREAS AFFECTED

- **Investment Decisions:** Choosing assets with optimal return and risk.
- **Financing Decisions:** Sourcing funds (debt/equity) based on cost, risk, market.
- **Dividend Decisions:** How much profit to retain vs. distribute.
- **Working Capital Management:** Managing short-term assets and liabilities.

3) LITERATURE REVIEW

A literature review is a body of text that aims to evaluation the serious points of present information particular subjects.

Tamiru Kumsa Deresa, (2016), the study aims to asses' financial management practice Impact among small business enterprise in Woliso town. The main objective of the study was to investigate the effect of financial management practices and financial management characteristics on profitability. The target populations for the

study are the whole 135 business organizations found in woliso town. To reach the targeted goal, primary and secondary data were also collected. The study revealed that majority of the business get the loan from micro finance institution found in the study area and cash receipt is not recorded well, in contrast, majority of payment is recorded on daily basis.

Pamela Priess, (2017), in the current competitive market, innovation has become a crucial element for organizations, willing to grow. Financial management in this regard is playing a significant role in improving firms' innovation capacity. The research discovers an important influence of the financial management model on firms' improvement. The three components: liquidity, controlling, and financial literacy are statistically significant in explaining innovativeness at 1% level. The study suggests focus on the three financial management constructs in order to improve their innovation capability and capacity.

Siti Sukenti, (2023), Financial management is a financial management process that organises financial activities from planning, implementation and control to financial accountability. However, when it comes to educational institutions, the impact is quite significant. These research goals to discover out the definition, principles and thoughts of return valuation in financial management. This research is literature research, and the data used is secondary data from various literatures. Qualitative descriptive method is used to assess the data obtained. Founded on the explanation of the findings, financial management can be understood as business actions connected to the gaining, use and management of company capitals to attain the company's key purposes.

M Vidya Shree & Amoghavarsh H, (2024), financial management is crucial for the sustainability and competitiveness of manufacturing industries, impacting employment, innovation, and GDP growth. It involves strategic planning, controlling, and optimizing financial resources to achieve organizational objectives effectively. Key aspects include budgeting, cost control, investment appraisal, working capital management, and risk mitigation. Single challenges such as wealth strength, changing raw material values, and difficult supply chain dynamics want tailored financial management performs. Conducting comprehensive studies in this area can offer valuable insights to practitioners, policymakers, and researchers, enhancing financial decision-making, driving innovation, and fostering sustainable growth in the manufacturing sector.

4) RESEARCH OBJECTIVES

The following are the main objectives frame for the research work

- 22.To Study and understand the concept of Financial Management at Pharma Manufacturing Industries in Nagpur MIDC Area.
- 23.To Study and understand the affecting factors of Financial Management at Pharma Manufacturing Industries in Nagpur MIDC Area.
- 24.To measure the Impact of Financial Management at Pharma Manufacturing Industries in Nagpur MIDC Area.

5) RESEARCH METHODOLOGY

In execution of analysis, data collected from 2024 to 2025 are used.

- **Research Area:** Nagpur District
- **Manufacturing Companies:** Pharma Manufacturing Companies
- **Companies Names:** Zydus Life sciences, Glaxo Smith Kline, Dr. Reddy's, Cipla Pharmaceutical, Lupin Limited. Etc...
- **Research Instrument:** Individual Meeting
- **Investigation Plan:** Descriptive
- **Data Type:** Primary & Secondary records
- **Connection Technique:** Company Records Survey, By Phone, Personal Meeting
- **Total Population :** 10000 Employee's in Pharma Companies
- **Sample size:** 100 Employee's in Pharma Companies
- **Sampling Technique:** Random Sampling Technique
- **Analysis Tools:** Percentage Analysis with Likert Rating Scale 1-5

6) RESULTS AND DISCUSSIONS:

Affecting factors of Financial Management:

- Income & Expenses : A
- Risk Management: B
- Financial Literacy: C
- Market Conditions: D
- Inflation & Interest Rates: E
- Tax Rates: F
- Economic Indicators: G
- Government Policies: H

Options	Options Rating	Satisfaction Score level	Assigned Score
1	Always/Strongly Agree/ Outstanding	80% -100%	5 means = 1.00
2	Agree / Often / Very good	60% - 80%	4 means = 0.80
3	Neutral / Occasionally / Good	40% - 60%	3 means = 0.60
4	Rarely/Disagree/Below Agree	20% - 40%	2 means = 0.40
5	Never / Strongly Disagree	00% - 20%	1 means = 0.20

Table1.1 Attained Average Score against 5 Point Scale

Production/Manufacturing Dept. Responses									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	168	148	152	160	147	159	134	167	1235
AVG	1.68	1.48	1.52	1.60	1.47	1.59	1.34	1.67	1.54375

Marketing Dept. Responses									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	157	153	150	164	168	154	149	147	1242
AVG	1.57	1.53	1.50	1.64	1.63	1.54	1.49	1.47	1.5525

Personnel Dept. Responses									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	154	156	159	164	157	150	142	147	1229
AVG	1.54	1.56	1.59	1.64	1.57	1.50	1.42	1.47	1.53625

Material/ Inventory Dept. Responses									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	161	168	152	147	139	150	154	145	1216
AVG	1.61	1.68	1.52	1.47	1.39	1.50	1.54	1.45	1.520

Account Dept. Responses									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	143	159	157	142	146	139	147	140	1173
AVG	1.43	1.59	1.57	1.42	1.46	1.39	1.47	1.40	1.46625

SAMPLE	Production / Manufacturing Dept.	Marketing Dept.	Personnel Dept.	Material / Inventory Dept.	Account Dept.	Weightag e
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NO 01 TO 100	A	168	A	157	A	154	A	161	A	143	783
	B	148	B	153	B	156	B	168	B	159	784
	C	152	C	150	C	159	C	152	C	157	770
	D	160	D	164	D	164	D	147	D	142	777
	E	147	E	168	E	157	E	139	E	146	757
	F	159	F	154	F	150	F	150	F	139	752
	G	134	G	149	G	142	G	154	G	147	726
	H	167	H	147	H	147	H	145	H	140	746
SUM	1235		1242		1229		1216		1173		6095
Mean Value	154.375		155.250		153.625		152.000		146.625		152.375

Table 1.2 Results of Overall Performance of Financial Management at Pharma Manufacturing Industries in Nagpur MIDC Area.

Employees Performance and Efficiency Improvements for all affecting factors	Avg Score Against 5 Point Scale	% of Performance Progresses	% of Performance till not Improvements
Production/Manufacturing Dept.	1.54375	69.125%	30.875%
Marketing Dept.	1.5525	68.950%	31.050%
Personnel Dept.	1.53625	69.275%	30.725%
Material/ Inventory Dept.	1.5200	69.600%	30.400%
Account Dept.	1.46625	70.675%	29.325%
Avg %	69.525%		30.475%
Performance	Very good (60% - 80% achievement)		

Parameters (Variables)	Weightage	Resp. Avg. (500)	% of Performance in Improvements	% of Performance not Improvements
A = Income & Expenses	783	1.566	68.68%	31.32%
B = Risk Management	784	1.568	68.64%	31.36%
C = Financial Literacy	770	1.540	69.20%	30.80%
D = Market Conditions	777	1.554	68.92%	31.08%
E = Inflation & Interest Rates	757	1.514	69.72%	30.28%
F = Tax Rates	752	1.504	69.92%	30.08%
G = Economic Indicators	726	1.452	70.96%	29.04%
H = Government Policies	746	1.492	70.16%	29.84%
% of Average Performance			69.525%	30.475%

7) CONCLUSIONS

- ❖ Conclusion Established on investigation findings and discussion. It can be decided that, the efficiency of financial management practices and characteristics can bring about higher profitability. Therefore, business organizations can improve profitability by raising the efficiency of financial management practices and characteristics. Sound financial management is essential to the success of businesses organizations.
- ❖ Financial Performance Evaluation will help a company to understand different sides of their business operations on one hand where by analyzing performance in a certain period and help the company to forecast their future business performances. This information obtained on business performances can be used by number of parties, different stakeholders which include shareholders, creditors, employees, tax authorities, government, media, etc.
- ❖ The lack of understanding of accounting information presented in the form difficult to understand could act as barriers in implementing sound financial systems. Therefore, owner of the business should focus on sound financial management practice.
- ❖ Successfully managing financial resources is important in new as well as expanding business. Therefore, time should be taken to develop and implement financial management practices that ensure success of

business enterprises. The action and inactions of owners of small firms could also act as significant barriers to the development of sound financial management systems.

- ❖ All the mentioned parties can use this information of performance evaluation with an aim to assess the business operations of the firm, future of the company and can contribute towards decision making process of the company as evaluation will bring a clear image on the organizations' financial health or status, the financial feasibility, profitability and resource management.
- ❖ Also with the right information investors and shareholders will be able to make the right decision in terms of their investments where proper opportunities can be identified regarding the potential of positive outcome of it. Financial management decisions can be grouped into four broad categories namely, investment decision, capital structure decision, working capital decision and dividend policy decision. All these decisions aim at maximizing the return and minimizing the risk.

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AN EMPIRICAL ANALYSIS OF AWARENESS REGARDING REVERSE MORTGAGE LOANS IN THE NAVI MUMBAI REGION OF MAHARASHTRA

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ABSTRACT

Senior citizens hold a respected position in Indian society. After dedicating much of their lives to earning a livelihood, they deserve a stress-free retirement. Advances in healthcare have contributed to longer life expectancy, making financial security essential for the elderly. A steady cash flow is crucial for maintaining independence, and a reverse mortgage offers a viable solution. This financial tool allows elderly homeowners to leverage their property for income, ensuring financial stability in old age.

This research paper examines how demographic factors influence awareness levels regarding reverse mortgage loans. In India, middle-aged individuals tend to be more aware of this option than senior citizens. They recognize its potential as a reliable income source, especially amid economic inflation and shifting cultural dynamics. Greater awareness of reverse mortgages can help stakeholders refine policies and improve product outreach. Encouraging potential investors to utilize this financial tool can provide long-term financial benefits.

Key words- Reverse mortgage loan awareness, retirement plan, ageing India, senior citizens

JEL Classification: G21, R30, R31

I. INTRODUCTION

Post-retirement life is often considered the most relaxing phase in everyone's life. During this second innings, elderly people aspire to lead a healthy life with sufficient cash flows to meet their necessary expenditures. Indian society and culture are renowned for their respect toward elders. More than 68% of elderly Indians expect support from their children during their post-retirement years. However, in many cases, children do not meet their expectations, and only 30% of them can provide financial support to their parents (Sanghvi, 2018).

Although financial awareness is gradually growing in the urban population, only a small percentage of the urban elderly population is concerned about their post-retirement residential care. According to a report (Sanghvi, 2018), about half of the elderly urban population were concerned about their post-retirement residential care; however, only 65% of them were aware of the costs of living in an old-age home. Many elderly people prefer to work after retirement due to reasons such as expecting a higher standard of living, better health conditions, and living an independent life. Around 70% of the elderly population anticipates working after retirement as their current savings are insufficient to meet their future expenditures. Older people with sufficient wealth and education are likely to invest more in financial products for better returns; however, they do not emphasize risk adjustment in their investment portfolios. The reason is their belief that self-owned property is the dominating asset in their portfolios and gives less priority to other investment options (Fong et al, 2021).

Sanghvi (2018) explained that post-retirement life is divided into two stages: the first stage, which comes immediately after retirement, when you have sufficient savings and can easily manage regular expenses; and the second stage comes afterward when healthcare expenses increase and there is a lack of sufficient income sources. Most people believe that the first stage will last long enough, and many of them believe that the available pension amount will be sufficient for this stage of post-retirement. Only 54% of Indians prefer to save for the final stage of retirement from their savings.

The Indian government introduced the reverse mortgage loan (RML) scheme in their 2007-08 Union budget for elderly homeowners who want to generate a regular income from their property. This loan scheme is very famous in developed countries. A reverse mortgage loan is a type of property mortgage scheme specially designed for senior citizens. This scheme is an assuring financial solution for elderly homeowners. The appealing feature of this scheme is that the elderly property owner can stay in their property without worrying about loan repayment. The possibility for loan pay-off only arises when the last surviving borrower passes away, sells the property, or permanently moves out of the property. This loan scheme is exactly the opposite of a forward/regular loan scheme. In a forward loan, the borrower keeps their property on the mortgage and pays EMIs to the banks, including the principal amount and interest. In a reverse mortgage, it is vice versa in which individuals above 60 years of age can mortgage their property to the bank and get periodic payments during the

complete loan tenure. The borrower does not need to repay the loan until the last surviving borrower passes away or sells the property or permanently moves out of the property.

Since the inception of the reverse mortgage scheme in India, the response of Indian citizens toward the reverse mortgage loan scheme has been very low. One reason is that the product itself is not well understood in India (Nagar et al, 2022).

Vivek (2017) mentioned that by the year 2031, the population of elderly people is expected to grow the fastest among all age groups; whereas, an individual's savings for their post-retirement life are not growing significantly. According to an August 2017 report from the Reserve Bank of India's committee on household finance, only 23% of Indian citizens had initiated their post-retirement financial planning till 2016.

According to the 71st round of the National Sample Survey Office (NSSO, 2014), around 8.1% of the urban Indian population are senior citizens. In urban areas, 80% of elderly people were dependent on their children for economic support. It is expected that elderly people's dependency on their children will reduce in the future, and it will further reduce up to 50% by the year 2031. The reason behind the reduction in the dependency ratio in the future is that nowadays, Indians have initiated savings and investments for their post-retirement years to live an independent and happy second inning of their life (National Sample Survey Office, 2014).

The Pension Regulatory and Development Authority of India (PRDAI) was a major development for improving pension policies. Generally, financial planners consider a wider range of pension products for retirement planning; however, the returns from most of these products will be subjected to market volatility as these products are market risk-oriented schemes. The risk appetite of the majority of Indian elderly citizens may be poor due to which they are reluctant to invest in these market-linked pension products.

Accessibility of financial products has increased in the Indian market, making awareness about them imperative. Although current requirements show that financial awareness is necessary for better post-retirement planning, only one-third of the population has the financial literacy needed to manage it. Some other factors such as low levels and irregular sources of income are adversely affecting financial literacy (Choudhary and Kamboj, 2017).

Some smart people know how an economy works. Their general intelligence also encourages them to look after their financial outcomes effectively. Apart from economic awareness, financial literacy, socioeconomic environment, and political policies; the cognitive ability of an individual also plays an important role in multiple financial outcomes (Lin and Bates 2022).

Reverse mortgage in India:

The reverse mortgage scheme was instituted by the Government of India in its Union budget 2007-08. The National Housing Board (NHB) is the responsible authority for enforcing the rules and regulations regarding the reverse mortgage scheme in the country. The reverse mortgage method allows a borrower, having a home without a loan, to mortgage their property to a lender and receive a regular cash flow, depending on the valuation of their house. A special feature of this scheme is that the borrower continues to live in the home until their death or sale of the property, or they leave the house permanently. In case of exemption to either of the mentioned conditions, the borrower or their heirs have to pay back the loan sum obtained, along with accumulated interest to the lender. The reverse mortgage loan scheme has a beneficial characteristic that the borrower need not pay off the loan (non-recourse loan) until the loan becomes due and payable (Mahalingam, 2013).

II. LITERATURE REVIEW

In India, numerous research studies have been conducted on the reverse mortgage loan scheme. An extensive literature review was carried out to identify areas that require further research.

Ingale (2017) noted that in India, the annual population growth rate is 1.9%; however, the annual growth rate of the elderly population is 3%, exceeding the general growth rate. Census figures indicate that the elderly constituted 5.3% of India's total population in 1961, expected to reach 9.9% by 2021.

Sinha (2019) highlighted that similar to developing countries, Indians do not receive social security aid from the government. In the absence of appropriate social security funds, the elderly population requires substantial financial support for their old age expenses. The traditional Indian family system could potentially aid in this aspect.

Ukey (2014) observed that senior citizens aspire to lead their post-retirement life independently and with dignity and peace. These expectations pose challenges as they have experienced a high standard of living during their early years, often failing to save and plan adequately for retirement based on their needs and lifestyle.

Dasari (2017) found that developed countries offer various established products and schemes to enhance the quality of life during old age. Developed economies prioritize social security over pensions for their citizens' necessities, leading to an increasing count of senior citizens due to better living standards and healthcare facilities.

Bhardwaj (2020) observed that India's population comprises various demographics, including income structure, family setup, household expenditure priorities, the number of income earners in a family, dependency on old age family members, property location, and valuation. Considering these diverse demographic factors, proper planning before targeting specific segments is crucial for the success of the reverse mortgage loan in the Indian market.

Pushpa (2021) studied that a majority of Indians do not plan for their retirement. It is crucial for current salary earners to understand their post-retirement financial needs, utilizing the available pension plans for planning their second innings in life. Educating young Indians about these plans is essential for maintaining a comfortable standard of living during their non-earning years.

Ghosh (2013) explained that as per the 2013 NHB reports, Rs. 1,800 crores worth of reverse mortgage loans have been sanctioned since its inception, with a total disbursement of Rs. 800 crores.

Awareness of the old age pension scheme is significantly high in India. It was also observed that regardless of gender, Indians generally seek to maximize the utilisation of various old age schemes available in the Indian market (Devi *et al*, 2021).

Kapadia (2020) identified that personal financial literacy and awareness should be integral for all generations. Financial planning for old age is equally essential as planning for middle-age expenses.

Sharma (2015) emphasizes that financial literacy among youths plays a pivotal role in a country's financial awareness. Today's financially literate youth will be tomorrow's senior citizens and can aid in improving the financial planning of life-long savings for the elderly.

According to NHB records, the loan scheme is functioning well in India, yet there are still some unexplored areas. The present research attempted to investigate the relationship between potential investors' demographic factors and their awareness levels regarding the reverse mortgage loan scheme.

III. RESEARCH METHODOLOGY

Research design is at the core of the research work which starts with deciding the data sources as per the defined objectives, hypotheses, and scope of the study. The research design of the present study is descriptive and exploratory research.

Descriptive research is to describe the data and characteristics of what is being studied, and it helps us to get a better understanding of the research topic. The main intention was to understand the current status of awareness and interest in reverse mortgage loan schemes in the Indian market scenario. For that, the required data was collected from potential investors, of age above 40 years, regarding their demographic and social factors like age, gender, employment type, post-retirement financial options, etc. Exploratory research is typically conducted to gain a higher understanding of the prevailing drawback. Few studies were earlier conducted on RML in India; however, there is a need to further explore the RML perception as there is a lack of research done in the Navi Mumbai region of Maharashtra state. Hence, an exploratory research method was preferred for the data collection.

1. Objectives of the study

The principal objective of the research is to study and analyze the awareness level among potential investors towards reverse mortgage loans in the current Indian market scenario.

2. Data Collection

The data collection was done from both primary and secondary sources.

i) Primary data – Primary data was collected through structured questionnaires via direct interviews, field visits, and e-mails. The respondents were selected individuals (sample) from the Navi Mumbai region of Maharashtra state. Navi Mumbai is a hot spot for housing finance growth in the state of Maharashtra in India. The population residing in this region is a heterogeneous population from a demographic and socio-economic point of view.

This region can give a micro-picture of the Indian market scenario. However, there is a lack of systematic study regarding the potential of reverse mortgage schemes in this region. Due to this, many customers and regulators are unable to identify the current market trends and expectations of the potential investors in the Indian market scenario.

ii) Secondary data – The study has also incorporated secondary data like current research on reverse mortgages in India and overseas, product information from the websites of the banks and finance companies, census reports, info on old age population estimates, aging of the Indian population, life expectancy and mortality rate.

3. Sampling techniques

i) Universe – The universe for the research work included individuals of the age group 40 years and above. The respondents identified as individuals who are residing in the urban parts of Navi Mumbai region of Maharashtra, individuals who have started planning for their post-retirement, senior citizens who are facing a liquidity crunch, citizens who are investing for long term-gain, elderly people who are approaching a bank for the financial facility during their old age days. These individuals include government employees, private sector employees, part-time job-holders, self-employed, retirees, and unemployed/housewives.

ii) Sampling method – The population involved is infinite and respondents are not homogeneous. Hence, the “Stratified random sampling” method was used for selecting samples from the defined population. This sampling method is used mainly when it is a cost-effective and time-saving sampling method.

iii) Sample size – The data was collected from 808 respondents of the age group of 40 years and above, who were worthy to employ the reverse mortgage loan amenity or can use it in the next 20 years. 520 (64.4%) of the total respondents were aware of the reverse mortgage loan scheme. Hence, the data regarding the different levels of awareness were collected from these 520 aware respondents. This data was analyzed on SPSS 16.0 software for statistical analyses.

IV. DATA ANALYSIS AND INTERPRETATION

Analysis of the compiled data was based on varied components. Data interpretation is another part of the analysis. Interpretation helps in reviewing the purpose of arriving at a specific conclusion. The interpretation of data assigns a meaning to the information analyzed and determines its signification and implications.

This analysis helped in understanding the current scenario, interest, and awareness of the reverse mortgage market in the Indian economy. The criteria for data collection are as follows:

Table 1: Demographic profile of the respondents

Demographic factors	No. of respondents	% of Total
Gender		
Female	88	16.9
Male	432	83.1
Age		
40 – 50	104	20
51 – 60	192	36.9
61 – 70	152	29.2
71 and above	72	13.8
Annual Income (per Annum in Lacs)		
less than 3	120	23.1
3 – 6	188	36.2
6.1-10	104	20
10.1-15	60	11.5
Above 15	48	9.2
Employment Type		
Part time job holder	6	1.2
Retired	192	36.9
Self Employed	80	15.4
Private Sector employee	120	23.1

Government Employee	110	21.2
Unemployed/Housewife	12	2.3
Post retirement income source		
No	199	38.3
Yes	321	61.7

1. Hypotheses testing

To evaluate the validity of data analysis, hypotheses were developed in compliance with the objectives of the study. Hypothesis testing decides whether to accept or reject a particular hypothesis. For the testing of hypotheses, chi-square test (χ^2) was used. The Chi-square test gives “goodness to fit” between the observed and expected data. The null hypothesis (H_0) shows that there is no significant difference between the expected and observed results. These null hypotheses were tested by the chi-square test. The null hypothesis was formulated in line with the stated hypotheses for the research work. If the significance value of the chi-square test is less than 0.05, the null hypothesis will be rejected.

This section includes the testing of the null hypothesis using the chi-square test of independence. Hypotheses testing will be done between the demographic factors such as gender, age, annual income, employment type and post-retirement income, and different levels of awareness among the potential investors of the reverse mortgage loans. The reverse mortgage awareness level includes awareness and interest towards RML, tax-exemption awareness, valid insurance requirements for the property, and post-retirement residential preference in the self-owned property. Various demographic factors were the independent variables and different levels of awareness were the dependent variables.

i) Gender and level of awareness towards reverse mortgage loan:

The demographic factor of gender includes two categories: male and female. The hypotheses statements formed for these factors are as follows:

H₀1.1: There is no significant difference in the level of awareness among the potential investors of different gender groups towards the reverse mortgage loan.

H_a1.1: There is a significant difference in the level of awareness among the potential investors of different gender groups towards the reverse mortgage loan.

H₀1.2: There is no significant difference in the level of awareness among the potential investors of different gender groups towards the tax-exemption aspects of the reverse mortgage loan.

H_a1.2: There is a significant difference in the level of awareness among the potential investors of different gender groups towards the tax-exemption aspects of the reverse mortgage loan.

H₀1.3: There is no significant difference in the level of awareness among the potential investors of different gender groups towards the requirement of valid property insurance for the reverse mortgage loan.

H_a1.3: There is a significant difference in the level of awareness among the potential investors of different gender groups towards the requirement of valid property insurance for the reverse mortgage loan.

H₀1.4: There is no significant difference in the level of awareness among the potential investors of different gender groups and their interest in the reverse mortgage loan.

H_a1.4: There is a significant difference in the level of awareness among the potential investors of different gender groups and their interest in the reverse mortgage loan.

H₀1.5: There is no significant difference in the level of awareness among the potential investors of different gender groups and their preference to stay in the self-owned property as a primary residence after retirement.

H_a1.5: There is a significant difference in the level of awareness among the potential investors of different gender groups and their preference to stay in the self-owned property as a primary residence after retirement.

Table 2: Chi-square test for the potential investors’ gender and level of awareness towards the reverse mortgage loan

Pearson Chi-Square	Value	df	Asymp. Sig. (2-sided)	Result
Gender				

Product awareness	114.114	1	.000	Rejected
Tax exemption	75.406	1	.000	Rejected
Valid property insurance requirement	68.287	1	.000	Rejected
Interest towards RML	40.066	1	.000	Rejected
Preference to stay in self-owned property as a primary residence after retirement	37.516	1	.000	Rejected

Table 2 shows that the significance values of the test for the level of awareness among different gender groups towards the reverse mortgage loan are .000. This is suggestive, but not conclusive, evidence of a relationship between the two gender groups i.e. male and female for the different levels of awareness and interest towards the reverse mortgage loan.

It shows the significance values of the test for all levels of awareness are .000. Since these values are less than 0.05, it can be concluded that the association in the cross-tabulation is real and not due to any chance. Hence, the null hypotheses that there are no significant differences in the different levels of awareness among the potential investors of different gender groups towards the reverse mortgage loan are rejected.

Interpretation: In the Indian scenario, both males and females have the same level of awareness. Along with product awareness, they also have awareness about other requirements of the product. Due to continuous growing expenses and the requirement of regular cash flows, people are trying to figure out different ways for the best utilisation of available resources and major investments that can generate income in the future.

ii) Age group and level of awareness towards reverse mortgage loans:

The data was collected from potential investors whose age was 40 years or above. This factor is divided into 4 different groups i.e. 40-50, 51-60, 61-70, and 71 and above. The hypotheses formed for this demographic factor are as follows:

H₀2.1: There is no significant difference in the level of awareness among the potential investors of different age groups towards the reverse mortgage loan.

H_a2.1: There is a significant difference in the level of awareness among the potential investors of different age groups towards the reverse mortgage loan.

H₀2.2: There is no significant difference in the level of awareness among the potential investors of different age groups about the tax-exemption aspects of the reverse mortgage loan.

H_a2.2: There is a significant difference in the level of awareness among the potential investors of different age groups about the tax-exemption aspects of the reverse mortgage loan.

H₀2.3: There is no significant difference in the level of awareness among the potential investors of different age groups about the requirement of valid property insurance for the reverse mortgage loan.

H_a2.3: There is a significant difference in the level of awareness among the potential investors of different age groups about the requirement of valid property insurance for the reverse mortgage loan.

H₀2.4: There is no significant difference in the level of awareness among the potential investors of different age groups and interest towards the reverse mortgage loan.

H_a2.4: There is a significant difference in the level of awareness among the potential investors of different age groups and interest towards the reverse mortgage loan.

H₀2.5: There is no significant difference in the level of awareness among the potential investors of different age groups and their preference to stay in the self-owned property as a primary residence after retirement.

H_a2.5: There is a significant difference in the level of awareness among the potential investors of different age groups and their preference to stay in the self-owned property as a primary residence after retirement.

Table 3: Chi-square test for the potential investors' age group and level of awareness towards the reverse mortgage loan

Pearson Chi-Square	Value	df	Asymp. Sig. (2-sided)	Result
Age Group				
Product awareness	.988	3	.804	Accepted

Tax exemption	5.345	3	.148	Accepted
Valid property insurance requirement	15.919	3	.001	Rejected
Interest towards RML	20.530	3	.000	Rejected
Preference to stay in self-owned property as a primary residence after retirement	37.237	3	.000	Rejected

Table 3 describes that the significance values of the test for product awareness and tax exemption awareness are .804 and .148, respectively. Since these values are greater than 0.05, it can be concluded that there are no associations in the cross-tabulation between different age groups i.e. “40-50, 51-60, 61-70, and 71 and above” for the product awareness and tax exemption aspect of RML among different age groups towards the reverse mortgage loan. Hence, the null hypotheses are accepted for these two levels.

On the other side, the significance values for valid property insurance, interest towards RML, and post-retirement residential preference in self-owned property are less than 0.05. Hence, the test results show that there are significant differences in the potential investors’ age and above level of awareness. It is concluded that the null hypotheses for these factors are rejected.

Interpretation: Potential investors of the reverse mortgage scheme in India, having more than 40 years of age, have an awareness of the reverse mortgage scheme and its tax exemption benefits. Indians always prioritize different ways to save taxes which can be considered as one of the major reasons behind the awareness of this product. Indian psychology of dependency on children after retirement is a big obstruction in the interest and awareness of other features of reverse mortgages like self-occupancy, and valid property insurance.

iii) Income group and level of awareness towards reverse mortgage loans:

The data was also collected regarding the annual income of the potential investors. The different income groups (in lacs) are less than 3, 3-6, 6.1- 10, 10.1-15, and above 15. The hypotheses formed for the income group are:

H₀3.1: There is no significant difference in the level of awareness among the potential investors of different income groups towards the reverse mortgage loan.

H_a3.1: There is a significant difference in the level of awareness among the potential investors of different income groups towards the reverse mortgage loan.

H₀3.2: There is no significant difference in the level of awareness among the potential investors of different income groups about the tax-exemption aspects of the reverse mortgage loan.

H_a3.2: There is a significant difference in the level of awareness among the potential investors of different income groups about the tax-exemption aspects of the reverse mortgage loan.

H₀3.3: There is no significant difference in the level of awareness among the potential investors of different income groups about the requirement of valid property insurance for the reverse mortgage loan.

H_a3.3: There is a significant difference in the level of awareness among the potential investors of different income groups about the requirement of valid property insurance for the reverse mortgage loan.

H₀3.4: There is no significant difference in the level of awareness among the potential investors of different income groups and interest towards the reverse mortgage loan.

H_a3.4: There is a significant difference in the level of awareness among the potential investors of different income groups and interest towards the reverse mortgage loan.

H₀3.5: There is no significant difference in the level of awareness among the potential investors of different income groups and their preference to stay in the self-owned property as a primary residence after retirement.

H_a3.5: There is a significant difference in the level of awareness among the potential investors of different income groups and their preference to stay in the self-owned property as a primary residence after retirement.

Table 4: Chi-square test for the potential investors’ income group and level of awareness towards the reverse mortgage loan

Pearson Chi-Square	Value	df	Asymp. Sig. (2-sided)	Result
Income Group				
Product awareness	73.462	4	.000	Rejected
Tax exemption	25.949	4	.000	Rejected

Valid property insurance requirement	28.255	4	.000	Rejected
Interest towards RML	24.570	4	.000	Rejected
Preference to stay in self-owned property as a primary residence after retirement	95.985	4	.000	Rejected

According to Table 4, the significance values of the test for the different levels of awareness among the potential investors of different income groups towards the reverse mortgage loan are .000. Since these values are less than 0.05, this is suggestive that there is evidence of a relationship between different income groups (in lacs) i.e. less than “3, 3-6, 6.1- 10, 10.1-15, and above 15” for the different levels of awareness towards the reverse mortgage loan. Hence, all the null hypotheses which show that there are no significant differences in the different levels of awareness among the potential investors of different income groups towards the reverse mortgage loan are rejected.

Interpretation: In the Indian scenario, the potential investors from various income groups have the same level of product awareness. Product awareness includes awareness about the other requisites of the product. Every Indian's first dream is to buy a new home irrespective of their income bracket, and RML helps convert this immovable asset into a post-retirement income source. The growing nuclear family system, inflation, economic growth, and the wish to spend independent post-retirement life are the major reasons for awareness about the various post-retirement income alternatives.

iv) Employment type and level of awareness towards reverse mortgage loans:

The employment type includes government employees, private sector employees, part-time jobholders, self-employed, retired, and unemployed/housewives. Their levels of awareness are also affected due to these factors. Hence, the hypotheses formed are:

H₀4.1: There is no significant difference in the level of awareness among the potential investors of different employment types towards the reverse mortgage loan.

H_a4.1: There is a significant difference in the level of awareness among the potential investors of different employment types towards the reverse mortgage loan.

H₀4.2: There is no significant difference in the level of awareness among the potential investors of different employment types towards the tax-exemption aspects of the reverse mortgage loan.

H_a4.2: There is a significant difference in the level of awareness among the potential investors of different employment types towards the tax-exemption aspects of the reverse mortgage loan.

H₀4.3: There is no significant difference in the level of awareness among the potential investors of different employment types towards the requirement of valid property insurance for the reverse mortgage loan.

H_a4.3: There is a significant difference in the level of awareness among the potential investors of different employment types towards the requirement of valid property insurance for the reverse mortgage loan.

H₀4.4: There is no significant difference in the level of awareness among the potential investors of different employment types and interests towards the reverse mortgage loan.

H_a4.4: There is a significant difference in the level of awareness among the potential investors of different employment types and interests towards the reverse mortgage loan.

H₀4.5: There is no significant difference in the level of awareness among the potential investors of different employment types and their preference to stay in the self-owned property as a primary residence after retirement.

H_a4.5: There is a significant difference in the level of awareness among the potential investors of different employment types and their preference to stay in the self-owned property as a primary residence after retirement.

Table 5: Chi-square test for the potential investors' employment type and level of awareness towards the reverse mortgage loan

Pearson Chi-Square	Value	df	Asymp. Sig. (2-sided)	Result
Employment type				
Product awareness	135.920	5	.000	Rejected

Tax exemption	88.421	5	.000	Rejected
Valid property insurance requirement	49.091	5	.000	Rejected
Interest towards RML	47.062	5	.000	Rejected
Preference to stay in self-owned property as a primary residence after retirement	117.783	5	.000	Rejected

According to Table 5, the significance values of the chi-square test for the different levels of awareness among the potential investors of different employment types towards the reverse mortgage loan are .000. These are suggestive, but not conclusive, evidence of a relationship between different employment types i.e. government employees, private sector employees, part-time jobholders, self-employed, retired, and unemployed/housewives for the different levels of awareness among different employment type towards the reverse mortgage loan.

Since these significance values are less than 0.05, it can be concluded that the association in the cross-tabulation is real and not due to chance. Hence, all the null hypotheses which show that there are no significant differences in the level of awareness among the potential investors of different employment types towards the reverse mortgage loan are rejected.

Interpretation: In the modern corporate world, people are used to starting their post-retirement planning at an early stage. In India, transforming Indian culture is one of the major reasons behind the awareness of the various post-retirement income sources. Due to any other financial responsibility or employment type, if a person is unable to invest for his post-retirement, a reverse mortgage loan is a wonderful alternative to enjoy their second inning independently. There is no barrier in RML such as employment type or income level.

v) Post-retirement source of income and level of awareness towards reverse mortgage loan:

Information regarding the potential investors' post-retirement income plan is also an important factor. The data was collected regarding whether they have post-retirement income or not. The hypotheses formed for the same are:

H₀5.1: There is no significant difference in the level of awareness among the potential investors' post-retirement sources of income towards the reverse mortgage loan.

H_a5.1: There is a significant difference in the level of awareness among the potential investors' post-retirement sources of income towards the reverse mortgage loan.

H₀5.2: There is no significant difference in the level of awareness among the potential investors' post-retirement sources of income and the tax-exemption aspects of the reverse mortgage loan.

H_a5.2: There is a significant difference in the level of awareness among the potential investors' post-retirement sources of income and the tax-exemption aspects of the reverse mortgage loan.

H₀5.3: There is no significant difference in the level of awareness among the potential investors' post-retirement sources of income towards the requirement of valid property insurance for the reverse mortgage loan.

H_a5.3: There is a significant difference in the level of awareness among the potential investors' post-retirement sources of income towards the requirement of valid property insurance for the reverse mortgage loan.

H₀5.4: There is no significant difference in the level of awareness among the potential investors' post-retirement sources of income and interest towards the reverse mortgage loan.

H_a5.4: There is a significant difference in the level of awareness among the potential investors' post-retirement sources of income and interest towards the reverse mortgage loan.

H₀5.5: There is no significant difference in the level of awareness among the potential investors' post-retirement sources of income and their preference to stay in the self-owned property as a primary residence after retirement.

H_a5.5: There is a significant difference in the level of awareness among the potential investors' post-retirement sources of income and their preference to stay in the self-owned property as a primary residence after retirement.

Table 6: Chi-square test for the post-retirement source of income of the potential investors and level of awareness towards the reverse mortgage loan

Pearson Chi-Square	Value	df	Asymp. Sig. (2-sided)	Result
Post-retirement sources of income				
Product awareness	.006	1	.939	Accepted
Tax exemption	.852	1	.356	Accepted
Valid property insurance requirement	.271	1	.602	Accepted
Interest towards RML	20.571	1	.000	Rejected
Preference to stay in self-owned property as a primary residence after retirement	34.920	1	.000	Rejected

Table 6 shows that the significance values of the test for product awareness, tax exemption awareness, and valid property insurance requirements are .939, .356, and .602, respectively. Since these values are greater than 0.05, it can be concluded that there are no associations in the cross-tabulation between the post-retirement sources of income and product awareness, tax exemption awareness, and valid property insurance requirements regarding the reverse mortgage loan. Hence the null hypotheses are accepted for these three levels.

On the other side, the significance values for interest towards RML and post-retirement residential preference in self-owned property are .000 which is less than 0.05. Hence, the test results show that there are significant differences in potential investors' age and different levels of awareness i.e. interest towards RML and post-retirement residential preference in the self-owned property. It is summarized that the null hypotheses for these two factors are rejected.

The comprehensive analysis of the study shows that in the majority of the cases, the demographic factors of the potential investors and different levels of awareness are related. The level of awareness is affected by the changes in demographic factors.

Interpretation: Indian culture and financial system have given multiple options to senior citizens for managing their post-retirement life in better ways. These alternatives include dependency on children, government pensions, provident funds, fixed deposits, income from other sources, etc. But are these alternatives sufficient in today's changing economic and social environment? If we look at the current scenario of urban India, people are trying to figure out more post-retirement income options to enjoy their second inning independently, and RML is one of the emerging alternatives for this requirement.

VI. CONCLUSIONS

Today's good investments are always a pioneer for tomorrow's better returns. During the early stage of their career, the priority of the Indians is to own a property as they consider it as an investment. If a property, which is considered an investment, does not generate any income, then it is just a commodity. India is positioned for strong economic progress; therefore, we should not miss any opportunity to expedite or support the growth impetus. The reverse mortgage loan scheme gives opportunities to potential investors to use their real estate investments to generate income in their old age days. This product also can increase liquidity in the market as well as help in spreading out many risks in the economy.

Reverse mortgage is a new term for many individuals in India. There is a lack of awareness about the reverse mortgage loan scheme, and only 64% (520 out of 808) of the respondents were aware of the product. There are different levels of awareness such as product awareness, tax exemption, property insurance requirements, interest towards RML, and residential preferences after retirement. The level of awareness among the potential investors towards the reverse mortgage loan is dependent on various demographic factors of the respondents such as gender, age, annual income, employment type, and post-retirement income. On the other side, it was also observed that although there is awareness about the product, the potential investors are showing less interest in this loan as the individuals believe that it needs more clarity in context with the Indian market scenario, that can be very well used for income generation during their post-retirement life. A reverse mortgage loan scheme is a very efficient income instrument to simultaneously use their property and earn a regular income without leaving the property.

VII. SUGGESTIONS

Although, a reverse mortgage is a decade-old concept in India; it is not getting the desired popularity in India due to a lack of awareness. The potential investors believe that the banks/ financial institutions/ government should promote this product by emphasizing factors like financial independence, regular income sources, and the ability to maintain ownership. Promotional activities such as effective advertisements, RML awareness

workshops, outreach programmes, and product campaigns should focus on these areas to increase the popularity, familiarity, and trust of the product. The potential borrowers can utilize these opportunities to get acquainted and understand the benefits of the RML scheme in making their post-retirement life stress-free by providing a source of economic support.

The Indian mortgage sector is growing exponentially. Credit off-takes of the banks are growing very fast; thus, leading to the generation of revenue for the mortgage sector and contributing a large portion to India's GDP. At present, the reverse mortgage loan scheme is contributing a very small portion of the GDP of India. However, a few steps taken by the Indian government and sector-related stakeholders will be helpful for the overall progress in RML as well as the growth of the country's mortgage sector.

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ROLE OF FINANCIAL INVESTOR IN THE COMMODITY MARKET

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ABSTRACT:

There is some debate about whether financial investors have caused excessive increases in the level and volatility of commodity prices. These investors are viewed by some as being less concerned with fundamentals than traditional market participants and hence impeding the price discovery process – that is, they are de stabilizing speculators or ‘noise traders’. Over the past decade, commodity futures have become a popular asset class for portfolio investors, just like stocks and bonds. This process is sometimes referred to as the financialization of commodity markets. Commodities have attracted considerable interest as a financial investment in recent years. This article discusses the factors behind their growing appeal and assesses the extent to which market characteristics, such as price volatility, have changed as a result. Commodities have attracted considerable interest as a financial investment in recent years. This article discusses the factors behind their growing appeal and assesses the extent to which market characteristics, such as price volatility, have changed as a result. The feature concludes that commodity markets have become more like financial markets in terms of the motivations and strategies of participants, but that the physical characteristics of commodity markets are still important.

Key Words: Commodity market, Portfolio Investor, Price volatility, schemes

INTRODUCTION:

Commodities have attracted considerable interest as a financial investment in recent years. This article discusses the factors behind their growing appeal and assesses the extent to which market characteristics, such as price volatility, have changed as a result. The feature concludes that commodity markets have become more like financial markets in terms of the motivations and strategies of participants, but that the physical characteristics of commodity markets are still important.

To obtain a general sense of the changes in the motivations underlying investment activity, we next estimate the relationship between the activity of financial investors and possible motivating determinants. The results of this simple, illustrative exercise are broadly consistent with the view that the motivations for investing in commodity markets have changed along with the growing presence of financial investors.

A commodity options contract is written with a particular futures contract as the underlying security. One important difference between commodity options and equity options is that a commodity option is a derivative security of a derivative for a physical commodity. As the popularity of commodity markets increases among investors, equity options traders migrate to commodity options. We are especially interested in the information content of trading volumes of commodity futures and options contracts. Trading volumes are important in financial markets because order imbalances can reflect private information.

REVIEW OF LITERATURE:

Commodity market participants face severe information frictions (Sockin and Xiong, 2015). In particular, they are exposed to information frictions from the global supply, demand, and inventory of commodities. In a commodity market, information risk arises due to an asymmetry between informed and uninformed investors. Easley et al. (2002) argue that the information structure affects equilibrium asset returns because investors demand compensation for bearing the risk of information-based trading.

The current upturn in commodity prices has been accompanied by greater variety in the types of financial investors and investment strategies in commodity markets (Holmes (2006)). One rapidly growing area is passively managed investment and portfolio products, which is consistent with investors now viewing commodities as an attractive separate asset class. By mid-2006, around \$85 billion of funds were tracking the Goldman Sachs Commodity Index (GSCI) and the Dow Jones/AIG Index, two important commodity indices (Holmes (2006)).

Goldstein and Yang (2017) emphasize that price informativeness in the futures market can either increase or decrease with commodity financialization. However, financialization can generally improve market liquidity in the futures market and the commodity-equity market comovement goes up. Some papers use theoretical models analyze how commodity financialization affect commodity prices.

Passively managed investments often pursue a fully collateralized long only futures strategy. This can be attractive to institutional investors with a longer-term investment horizon, such as pension funds, for several reasons Beenen (2005).

The presence of financial investors in commodity markets

Financial activity in commodity markets is large compared with the size of physical production and has grown much faster in recent years. For gold, copper and aluminum, the volume of exchange-traded derivatives was around 30 times larger than physical production since couple of year. Normally in financial markets, opportunities for (risk-free) arbitrage exist when the futures price deviates from the relevant spot price plus the cost of carry, eg the cost of financing a position in the spot market. However, the scope for arbitrage in commodity markets may be limited by constraints on short selling. Passively managed investments often pursue a fully collateralized long only futures strategy. This can be attractive to institutional investors with a longer-term investment horizon, such as pension funds, for several reasons. First, this strategy allows diversification into commodities at a relatively low cost.

FINANCIAL INVESTORS AND MARKET DYNAMICS

The pricing dynamics of commodities derivatives markets may have been impacted by shifts in the scope and nature of financial investors' participation in these markets. The first question in this context is whether the link between prices and the physical features of commodity markets has changed fundamentally as a result of financial speculators taking advantage of perceived profit possibilities. The second question is whether the expansion of the investor base has impacted elements like short-term price swings by causing a notable depth of the market.

Financial operators' trading decisions, which are based on their collective interpretation of data, news, and market signals, constitute a tangible and dynamic type of knowledge. Expectations can often become self-fulfilling due to coordinated behaviour: if a large number of operators anticipate price increases, their actions will help drive prices higher. However, this knowledge frequently depends on price differentials, seeking profit through collective market behaviour, and is not necessarily in line with the examination of economic fundamentals, such as supply and demand, inventory levels, manufacturing costs, or extreme weather events.

MAJOR COMMODITIES



Figure 1:

ACHIEVEMENTS AND NEW INITIATIVES

Markets for commodities are essential to the world economy. The global economy is significantly impacted by developments in these markets. Commodity markets are then significantly impacted by shifts in the global economy. Clarifying the nature of commodity price movements and their drivers can be achieved by gaining a greater understanding of the factors that influence supply and demand for commodities. Comprehending those factors would also aid in evaluating how commodity market trends. Commodity markets are heterogeneous in terms of their drivers, price behavior, and macroeconomic impact on EMDEs. Policy makers often treat commodities as homogenous, and as a result misinterpret the drivers of price changes and their impact, which can lead to inappropriate policy responses. To formulate appropriate policy, it is critical to understand differences among commodity markets.

Among commodity exporters, oil exporters tend to be less diversified than metal and agricultural exporters. They depend much more on oil for export and fiscal revenue than other commodity exporters depend on agricultural products or metals. As a result, oil-exporting economies are quite vulnerable to fluctuations in oil prices. However, there are significant variations in the size, duration, and impact of price fluctuations across

commodities. Moreover, price shocks have asymmetric impacts, with large price declines having a bigger impact on commodity exporters than do large price increases.

CONCLUSION:

Over the last four years or so, the number of financial investors in commodity markets has grown significantly. Although it is challenging to pinpoint the specific amount and makeup of inflows, there is plenty of evidence that the number of investors has increased significantly, as has the variety of tools and tactics used in commodity trading. It's unclear how much of these changes are due to structural changes in investment behavior or a brief boom fueled by a "search for yield." In any event, given increased investor understanding and an expanding array of financial instruments tied to commodities, a complete reversal of the trend towards a larger role for financial investors seems improbable.

In certain cases, commodity markets now resemble financial markets. A sort of financial trading world is being created by the growing activity of financial investors on both sides of trades. However, the traits of physical Markets continue to be significant, including inventory levels and the marginal cost of manufacturing. Market dynamics can occasionally be greatly impacted by a lack of liquidity, particularly in the long-term commodity derivatives markets, and physical restrictions on short selling in the spot market. More research is necessary to fully understand these impacts.

The ongoing "financialization" of commodity markets raises issues similar to those in other financial markets. While the increase in investor activity can be expected to bring benefits in terms of market efficiency.

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INTELLIGENT DETECTION OF PHISHING AND MALICIOUS LINKS USING URL-HUNTER AI

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ABSTRACT

The rapid increase in phishing and malicious links brought on by the widespread use of digital communication has put users at serious risk. The dynamic nature of these threats frequently makes it impossible for traditional detection techniques to adjust. This study introduces URL Hunter AI, an intelligent malicious link detector that examines URLs based on a number of factors, including lexical structure, IP address presence, domain age, and redirects. Additionally, the system uses a unique scoring algorithm to determine whether a link is safe or unsafe and incorporates the Virus Total API for improved threat intelligence. Real-time results with danger tags and link previews are displayed on an intuitive dashboard. URL Hunter AI is a scalable and effective way to increase user awareness and web security, according to experimental evaluation.

Keywords: Malicious URL Detection, Phishing Attack Prevention, Cybersecurity, URL Feature Analysis, Machine Learning, Threat Intelligence, Real-Time Detection

I. INTRODUCTION

The growth of the internet has given rise to an evolution in the way people communicate and do business and learn and has introduced security vulnerabilities that were not present previously, such as phishing and malicious URLs. Cybercriminals use phishing links to trick victims into revealing sensitive information such as passwords, banking details, and other personal details.

The phishing URLs mimic the legitimate domains so closely as to make it almost impossible for users to tell them apart. These phishing URLs can be conveyed via email, instant messaging, social networking, and ads. If clicked, these links might cause data theft, malware installation, or financial fraud.

Existing detection systems are based on blacklists. Although, they are suitable against already known malicious URLs, they are not effective against new and continuously altering malicious URLs. Therefore, clever and adaptive detection systems may be required to combat such threats.

URL-Hunter AI is a real-time smart URL analysis tool that utilizes many URL features and augments them with third-party threat intelligence data to accurately classify URLs as either Malicious, Suspicious or Safe. The classification is achieved via an analysis of the Virus Total API and a custom score formation mechanism.

The goal of the URIBL project is to raise cybersecurity awareness and provide an easy-to-use, powerful tool to detect dangerous links before visiting them.

II. LITERATURE REVIEW

Phishing and malicious URL detection is a growing field with a vast number of attacks trying to mislead users by directing them to certain web pages. In the beginning, URL detection was done by means of blacklist-based systems that stored already known malicious URLs in databases and then matched these against incoming URL requests. Because of the limited number of previously known malicious URLs such a system is not suitable for detecting newly generated or even quickly changing malicious URLs in real time.

Approaches for detecting malicious URL detection in feature space, i.e. that do not rely on black/white lists of URLs, have since been introduced to counter these disadvantages. These approaches represent and analyze structural and also lexical properties of URLs in order to classify them. These features can be, for example, the length of a URL, its domain, special characters, IP addresses, etc. A number of attacks are often realized by following certain patterns that are easily recognizable by their features. These are typically recognized by automated solutions for malicious URL detection without the need for a blacklist.

A large variety of approaches exists for the classification of URLs with the so-called URL classification using machine learning for URL detection. These methods are trained with a large database of good as well as of malicious URLs, in order to learn by means of these so-called features the distinction of safe and of malicious URLs for newly encountered URLs. Various approaches for feature selection as well as for training and test sets

exist. Often the achieved detection rates of such approaches are very high, but the systems are not robust against changes of attacks, i.e., they fail for new types of attacks not included in the training data.

Additionally, current research aims to combine local feature-based approaches with external threat intelligence. Such sources like services that offer global security reports as well as large databases of malicious URLs, can be used for a real-time verification of URLs. Thus, local feature-based approaches for the detection of phishing and malicious URLs can be supported and improved in their detection quality and in their low number of false alarms.

III. METHODOLOGY

A. System Architecture and Operational Pipeline

The URL-Hunter AI framework is architected as a modular, asynchronous web system engineered to ingest, parse, and analysed digital communications for malicious payloads. The technical architecture comprises four integrated software pipelines:

1. **Email & Contextual Ingestion Module:** Houses the interactive entry layer, allowing users to drop forensic .elm files or paste raw text content (e.g., email bodies containing deceptive text templates like "*Subject: Urgent: Verify Your Account Now!*"). It tracks live URL counts prior to processing (as shown in **Figure 2** and **Figure 3**).
2. **Heuristic & Feature Extraction Engine:** Parses isolated elements of the extracted URLs out-of-band to identify systemic anomalies without initiating a dangerous client-side browser execution.
3. **Threat Intelligence Synchronization Layer:** Leverages a robust API handshake to cross-reference extracted domains concurrently against dozens of specialized engines in global threat repositories.
4. **Aggregated Analytics & UI Module:** Compiles algorithmic risk calculations, rendering high-level performance insights, hourly activity logs, and real-time visual tags for end-user review.



Figure 1: URL-Hunter AI System Dashboard and Executive Threat Overview

B. URL Feature Analysis & Heuristic Triggers

The core feature extraction engine scrutinizes individual target strings, isolating structural traits and server behaviors to trigger specific classification flags:

- **Domain Structure and Longevity Evaluation:**

Tracks the cryptographic and administrative age of the host domain (e.g., flags high-risk vectors such as an active domain age of merely 2 days).

- **Raw IP Address Routing Detection:** Inspects the hostname string to check if it points directly to an unmasked network address (e.g., `http://192.168.1.100/...`) rather than a validated text domain name.
- **Redirect Behaviour Analysis:** Monitors network routing signatures to log excessive cascading jumps (e.g., tracking sequences containing 3 or more HTTP redirects), which are indicative of obfuscation techniques.
- **Security Protocol (HTTPS) Verification:** Checks for the presence of active Transport Layer Security (TLS) certificates to distinguish modern HTTPS camouflage from raw unencrypted transmissions.
- **Suspicious Keyword & Character Metrics:** Scans URL paths for known high-risk anchors (login, verify-account, secure-banking) alongside high-frequency structural symbols (-, ?, =).



Figure 2: Email Analysis Module and Raw Content Input Interface

C. Threat Intelligence Integration

To offset the limitation of zero-day heuristics, URL-Hunter AI establishes an asynchronous network handshake with the **Virus Total API**. Upon URL extraction, the engine broadcasts automated database queries to cross-verify the target domain across global repository engines. The system pulls absolute malicious engine tallies (e.g., mapping scenarios where a link returns \$12\text{ distinct flag detections}\$ out of available scanners), ensuring historical and newly indexed signature definitions instantly validate localized algorithmic scoring.



Figure 3: Live Threat Processing and Real-Time Hyperlink Extraction

D. Algorithmic Risk Scoring Model

The framework implements a dynamic risk evaluation matrix that mathematically transforms extracted structural indicators and global scanner flags into a unified Threat Score (\$\$S\$\$), where $0 \leq S \leq 100$. The categorization threshold is split into distinct risk parameters to guide protective response workflows.



Figure 4: Granular Analysis Results and Feature Metric Breakdown

E. Dashboard Interface and Telemetry Reporting

The front-end user console acts as an interactive security operation center, synthesizing backend data into distinct, clean visualization workspaces:

- **Executive Overview Panel (Dashboard):** Features a comprehensive summary showing **Total URLs**, **Safe URLs**, **Suspicious**, and **Malicious** counters, paired with a three-color **Threat Score Distribution** donut chart and a streaming log of recent scans showing destination signatures alongside immediate threat score badges (Figure 1).
- **Ingestion Workspace (URL Analysis):** Offers an active status indicator ("System Active") alongside drag-and-drop zones for forensic .elm targets or a dedicated text field for inspecting suspicious copy-pasted body text before clicking links (Figure 2, Figure 3).

- **Deep-Dive Inferences (Results View):** Organizes processed links with detailed system summaries—including **Detection Rate (%)**, **HTTPS Coverage (%)**, **New Domains Count**, and **Threats Detected** indicators. Each individual link result lists its matching threat attributes (e.g., Phishing, Too many redirects, New domain) alongside absolute metrics for domain age, total redirects, and external engine detections (**Figure 4**).
- **Telemetry Diagnostics (Statistics View):** Displays system operational analytics, exposing an **Activity by Hour** chronological chart to map threat ingestion waves alongside a **Common Threat Indicators** horizontal bar chart showcasing the highest frequency risk vectors affecting the active network space (**Figure 5**).

IV. RESULT

Midway through testing, the URL-Hunter AI began spotting risks hidden within web links, trained on both harmless and dangerous examples. Instead of relying on one clue, it checked several signs at once - how long the address appeared, odd domain traits, embedded IPs, redirects slipping users elsewhere, even strange word choices tucked inside. Because of this mix, telling safe pages apart from risky ones became more accurate over time. Patterns emerged only when these signals worked together under pressure.

Thanks to the Virus Total API, the system got better at spotting threats using outside data. When someone submits a URL, it checks across worldwide security sources before making a call. That extra check means known harmful links are caught more accurately. Mixing internal analysis with live threat feeds made results steadier, fewer mistakes happened along the way.

Most of the time, risky web links got flagged correctly because the system weighs red flags carefully. Links acting strangely - say, odd addresses or hidden redirects - climbed the danger scale fast. On the flip side, honest websites with clean setups slipped into low-risk bins without hassle. A glance at the screen showed what each link carried - warnings blinked when trouble loomed. Color cues and plain labels spelled out whether something felt sketchy or solid. Guidance popped up too, suggesting next steps if a site seemed off balance.

Most of the time, responses came right away - just seconds after starting. Because it reacts fast, people get warnings about risky links without waiting around. That speed helps stop scams before anyone clicks. Every test showed it works well, spotting bad sites by studying link patterns closely. Built to handle live traffic, it fits smoothly into daily browsing. Protection happens quietly in the background, no extra steps needed. Accuracy stayed high even under heavy loads. With smart checks running nonstop, dangerous pages got flagged early. This tool doesn't guess - it analyzes each address piece by piece. In short, it turns messy data into clear safety decisions.



Figure 5: Security Statistics, Temporal Metrics, and Common Threat Indicators

V. CONCLUSION

This work presents the intelligent system URL-Hunter AI, for the detection of phishing and malicious URLs by means of feature analysis, integration of threat intelligence and a risk scoring. The system is able to evaluate in real time a URL in order to protect users from potential threats.

A hybrid system is more efficient for the detection of attacks than a simple blacklist. The here presented system for the online detection of attacks also can improve the security

awareness of users and support them for a save use of the Internet.

Future enhancements may include:

- Machine learning-based prediction model
- Browser extension integration
- Real-time domain reputation tracking

- Advanced AI-based phishing detection
- Mobile application support

In summary, the introduced URL-Hunter AI is efficient for large scale detection of phishing URLs and supports the Internet security.

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A STUDY ON FROM TRADITIONAL TO DIGITAL: HOW NEO BANKS ARE SHAPING THE FUTURE OF FINANCIAL SERVICES

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ABSTRACT

The financial sector is undergoing a profound transformation driven by technological advancements, changing consumer expectations, and the rise of innovative business models. Digital banking, which integrates traditional banking services with advanced digital platforms, has revolutionized how customers access and manage their finances. It provides seamless, anytime-anywhere access to banking services, reduces operational costs, and enhances customer engagement through personalization. Neo banks, a new breed of fully digital banks without physical branches, have further disrupted the financial landscape by offering innovative, customer-centric solutions tailored to the needs of tech-savvy users. These banks leverage cutting-edge technologies such as artificial intelligence, blockchain, big data analytics, and cloud computing to deliver secure, efficient, and cost-effective services. Financial innovation extends beyond banking operations to include new payment systems, digital wallets, peer-to-peer lending platforms, and automated advisory services, contributing to financial inclusion and transforming traditional financial practices. This paper explores the evolution of digital banking and neo banks, analyzes the role of technological innovations in shaping customer experiences, and examines the impact of these developments on the broader financial ecosystem. It also highlights the challenges posed by regulatory compliance, cybersecurity risks, and market competition. By understanding the convergence of digital banking, neo banks, and financial innovation, stakeholders can better anticipate trends, improve service delivery, and formulate strategies for sustainable growth in the rapidly evolving financial sector.

Keywords: Digital Banking, Neo Banks, Financial Innovation, FinTech, Artificial Intelligence, Blockchain, Digital Payments, Customer Experience

INTRODUCTION:

The global financial services sector is undergoing a historic transformation, fueled by rapid developments in technology, shifting customer expectations, and rising internet and smartphone adoption. Traditionally, banking systems were defined by physical branch networks, paper-based processes, and rigid operating architecture. While these traditional banks have played an important role in economic development and financial intermediation, they frequently experience difficulties such as high operating expenses, limited accessibility, slow service delivery, and complicated procedures. In reaction to these constraints, the banking industry has seen the rise of digital-first financial institutions, often known as Neo Banks, that are changing how financial services are offered and consumed.

Neo banks are totally digital banks that do not have physical branches and rely heavily on sophisticated technology like artificial intelligence, cloud computing, big data analytics, and mobile applications. Neo banks, which provide seamless, user-friendly, and cost-effective banking products, have acquired major popularity among tech-savvy customers, particularly millennials and Gen Z. Neo banks have established themselves as strong alternatives to traditional banking models by offering services such as fast account opening, real-time payments, personalized financial insights, and round-the-clock client care. Their capacity to develop quickly and respond to changing client needs has upset long-standing banking practices, increasing competition in the financial sector.

The transition from traditional banking to digital banking is more than just a technology improvement; it marks a fundamental shift in the structure and philosophy of financial services. Traditional banks are under increasing pressure to adopt digital tactics, engage with fintech firms, and rethink their business models in order to remain competitive in today's market. Meanwhile, neo banks are playing an important role in increasing financial inclusion by providing low-cost digital platforms to underserved and unconnected communities, particularly in emerging markets.

The goal of this study, is to investigate how banking has changed from traditional systems to digital-native establishments. It examines the operational models, salient characteristics, and creative strategies of neo banks and assesses their effects on efficiency, competition, client experience, and the financial environment as a whole. The study aims to provide a thorough knowledge of neo banks' role in influencing the future of financial

services and their consequences for traditional banks, regulators, and consumers alike by examining the potential and difficulties they present.

LITERATURE REVIEW:

- **Thomas, R. (2022).** Revolutionizing banking- Exploring the Neo-banking phenomenon examines the emergence of Neo banks, focusing on their digital-first operational model and the cost efficiencies they offer. The study highlights how these banks deliver streamlined, user-friendly experiences, while also addressing the limitations imposed by their reliance on partnerships with traditional banks.
- **Jaiswal, N. (2023).** A comprehensive study of Neo banks model and consumer perceptions in India research delves into the structural and operational characteristics of Neo banks in India, noting their dependence on conventional banks due to regulatory requirements. The study also investigates consumer perceptions, providing insights into the factors that influence trust and acceptance of digital banking services in the Indian market.
- **Bradford, T. (2023).** Neobanks: Banks by any other name? Terri Bradford critically examines whether Neo banks truly fulfil the role of traditional banks, given their operational reliance on third- party collaborations. The paper questions the long-term sustainability of the digital-only banking model and discusses the challenges associated with redefining what constitutes a bank in the modern financial landscape.
- **Maity, A., & Mukherjee, S. (2023).** Neobanking in India: Strategies for marketing, customer engagement, and trustworthiness Focusing on the Indian market this paper explores effective strategies for enhancing the adoption of Neo banks through targeted marketing and customer engagement. Their study emphasizes the role of digital branding, personalized financial services, and trust-building measures in overcoming market challenges and fostering long-term customer loyalty.
- **Mogaji, 2023.** Neobanks are financial entities that operate exclusively online, and mostly through mobile applications, although they may not have a banking license and only have electronic money licenses. Furthermore, neobanks are established as a subcategory of challenger banks, since they operate exclusively in the digital space.
- **Manoj & Acharya(2024)**-The main theoretical contribution of this study is that it lays the foundation for a better understanding of the transformation and rapid expansion of traditional banking towards a global model based on Fintech technology and Neobanks, which is displacing traditional banking.As practical implications, the results achieved in this study suggest that governments should encourage with medium and long term plans digital transformation in banking, which should be more user-friendly and profitable for users and businesses. For their part, service providers should ensure secure Internet servers and take the necessary measures to increase the confidence of new, potential and existing users of Fintech and Neobanks to minimize risks.This work contributes to understanding the transformation of banking through Fintech and neobanks, with a focus on customer experience and sentiment analysis. Additionally, this manuscript aligns with existing literature on the importance of technology and customer-centric approaches but offers nuanced insights into the specific factors driving customer adoption and the challenges faced by neobanks.
- **PR Palos-Sanchez (2025)** -elated that the neobank sector has experienced remarkable growth, driven by increased investment and expanding customer adoption Research also emphasizes that customer acquisition and retention have become central priorities for neobanks and traditional banks alike, especially in a highly competitive digital environment. The literature further distinguishes between neobanks and the broader FinTech ecosystem, clarifying that neobanks function as fully digital banks, whereas FinTech represents a wider category of technology-driven financial service providers. Overall, the reviewed studies underline both the opportunities and the constraints that shape the advancement of neobanks within the modern financial landscape.

OBJECTIVES OF THE STUDY:

- To understand the concept of traditional banks and neo banks.
- To study the reasons for the shift from traditional banking to digital banking.
- To analyze how neo banks are changing customer banking experience.
- To understand the challenges faced by neo banks.
- To study the impact of neo banks on traditional banks and customers.

Scope of study:

The scope of the study focused on to gain a greater understanding of the banking industry's transition from traditional, branch-based banking systems to digital and neo banking models. The study examines the concept, features, and operational framework of neo banks, contrasting them with traditional banks to highlight important distinctions in service delivery and client involvement. It investigates the impact on client experience, convenience, efficiency, and accessibility to financial services. The report also investigates neo banks' contributions to financial inclusivity and the growth of digital payments. It also analyzes the obstacles and constraints that neo banks confront, including as regulatory concerns, cybersecurity hazards, and customer trust.

METHODOLOGY:**Sources of data collection**

Secondary data: The present study is primarily based on secondary data collected from various reliable sources such as books, research articles, journals, reports, websites, and published case studies related to digital banking and financial services. This research focuses on understanding the transition from traditional banking systems to digital platforms, with specific emphasis on the emergence and role of neo banks in reshaping the financial services sector.

The main research questions address the need for neo banking applications, their functionalities, and the challenges associated with digital banking models. To gain deeper insights into this evolving domain, several studies and future-oriented scenarios related to technological advancements in financial services have been reviewed.

The researcher has extensively analyzed existing literature to examine the concept of neo banks, their impact on customer experience, operational efficiency, financial inclusion, and the overall banking ecosystem.

Digital Banking & Neo Banks

Digital banking plays a crucial role in transforming the modern financial system by shifting banking services from traditional branch-based models to technology-driven platforms. It enables customers to access banking services anytime and anywhere through internet and mobile applications, thereby enhancing convenience and efficiency.

- **Customer Experience (CX):** Digital banking and neo banks have revolutionized CX by offering 24/7 access, intuitive mobile interfaces, real-time notifications, and instant fund transfers. Users, especially younger, tech-savvy demographics, highly value the convenience, speed, and ease of use.
- **Efficiency & Cost-Effectiveness:** By eliminating the need for physical branches, neo banks and digital platforms significantly reduce operational costs, allowing them to offer lower fees, no minimum balance requirements, and competitive interest rates.
- **Financial Inclusion:** These innovations are instrumental in promoting financial inclusion by providing services to underserved populations and remote areas with smartphone access.
- **Challenges:** Key issues include a lack of personal, in-person assistance, which can be frustrating for complex tasks; a digital divide affecting older or rural populations; trust issues due to the absence of a physical presence; and regulatory uncertainty.

FINANCIAL INNOVATION & FINTECH

FinTech is broadly focused on using technology to improve financial services, with a strong emphasis on digital technologies and customer satisfaction. It promotes innovation in financial services through the use of technologies like artificial intelligence, blockchain, big data analytics, and cloud computing. These technologies enable better risk management, fraud detection, and customized product offerings.

- **Artificial Intelligence (AI):** AI is widely reviewed for its role in personalization (tailored financial advice and automated support), enhanced fraud detection through machine learning, and improved credit scoring by analyzing a broader range of data. AI-driven chatbots are also used for customer support, though some users express dissatisfaction with automated responses.
- **Blockchain:** This technology offers enhanced security, transparency, and immutability of financial records. Reviews highlight its potential to streamline cross-border payments, reduce costs by eliminating intermediaries, and enable innovative solutions like smart contracts and asset tokenization. Challenges include scalability issues, regulatory clarity, and integration complexities.

- **Digital Payments:** The rise of methods like the Unified Payments Interface (UPI) and mobile wallets has driven a significant shift toward cashless transactions due to their speed and convenience. However, this leads to concerns about cybersecurity risks, phishing scams, and an increase in impulse spending.

Challenges faced by neo banks

Neo banks face several challenges despite their rapid growth and innovative digital-only business models. One of the major challenges is regulatory compliance, as neo banks must adhere to strict banking laws, licensing norms, data protection regulations, and anti-money laundering requirements, which can be complex and costly. Building customer trust is another significant issue, since the absence of physical branches makes some customers hesitant to rely on neo banks for safeguarding their money. Neo banks are also highly exposed to cybersecurity threats, including data breaches, hacking, and online fraud, due to their complete dependence on digital platforms. Achieving profitability remains a key concern, as many neo banks operate with low or zero-fee structures and depend heavily on external funding. Additionally, they often offer limited product portfolios compared to traditional banks, restricting their ability to meet diverse customer needs. Technology failures, system downtime, and app glitches can severely affect customer experience, while intense competition from established banks and FinTech firms increases customer acquisition costs. Overall, while neo banks are reshaping the financial services landscape, overcoming challenges related to regulation, security, trust, scalability, and sustainable revenue generation is essential for their long-term success.

SWOT analysis of Neo banks

Neo banks exhibit several strengths that support their competitive positioning in the financial services industry. The absence of physical branches and the extensive use of automation, artificial intelligence, and cloud computing enable neo banks to operate with a highly cost-efficient and lean structure compared to traditional banks. This reduced cost base allows them to offer competitive pricing, including lower service fees and, in some cases, higher interest rates on savings accounts, which strongly appeals to price-sensitive customers. Additionally, their FinTech-driven advantage, supported by technologies such as AI and big data analytics, enables neo banks to deliver personalized, innovative, and cost-effective financial solutions, enhancing customer experience and operational efficiency.

However, neo banks also face notable weaknesses that affect their long-term sustainability. Despite lower operating costs, many neo banks struggle to achieve profitability due to high customer acquisition costs and relatively low revenue per customer. Their limited revenue streams, often concentrated around payments and basic fee-based services, restrict their ability to cross-sell high-margin products such as mortgages, wealth management, or complex lending products. Furthermore, a significant dependence on partnerships with licensed traditional banks for core regulated services, including deposit protection, can constrain their flexibility, slow innovation, and reduce overall revenue potential.

In terms of opportunities, neo banks play a vital role in promoting financial inclusion and economic growth by offering affordable and accessible banking services to unbanked and underbanked segments, including gig workers and micro, small, and medium enterprises (MSMEs). This helps bridge existing credit gaps and supports broader economic development. The neo banking sector also benefits from strong market expansion potential, driven by increasing smartphone usage, internet penetration, and a growing population of digitally native consumers, leading to a high projected growth rate globally. Moreover, neo banks have the opportunity to build integrated digital ecosystems by collaborating with non-financial and financial service providers to offer products such as insurance, mutual funds, and ETFs, thereby creating diversified revenue streams.

Despite these opportunities, neo banks face several threats in the external environment. Regulatory uncertainty remains a major concern, as compliance with evolving and sometimes unclear regulatory frameworks can increase operational costs and challenge their lean business models. The threat of cybersecurity risks and financial fraud is also significant, as neo banks are prime targets for cyberattacks, requiring continuous and heavy investment in data protection; any major security breach could result in financial losses and erosion of customer trust. Additionally, intensifying competition from incumbent traditional banks, which are launching their own digital-only platforms backed by strong capital, established customer bases, and regulatory expertise, poses a serious threat to the growth and differentiation of neo banks.

Impact of neo banks on traditional banks and customers

Neo banks have had a significant impact on both traditional banks and customers by transforming the overall banking ecosystem. For traditional banks, the emergence of neo banks has accelerated digital transformation, compelling them to upgrade legacy systems, enhance mobile and internet banking platforms, and adopt advanced technologies such as artificial intelligence and cloud computing. The increased competition from neo

banks has put pressure on traditional banks to reduce service charges, offer more competitive pricing, and improve operational efficiency. Many traditional banks are also shifting toward hybrid or digital-only models by launching their own neo-banking platforms, while placing greater emphasis on customer experience through faster onboarding, personalized services, and simplified processes.

For customers, neo banks have brought greater convenience, accessibility, and choice in banking services. Customers benefit from 24/7 access to banking facilities, instant transactions, and seamless digital experiences through user-friendly mobile applications. The competitive environment created by neo banks has resulted in lower fees, better interest rates, and improved service quality. Additionally, neo banks have enhanced financial inclusion by catering to underserved segments such as gig workers, students, and small businesses, while also increasing digital awareness and adoption among users. Overall, neo banks have reshaped customer expectations and forced the banking industry to become more efficient, innovative, and customer-centric.

FINDINGS

The study reveals a clear distinction between traditional banks and neo banks in terms of their structure and operations. Traditional banks continue to depend on physical branches, manual procedures, and legacy systems, whereas neo banks operate through fully digital, branchless models that emphasize speed, efficiency, and customer-centric services. This fundamental difference highlights how technological innovation is redefining the banking landscape.

The findings further indicate that the shift from traditional banking to digital banking is mainly driven by changing customer expectations, technological advancements, increased smartphone and internet usage, cost efficiency, and the growing demand for convenient, anytime banking services. Government initiatives promoting digital payments and the rise of FinTech innovations have also played a significant role in accelerating this transition.

The study shows that neo banks have significantly improved the overall customer banking experience. Features such as seamless digital onboarding, real-time transactions, lower service charges, personalized offerings, and user-friendly mobile applications have increased customer satisfaction and reshaped customer expectations. Neo banks have also contributed to greater financial inclusion by providing accessible banking solutions to underserved segments of the population.

However, the research identifies several challenges faced by neo banks. These include regulatory and compliance issues, cybersecurity risks, high customer acquisition costs, limited product portfolios, dependence on partnerships with traditional banks, and difficulties in achieving long-term profitability. These challenges continue to affect the scalability and sustainability of neo banking models.

The reviewed literature collectively highlights that neobanks, as fully digital financial institutions, are reshaping the global financial landscape by offering low-cost, user-friendly, and technology-driven banking alternatives to traditional banks. Studies such as Janamolla (2024) emphasize how advanced digital platforms, changing consumer expectations, and regulatory reforms have accelerated the rise of neobanks, enabling them to promote financial inclusion and challenge traditional banking models. Lindström & Nilsson (2023) find that although neobanks are growing rapidly, traditional banks still dominate due to consumer trust and established infrastructure. Research also indicates that consumers value neobanks for their convenience, transparency, and seamless digital experiences, as highlighted by Manoj & Acharya (2025). However, several authors note challenges including cybersecurity risks, regulatory ambiguity, and limited profitability, which may affect long-term sustainability. Indian studies (Patil, 2024) further show how national initiatives like UPI and Digital India have accelerated digital adoption, allowing neobanks to cater to underserved segments. Overall, the literature suggests that neobanks act both as disruptors and collaborators, pushing traditional banks toward digital transformation while shaping a more efficient, inclusive, and technology-driven future of financial services.

Finally, the study finds that neo banks have had a substantial impact on both traditional banks and customers. Traditional banks are increasingly adopting digital technologies, improving operational efficiency, and enhancing customer service to remain competitive, while customers benefit from greater choice, improved service quality, reduced costs, and more innovative banking solutions. Overall, the findings suggest that neo banks are playing a transformative role in shaping the future of the banking and financial services industry.

CONCLUSION

From a research perspective, the analysis confirms that neo banks are significantly shaping the future of financial services by transforming operational models, enhancing customer experience, and fostering financial

inclusion. While challenges related to trust and regulation persist, the digital-first approach of neo banks positions them as key contributors to the ongoing transformation of the global banking landscape.

The study concludes that the banking industry is undergoing a significant transformation from traditional, branch-based models to digital and technology-driven platforms. Neo banks have emerged as key drivers of this shift by offering innovative, cost-efficient, and customer-centric financial services. Through seamless digital experiences, competitive pricing, and enhanced accessibility, neo banks have reshaped customer expectations and accelerated digital adoption across the financial services sector. Although neo banks face challenges such as regulatory constraints, cybersecurity risks, and profitability concerns, their impact on traditional banks and customers is substantial. Overall, neo banks are playing a pivotal role in shaping the future of financial services by promoting innovation, financial inclusion, and a more efficient and competitive banking ecosystem.

SUGGESTION

- Neo banks should focus on strengthening cybersecurity measures to enhance customer trust and data protection.
- Regulatory frameworks should be made clearer and more supportive to encourage sustainable growth of neo banks.
- Neo banks need to diversify revenue streams by introducing advanced financial products and services.
- Traditional banks should continue investing in digital innovation to remain competitive in the evolving banking landscape.
- Collaboration between traditional banks and neo banks can improve financial inclusion and service efficiency.

LIMITATION OF THE STUDY

- The study is based solely on secondary data, which may limit the depth and originality of the findings.
- Rapid technical and regulatory changes in neo banking can impact the long-term usefulness of results.
- The findings of the research may be limited due to differences in digital banking implementation between nations and markets.
- The absence of primary data restricts direct insights into customer perceptions and experiences.

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ANALYZING THE IMPACT OF REWARD SYSTEMS ON THE EMPLOYEES IN PHARMA MANUFACTURING COMPANIES IN NAGPUR REGION

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ABSTRACT

Employees are considered as the human capital and key resources of any organization. The condition of handling people, the reward and compensation scheme highlights a center feature of the occupation association. If employees are interested and happy they will achieve their responsibilities carefully and actively. The success or failure of the organization mostly depends on their employees. To be successful or to get a well performed tasks or achieving the desired goals of the company. Employees should be motivated, attracted and retained in the organization. The key tools or instruments for these are reward and compensations management systems of the Organization.

In this research how employee performance is affected by reward systems. Employees with high levels of motivation are more likely to be dedicated, content, and productive. The purpose of this research is to look into how employee performance and reward systems are related. Gaining a better understanding of how reward systems affect employee performance is the study's main goal. A reward arrangement's effect on employee performance is broader and impacting not only the organization general but also dissimilar surfaces of an employee's knowledge. Inspired Incentives can motivate them to go above and beyond and help the company succeed. Throughout the investigation, primary data was gathered using questionnaires with some structure. An optimistic association found among financial rewards, motivation and happiness. Overall results indicate employees working in Pharmaceutical industry are being offered good financial rewards. They are motivation in performing their duties and satisfied with their salary and job position.

Keywords: Human Capital, Key Resources, Reward and Compensation, Employee Performance, Reward Systems, Financial Rewards, Motivation and Satisfaction.

INTRODUCTION

Reward System is crucial for attracting, motivating, and retaining talent by aligning employee goals with business objectives, fostering high performance, and ensuring fairness, using both financial (pay, benefits) and non-financial (recognition, development) rewards to build engagement and a strong performance culture. Effective systems make employees feel valued, encourage desired behaviours, and directly impact organizational success and cost control, forming a key part of strategic HR.

Reward Management is worried with the preparation and implementation of policies and strategies that purpose to reward people justly, justifiably and reliably in agreement with their worth to the organization. It contracts with the proposal, implementation and maintenance of reward procedures and performs that are geared to the development of organizational, team and individual performance.

DIFFERENT PARTS OF A REWARD SYSTEM:

While emerging a reward scheme there are sure standards to consider, and usually these are careful in most honest reward schemes. A reward can be either an "add-on", implying that the employee has a typical compensation, and the reward. Organizations have, similarly as people, diverse life-stages, and depending on where the company is right now it has distinctive necessities and this influences the reward system, expecting to create goal. What objectives the organization have in salutations of gainfulness and growth, are the limits you quantity to check whether a reward must to be paid or not.

This more often than not requires a break-down of the goals, making them less demanding to quantify and more reasonable for the employees, and there you additionally need to demonstrate to them how their behaviour influences the measured goals and parameters. Here the incentive system turns into a tool for management control and the choice of which goals you measure is imperative, since these are the ones the employees will put their emphasis on. Once in a while a fiscal reward is given in view of individual or on departmental performance, despite the fact that the organization has losses.

According to Jaghult, (2005) this can be circumvented by counting a boundary precondition for the whole organization, which at that opinion must be happy before a addition can be rewarded out in any departments. Factors, for example, when and how the reward ought to be paid out and if there ought to be a roof (a higher

point of confinement of the reward-sum) are things that dependably ought to be determined while planning the system.

THE AIMS OF REWARD MANAGEMENT: The strategic aim of reward management is to develop and implement the reward policies, processes and practices required to support the achievement of the organization's business goals. **The specific aims are to:**

- ✚ Create total reward processes that are based on beliefs about what the organization values and wants to achieve;
- ✚ Reward people for the value they create;
- ✚ Align reward practices with both business goals and employee values; as Duncan Brown¹ emphasizes, the 'alignment of your reward practices with employee values and needs is every bit as important as alignment with business goals, and critical to the realisation of the latter.
- ✚ Reward the right things to convey the right message about what is important in terms of expected behaviours and outcomes;
- ✚ Facilitate the attraction and retention of the skilled and competent people the organization needs, thus 'winning the war for talent';
- ✚ Help in the process of motivating people and gaining their commitment and engagement;
- ✚ Support the development of a performance culture;
- ✚ Develop a positive employment relationship and psychological contract.

KEY REASONS FOR IMPORTANCE:

- ❖ **Attraction & Retention:** High rewards attract top talent and reduce turnover, winning the "war for talent".
- ❖ **Motivation & Engagement:** Rewards drive employees to work harder and commit, creating intrinsic and extrinsic motivation.
- ❖ **Performance Culture:** They signal what's important, encouraging behaviours and outcomes that support business goals.
- ❖ **Alignment:** Links employee efforts to organizational goals and values, ensuring everyone pulls in the same direction.
- ❖ **Fairness & Morale:** A just system builds trust and a positive psychological contract,
- ❖ **Strategic Tool:** Influences attitudes, behavior, and performance, impacting the bottom line,

TYPES OF REWARDS:

- ❖ **Extrinsic (Transactional):** Pay, bonuses, benefits, stock options, incentives.
- ❖ **Intrinsic (Developmental):** Recognition, challenging work, learning opportunities, positive environment, autonomy, growth.

CORE AIMS OF REWARD SYSTEM MANAGEMENT:

- Reward value creation and align with company values and goals.
- Develop a high-performance culture and support business strategy.
- Motivate commitment and engagement.
- Provide total rewards (pay + benefits + development).

AFFECTING FACTORS OF REWARD SYSTEMS:

INTERNAL FACTORS:

- ✚ **Organizational Strategy & Culture:** Alignment with goals, values, and desired behavior.
- ✚ **Financials:** Total organizational costs, budget, and profitability.
- ✚ **Competition for Talent:** Preferences, needs, associations, skills, and engagement levels.
- ✚ **Technology:** How technology impacts job design and reward delivery.

EXTERNAL FACTORS:

- ✚ **Economic Climate:** National economy, inflation, and market stability.
- ✚ **Labour Market:** Competition for talent and prevailing wage rates.
- ✚ **Government & Legal:** Laws, regulations, and political environment.
- ✚ **Industry & Sector:** Differences between public, private, or specific industries.

KEY REWARD COMPONENTS & THEIR INFLUENCES:

- ✚ **Monetary:** Base pay, bonuses, incentives, benefits, which link to performance and market rates.
- ✚ **Non-Monetary:** Recognition, challenging work, autonomy, skill development, flexible schedules, and positive work environment, affecting satisfaction and intrinsic motivation.
- ✚ **Fairness & Transparency:** Perceived fairness is crucial for rewards to be effective motivators.

3) LITERATURE REVIEW

This reviews existing literature on Reward Systems to the Employees in Pharma Manufacturing Companies. This involves review of theoretical aspects related to this study.

Balamurugan G. (2019), Organizations in both the public and indeed the private sector consider their employees as a critical asset in the organization towards the attainment of the organizational goals. Organizational reward systems play a critical role in enhancing employee satisfaction as the primary aim of the reward system is to enhance performance and extrinsic motivation by satisfying an individual employee's needs. This reading will have lots of assistances to the business creation. Organizations may improve or change their reward systems to survive in today's environment with the help of this study. They may renew their reward systems and put more efficient and effective ones.

Sophy Alexander, (2020), in the age of global competition, obtaining the right work force and retaining it turns into the most essential assignment of all organization. To get the most from those resources, employees should be motivated. The reason on why the study is vital is it helps to understand why reward system is important within the organization so the organization can adopt better ways to encourage workers through a good reward system to increase worker productivity.

Razib Hossain, (2021), this study investigates the relationship between employee motivation and reward systems with special reference to the pharmaceutical companies of Bangladesh. Reward systems include extrinsic and intrinsic factors. Here the reward considered as independent variable and employee motivation as dependent variable. The reward schemes of these pharmaceutical companies must be associated with the business policy of the companies.

A. Renuka & K. Venkata, (2022), Reward practice is one of core activities underlying in HRM. This study examined effect of reward and its effect on the employees' job satisfaction. The study used both primary and secondary source of data. The study result has implied that promotion, sense of achievement, recognition and work freedom are found to have strong positive relationship with employees job satisfaction, moderate relationship obtained with pay and benefit and working condition In order to boost the level of satisfaction of the employee, the researcher recommended that the concerned parties have to revise and improve the existing reward practices.

Jawaria Ashraf, (2023), the aim of this aimed to investigate the reward and recognition policies and its influence on the performance among employees of different categories in Pakistan. Based on preceding studies and literature analyses organizations simplify their employees with dissimilar reward and recognition schemes to inspire employees' inspiration near and performance. The main objective is to identify which rewards is the most influence on employee performance.

RESEARCH OBJECTIVES

The following are the Main Objectives:

25. To study and understand the concept of Reward Systems.
26. To study the role of Reward Systems to the Employees in Pharma Manufacturing Companies in Nagpur Region.
27. To study the affecting factors of Reward Systems to the Employees in Pharma Manufacturing Companies in Nagpur Region.

28. To measure and analyzing the overall performance of Reward Systems to the Employees in Pharma Manufacturing Companies in Nagpur Region.

RESEARCH METHODOLOGY

In execution of analysis, data collected from 01/01/2025 to 31/10/2025 are used.

- **Research Area:** Nagpur Region.
- **Manufacturing Companies Names:** Zydus Life sciences, Glaxo Smith Kline Pharmaceutical, Denmark Pharmaceutical Pvt Ltd, Cipla Pharmaceutical, Dr. Reddy's.
- **Research Instrument:** Individual Meeting
- **Investigation Plan:** Descriptive
- **Data Type:** Primary & Secondary records
- **Connection Technique:** Companies Records Survey, By Phone, Personal Meeting
- **Total Population:** 7500
- **Sample size:** 100
- **Sampling Technique:** Random Sampling Technique
- **Analysis Tools:** Percentage Analysis with Likert Rating Scale 1-5

RESULTS AND DISCUSSIONS:

Affecting Factors of Reward Systems:

- **Organizational Strategy & Culture :** A
- **Organizational Costs & Budget:** B
- **Competition for Talent:** C
- **Regulations & Political Environment:** D
- **Base Pay, Bonuses & Incentives:** E
- **Fairness & Transparency:** F
- **Autonomy & Skill Development:** G
- **Industry & Sector:** H

Options	Options Rating	Satisfaction Score level	Assigned Score
1	Always/Strongly Agree/ Outstanding	80% -100%	5 means = 1.00
2	Agree / Often / Very good	60% - 80%	4 means = 0.80
3	Neutral / Occasionally / Good	40% - 60%	3 means = 0.60
4	Rarely/Disagree/Below Agree	20% - 40%	2 means = 0.40
5	Never / Strongly Disagree	00% - 20%	1 means = 0.20

Table1.1 Average Score against 5 Point Scale

Responses of Employees Growth									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	160	152	157	161	147	159	137	145	1218
AVG	1.60	1.52	1.57	1.61	1.47	1.59	1.37	1.45	1.5225

Responses of Employees Performance									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	168	157	161	169	158	150	147	139	1249
AVG	1.68	1.57	1.61	1.69	1.58	1.50	1.47	1.39	1.56125

Responses of Employees Motivation									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	149	136	159	147	136	140	146	138	1151
AVG	1.49	1.36	1.59	1.47	1.36	1.40	1.46	1.38	1.43875

Responses of Employees Satisfaction									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	162	159	154	165	148	170	138	145	1241
AVG	1.62	1.59	1.54	1.65	1.48	1.70	1.38	1.45	1.55125

Responses of Employees Attraction & Retention									
Resp / Ver	A	B	C	D	E	F	G	H	Total
TOTAL	156	138	161	154	139	145	151	149	1193
AVG	1.56	1.38	1.61	1.54	1.39	1.45	1.51	1.49	1.49125

Sample	Employees Growth		Employees Performance		Employees Motivation		Employees Satisfaction		Employees Attraction & Retention		Weightage
NO 01 TO 100	A	160	A	168	A	149	A	162	A	156	795
	B	152	B	157	B	136	B	159	B	138	742
	C	157	C	161	C	159	C	154	C	161	792
	D	161	D	169	D	147	D	165	D	154	796
	E	147	E	158	E	136	E	148	E	139	728
	F	159	F	150	F	140	F	170	F	145	764
	G	137	G	147	G	146	G	138	G	151	719
	H	145	H	139	H	138	H	145	H	149	716
SUM	1218		1249		1151		1241		1193		6052
Mean Value	152.25		156.125		143.875		155.125		149.125		151.3

Table 1.2 Results of overall performance of Reward Systems to the Employees in Pharma Manufacturing Companies in Nagpur Region.

Employees Performance and Efficiency Improvements for all affecting factors	Avg Score Against 5 Point Scale	% of Performance Progresses	% of Performance till not Improvements
Employees Growth	1.5225	69.550%	30.450%
Employees Performance	1.56125	68.775%	31.225%
Employees Motivation	1.43875	71.225%	28.775%
Employees Satisfaction	1.55125	68.975%	31.025%
Employees Attraction & Retention	1.49125	70.175%	29.825%
Avg %	69.74%		30.26%
Performance	Very good (60% - 80% achievement)		

Parameters (Variables)	Weightage	Resp. Avg. (500)	% of Performance in Improvements	% of Performance not Improvements
A = Organizational Strategy & Culture	795	1.59	68.20%	31.80%
B = Organizational Costs & Budget	742	1.484	70.32%	29.68%
C = Competition for Talent	792	1.584	68.32%	31.68%
D = Regulations & Political	796			

Environment		1.592	68.16%	31.84%
E = Base Pay, Bonuses & Incentives	728	1.456	70.88%	29.12%
F = Fairness & Transparency	764	1.528	69.44%	30.56%
G = Autonomy & Skill Development	719	1.438	71.24%	28.76%
H = Industry & Sector	716	1.432	71.36%	28.64%
% of Average Performance			69.74%	30.26%

CONCLUSIONS:

- Based on the results of this study it can be conclude that reward, both financial and nonfinancial reward, and employee engagement significantly influence employee performance. This study demonstrated that financial rewards existing to employees in pharmaceutical industry are respectable. Employees of this industry are motivated and satisfied with their salary and position.
- The result showed a positive impact of financial rewards on employee's motivation and satisfaction. Financial rewards leads to employee's motivation. It is also observed that the new entrants in this industry are highly motivated and the working conditions, environment and superior's behavior plays a vital role in determination of their satisfaction level.
- The study empirically examined on the effect of reward system on employee's performance. In any organization, employees reward companies of policies and in accordance with their skill every organization needs a strategic reward system for employees. Monetary rewards are financial inducement that positively leads to high productivity in the organization.
- Rewards systems are the planned activities that organizations implement to achieving the set goals of the organization. Managing human resources which is the most valued asset of an organization, has received much attention recently a lot could be gained from a better handling of human resource within organization.
- The research underscores the importance of a multi-faceted approach to rewards, combining monetary and non-monetary incentives. By addressing the identified challenges and implementing the suggested improvements, the company can create a more motivating and satisfying work environment. This, in turn, has the potential to boost employee engagement, productivity, and retention, ultimately contributing to the overall success of the organization.

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A STUDY ON THE ROLE OF FINTECH SOLUTIONS IN ENHANCING FINANCIAL INCLUSION AMONG GENERATION Z

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ABSTRACT

FinTech has become an important part of today's financial system and plays a key role in making financial services easily available to people. Gen Z, a generation that is highly comfortable with digital technology, yet many of them face problems such as lack of financial knowledge, low trust in digital platforms, and limited access to formal financial services. This study aims to explore how FinTech solutions can help Gen Z overcome these challenges and improve their access to and participation in formal financial services.

Although Gen Z actively uses digital applications for payments and everyday transactions, their engagement with structured financial products such as savings, insurance, credit, and investments remains limited. Many FinTech platforms focus mainly on speed and convenience, but their actual role in building long-term financial inclusion and financial well-being among young users is still not clearly understood. Concerns related to data security, privacy, and lack of awareness further affect adoption decisions. This creates a gap between availability of digital financial tools and their effective use for financial growth. The study addresses this gap by examining whether FinTech usage goes beyond transactional ease and contributes meaningfully to financial inclusion outcomes for Gen Z.

The study follows a quantitative research approach and is based on primary data collected through a structured questionnaire administered to Gen Z respondents in the Mumbai Metropolitan Region. It covers various FinTech services including digital payment platforms, financial literacy applications, investment and trading apps, budgeting tools, and digital lending platforms. The research examines key factors such as FinTech usage level, digital financial literacy, trust, perceived security, and financial behaviour. Statistical tools such as correlation analysis, regression analysis, and paired sample t-tests are used to analyze the relationships between FinTech usage and indicators of financial inclusion, saving behaviour, and financial well-being. The scope of the study is limited to selected urban and semi-urban areas, allowing a focused understanding of Gen Z financial behaviour in a digital environment.

The study is expected to provide practical insights into how FinTech solutions can support improved financial access, responsible financial behaviour, and overall financial well-being among Gen Z. The findings may help FinTech companies design simpler, more secure, and user-friendly platforms that address the real needs of young users. The study can also assist banks, regulators, and policymakers in strengthening digital financial inclusion initiatives and financial literacy programs. By highlighting the importance of trust, awareness, and meaningful usage, the research aims to contribute to the development of a more inclusive and financially empowered Gen Z population.

1. INTRODUCTION

Generation Z has grown up in a digital-first world where technology is woven into everyday life. From social media to online learning, digital platforms shape how they connect, learn, and express themselves. Naturally, they expect their financial experiences to be just as seamless, fast, and inclusive. Yet many still find traditional banking intimidating slow processes, rigid rules, and systems that feel designed for older generations often leave them searching for something that matches their pace and values.

FinTech has stepped in as that solution. By blending finance with technology, it offers tools Gen Z already feels at home with mobile wallets, peer-to-peer lending, investment apps, and AI-driven advisors. These platforms don't just simplify transactions; they make finance approachable, affordable, and inclusive. More importantly, FinTech carries the promise of empowerment, ensuring that financial participation is not limited to a privileged few but extended to all young people stepping into adulthood with confidence.

Significance of the Study

This study shows how FinTech isn't just about transactions it's about empowerment. It highlights how digital tools can break barriers, giving Gen Z the chance to own their financial future.

Need for the Study

Though tech-savvy, many young people still find finance intimidating. FinTech offers solutions, but research on its impact for Gen Z is limited. This study fills that gap, exploring how digital innovation truly changes their financial lives.

Scope of the Study

The focus is on Gen Z's use of mobile wallets, banking apps, peer-to-peer lending, and investment platforms. It explores opportunities and challenges trust, affordability, and digital literacy while offering insights relevant for banks, policymakers, and innovators worldwide.

Objective of the study

1. To Examine the Impact of Fintech usage on the level of financial inclusion among Genz
2. To analyze the relationship between digital financial literacy and adoption of fintech solutions among Genz
3. To assess whether fintech solutions improve savings and investment behaviour among Genz
4. To examine the influence of trust and perceived security on fintech adoption decisions among Genz
5. To study the effect of Fintech usage on financial well-being of Genz.

2. LITERATURE REVIEW**FinTech Usage and Financial Inclusion among Generation Z**

Financial inclusion refers to the accessibility, affordability, and usage of formal financial services by individuals and households. Recent literature consistently identifies FinTech as a critical enabler of financial inclusion in emerging economies, particularly through mobile banking, digital payments, and online financial platforms. These technologies reduce reliance on physical banking infrastructure and lower transaction costs, making financial services more accessible to underserved populations (Ramadhan et al., 2025; Ingale, 2025).

Although many studies focus on the general population, emerging evidence suggests that Generation Z being digitally native derives disproportionate benefits from FinTech adoption. Mobile banking and digital payment platforms have been found to increase account ownership, transaction frequency, and access to credit, indirectly fostering inclusion among younger users (Himani et al., 2025). However, much of the existing literature relies on correlational designs, limiting strong causal inference, especially in the context of generational analysis across diverse emerging markets (Kouam, 2024).

Digital Financial Literacy and Adoption of FinTech Solutions

Digital financial literacy plays a pivotal role in shaping FinTech adoption, particularly among Generation Z. Studies indicate that individuals with higher digital and financial literacy are more likely to adopt and effectively use FinTech platforms, as they are better equipped to understand digital interfaces, financial products, and associated risks (Singh & Sharma, 2023; Kouam, 2024).

Empirical evidence suggests that FinTech platforms themselves may enhance financial literacy by offering real-time information, educational tools, and simplified user experiences (Himani et al., 2025). However, digital illiteracy remains a significant barrier in many emerging economies, even among younger cohorts, due to unequal access to quality education and digital infrastructure (Mathew, 2025). This bidirectional relationship between literacy and adoption remains underexplored in terms of causal sequencing.

FinTech Solutions and Savings & Investment Behaviour among Generation Z

FinTech investment platforms have significantly altered savings and investment behaviour, particularly among Generation Z. Online investment applications and digital brokerage platforms lower entry barriers by reducing minimum investment thresholds and providing user-friendly interfaces (Himani et al., 2025). These platforms are associated with increased participation in mutual funds, equities, and digital savings instruments among young investors.

Empirical findings from India indicate a strong positive relationship between FinTech usage and informed investment decision-making, with financial literacy acting as a moderating variable (Himani et al., 2025). Nonetheless, concerns remain regarding impulsive investing, exposure to volatile assets, and behavioural biases facilitated by gamified platforms issues that are insufficiently addressed in current literature (Ramadhan et al., 2025).

Trust, Perceived Security, and FinTech Adoption Decisions

Trust and perceived security are repeatedly identified as decisive factors influencing FinTech adoption. Concerns related to data privacy, cybersecurity threats, and fraud significantly affect users' willingness to

engage with digital financial platforms (Mathew, 2025; Dudu et al., 2024). While Generation Z is generally more comfortable with digital environments, trust deficits persist, particularly in regions with weak regulatory enforcement.

Studies emphasize that transparent fee structures, robust cybersecurity frameworks, and regulatory oversight enhance user trust and adoption rates (Kouam, 2024). However, the literature largely treats trust as a static variable, with limited exploration of how trust evolves through continued FinTech usage or varies across cultural and institutional contexts.

FinTech Usage and Financial Well-Being of Generation Z

Financial well-being encompasses financial security, control over finances, and the ability to meet current and future financial needs. Existing research indicates that FinTech usage contributes positively to financial well-being by improving access to financial tools, encouraging savings behaviour, and enhancing financial awareness (Ingale, 2025; Lahmidi et al., 2025).

For Generation Z, FinTech platforms provide greater autonomy in financial decision-making and facilitate early engagement with formal financial systems. However, empirical evidence linking FinTech usage directly to measurable improvements in financial well-being remains fragmented. Many studies infer well-being outcomes indirectly through proxies such as access or literacy rather than validated financial well-being scales (Ramadhan et al., 2025).

Research Gap

Despite extensive research on FinTech and financial inclusion in emerging economies, a clear research gap exists in understanding how FinTech usage influences financial inclusion, digital financial literacy, savings and investment behaviour, trust, and overall financial well-being specifically among Generation Z in the Mumbai Metropolitan Region (MMR). Most existing studies adopt national or cross-country perspectives and fail to capture the unique socio-economic diversity, high digital penetration, and uneven financial awareness that characterize MMR. Additionally, Generation Z is rarely examined as a distinct analytical group, resulting in limited insight into how their digital-native behaviour translates into measurable financial outcomes. The interaction between digital financial literacy and FinTech adoption, as well as the role of trust and perceived security in shaping sustained usage, remains insufficiently explored at a metropolitan level. Furthermore, prior research often relies on indirect indicators of financial well-being rather than assessing tangible improvements in financial control, resilience, and long-term financial preparedness. This highlights the need for a focused, region-specific empirical study on Generation Z in MMR to bridge these gaps and provide contextually relevant insights.

3. RESEARCH METHODOLOGY

- **Research Design:** The research is primarily quantitative; additionally, review of literature is done to analyze the results of previous studies.
- **Sampling method:** Non-Probability Convenient Sampling
- **Sample size:** 128 respondents
- **Data Collection Methods:** Online survey of working population through Google Forms.
- **Variables:**

Independent Variables

- Digital Financial Literacy
- Trust
- Perceived Security

Mediating Variable

- FinTech Adoption & Usage

Dependent Variables

- Financial Inclusion
- Saving & Investment Behaviour
- Financial Well-being

- **Data Analysis Tools:** Simple Linear Regression, Multiple Regression Analysis and Descriptive Statistics

- **Hypothesis:**

- **Hypothesis 1**

H₀₁: Digital financial literacy has no significant influence on FinTech adoption and usage among Gen Z.

H₁₁: Digital financial literacy has a significant positive influence on FinTech adoption and usage among Gen Z.

- **Hypothesis 2**

H₀₂: Trust and perceived security have no significant influence on FinTech adoption and usage among Gen Z.

H₁₂: Trust and perceived security have a significant positive influence on FinTech adoption and usage among Gen Z.

- **Hypothesis 3**

H₀₃: FinTech adoption and usage have no significant impact on financial inclusion among Gen Z.

H₁₃: FinTech adoption and usage have a significant positive impact on financial inclusion among Gen Z.

- **Hypothesis 4**

H₀₄: FinTech adoption and usage do not significantly influence saving and investment behaviour of Gen Z.

H₁₄: FinTech adoption and usage significantly improve saving and investment behaviour of Gen Z.

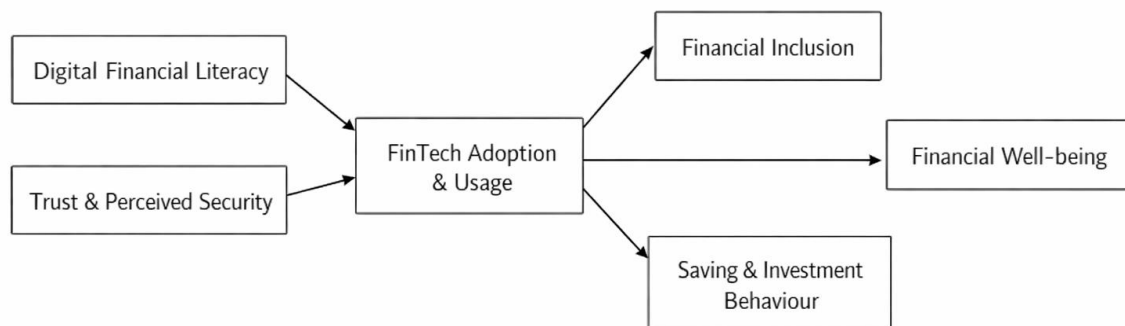
- **Hypothesis 5**

H₀₅: Financial inclusion has no significant impact on the financial well-being of Gen Z.

H₁₅: Financial inclusion has a significant positive impact on the financial well-being of Gen Z.

Network Diagram

FinTech Solutions and Financial Inclusion among Gen Z



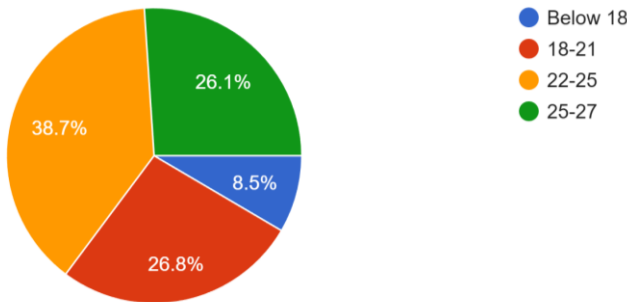
4. DATA INTERPRETATION & ANALYSIS

Descriptive Statistics

Descriptive Statistics of Respondents

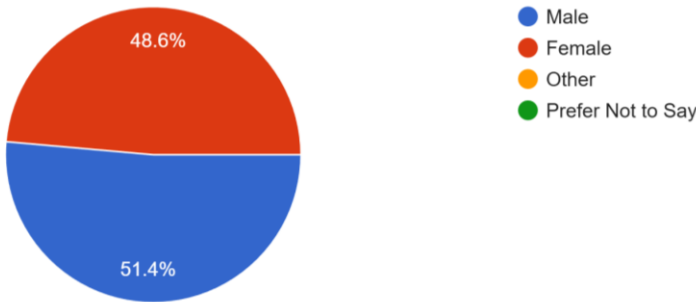
The demographic profile of the respondents was analysed based on age, gender, education level, and employment status to understand the composition of the sample.

Age
142 responses



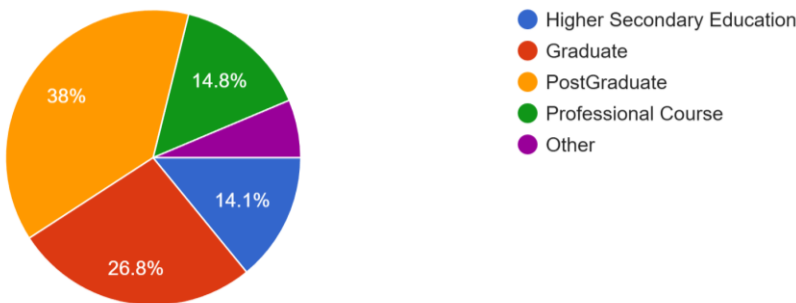
Age
The majority of respondents belonged to the **22–25 years** age group, followed by those in the **18–21 years** category. A smaller proportion of respondents were in the **25–27 years** group, while a limited number fell under the **below 18 years** category. This indicates that the sample largely represents young adults within Generation Z who are at a stage of higher education or early career development.

Gender
142 responses



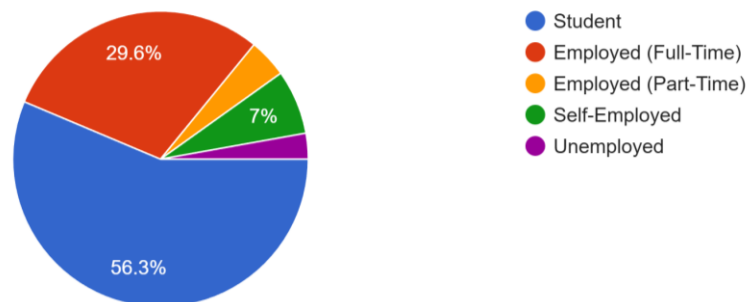
Gender
The sample consisted of a **balanced representation of male and female respondents**, with a slightly higher proportion of females. This balanced distribution reduces gender bias and allows for a more inclusive understanding of FinTech adoption behaviour among Gen Z.

Education Level
142 responses



Education Level
Most respondents had attained **graduate or postgraduate education**, indicating a relatively high educational background within the sample. A smaller number of respondents reported **higher secondary education, professional courses, or other educational qualifications**. The dominance of higher education levels suggests that the respondents are likely to possess the basic cognitive and digital skills necessary for engaging with FinTech platforms.

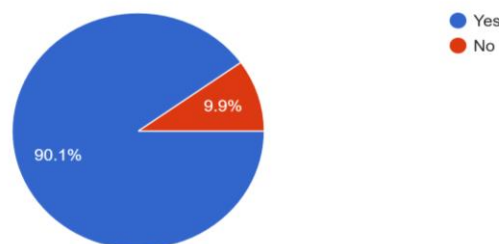
Employment Status
142 responses



Employment Status

A significant proportion of respondents identified as **students**, followed by those who were **employed full-time**. Smaller segments of the sample were **employed part-time**, **self-employed**, or **unemployed**. This distribution reflects the transitional nature of Generation Z, with many individuals balancing education alongside employment or entrepreneurial activities.

Do you use any FinTech applications (Gpay , Paytm, CRED, Groww, Acko or any similar alternatives)?
142 responses



For Hypothesis 1

ANOVA						
Model		Sum of Squares	df	Mean Square	F	p
M ₁	Regression	4.833	1	4.833	18.00	< .001
	Residual	33.821	126	0.268		
	Total	38.654	127			
Note. M ₁ includes dfl mean						
Note. The intercept model is omitted, as no meaningful information can be shown.						

Simple linear regression analysis revealed that digital financial literacy has a statistically significant positive influence on FinTech adoption and usage among Gen Z ($p = 0.001$). Therefore, the null hypothesis (H_{01}) was rejected and the alternative hypothesis (H_{11}) was accepted.

For Hypothesis 2

ANOVA						
Model		Sum of Squares	df	Mean Square	F	p
M ₁	Regression	1.376	2	0.688	2.308	.104

	Residual	37.278	125	0.298		
	Total	38.654	127			
<i>Note.</i> M ₁ includes TR MEAN, PR MEAN						
<i>Note.</i> The intercept model is omitted, as no meaningful information can be shown.						

Multiple regression analysis indicated that trust and perceived security do not have a statistically significant influence on FinTech adoption and usage among Gen Z ($p = 0.104$). Therefore, the null hypothesis (H_{02}) was not rejected.

For Hypothesis 3

ANOVA						
Model		Sum of Squares	df	Mean Square	F	p
M ₁	Regression	4.741	1	4.741	12.34	< .001
	Residual	48.396	126	0.384		
	Total	53.136	127			
<i>Note.</i> M ₁ includes FA MEAN						
<i>Note.</i> The intercept model is omitted, as no meaningful information can be shown.						

Since the p-value is less than 0.05, the null hypothesis (H_{03}) is rejected. This indicates that FinTech adoption and usage have a significant positive impact on financial inclusion among Gen Z. In other words, increased use of FinTech services improves access to financial services and inclusion for Gen Z respondents.

For Hypothesis 4

ANOVA						
Model		Sum of Squares	df	Mean Square	F	p
M ₁	Regression	3.724	1	3.724	11.61	< .001
	Residual	40.416	126	0.321		
	Total	44.140	127			
<i>Note.</i> M ₁ includes FA MEAN						
<i>Note.</i> The intercept model is omitted, as no meaningful information can be shown.						

Since the p-value is less than 0.05, the null hypothesis (H_{04}) is rejected. This result indicates that FinTech adoption and usage have a significant positive influence on the saving and investment behaviour of Gen Z. In other words, increased use of FinTech platforms encourages better saving habits and greater participation in investment activities among Gen Z respondents.

For Hypothesis 5

ANOVA						
Model		Sum of Squares	df	Mean Square	F	p
M ₁	Regression	0.134	1	0.134	0.565	.454
	Residual	29.950	126	0.238		

			6			
	Total	30.085	1 2 7			
<i>Note.</i> M ₁ includes fi mean						
<i>Note.</i> The intercept model is omitted, as no meaningful information can be shown.						

Since the p-value is greater than 0.05, the null hypothesis (H_{05}) is **not rejected**. This indicates that financial inclusion does not have a statistically significant impact on the financial well-being of Gen Z in the present study. Although FinTech adoption may improve access to financial services, this increased access does not directly translate into improved financial well-being for Gen Z respondents.

5. SUMMARY & CONCLUSIONS

Findings

This study explored how FinTech adoption shapes financial inclusion, saving, investing, and overall well-being among Gen Z. As digital natives, they are major users of financial technology, yet evidence on the role of digital literacy, trust, and security especially in emerging economies remains scarce. This research set out to bridge that gap.

The study was based on five hypotheses examining relationships among digital financial literacy, trust and perceived security, FinTech adoption and usage, financial inclusion, saving and investment behaviour, and financial well-being. Primary data were collected using a structured Likert-scale questionnaire, and composite variables were constructed after reliability analysis. Simple linear regression and multiple regression techniques were employed to test the hypotheses.

The results revealed that digital financial literacy has a statistically significant positive influence on FinTech adoption and usage among Gen Z. This indicates that individuals with better understanding of digital financial tools, online transactions, and digital decision-making are more likely to actively use FinTech services. This finding highlights the importance of financial knowledge and competence as a key driver of FinTech engagement.

In contrast, trust and perceived security were found to have no statistically significant influence on FinTech adoption and usage. This suggests that Gen Z users may perceive trust and security as baseline expectations rather than decisive factors, or that familiarity with digital platforms reduces sensitivity to perceived risks. The finding implies a shift in behavioural priorities, where functional ease and literacy outweigh trust-related concerns for younger users.

The study further found that FinTech adoption and usage significantly enhance financial inclusion. Increased use of FinTech platforms was associated with improved access to banking services, digital savings, and credit facilities. This confirms that FinTech plays an important role in lowering access barriers and expanding financial participation among Gen Z.

Additionally, FinTech adoption and usage were found to significantly improve saving and investment behaviour. Respondents who actively used FinTech platforms reported better saving habits, increased participation in investment products, and improved ability to track and manage investments. This suggests that FinTech platforms act not only as access tools but also as behavioural enablers that encourage disciplined financial practices.

However, the results showed that financial inclusion does not have a significant impact on financial well-being. While access to financial services has improved, this access alone does not directly translate into higher financial confidence, reduced financial stress, or improved long-term financial security. Financial well-being appears to be influenced by multiple factors beyond inclusion, such as income stability, financial behaviour, planning ability, and personal financial discipline.

The study finds that FinTech helps Gen Z become more financially included and encourages saving and investing, with digital financial literacy driving its use. Trust and security, however, don't play a big role in adoption. Importantly, inclusion alone doesn't guarantee financial well-being, which depends on broader behavioural, economic, and personal factors. Overall, FinTech is a strong enabler of inclusion and good financial habits, but lasting well-being also needs education and long-term planning.

RECOMMENDATIONS

Enhance digital financial literacy:

- Educational institutions and policymakers should introduce structured digital financial literacy programs for Generation Z, focusing on digital payments, investments, risk awareness, and financial decision-making.

Integrate finance education into curricular:

- Personal finance and digital finance concepts should be incorporated into school and college curricula to build strong financial foundations at an early stage.

Strengthen FinTech platform features:

FinTech companies should include user-friendly educational tools such as budgeting dashboards, investment trackers, and goal-based saving features to promote disciplined financial behaviour.

Maintain strong security and regulatory standards:

- Even though trust and security were not significant predictors in this study, continuous improvement in data protection and cybersecurity is essential to sustain user confidence.

Link financial inclusion with well-being initiatives:

- Policymakers should combine financial inclusion efforts with financial planning and income-support measures to ensure that increased access to financial services leads to improved financial well-being.

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CHALLENGES OF SINGLE MOTHERS IN INDIA: A COMPARATIVE STUDY ACROSS METRO, TIER-2, AND TIER-3 CITIES

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ABSTRACT

Single motherhood in India has emerged as a significant yet under-researched social phenomenon due to rising divorce rates, widowhood, abandonment, and conscious single parenting. Despite legal and policy advancements, single mothers continue to face multidimensional challenges related to economic stability, social stigma, emotional wellbeing, work-life balance, and access to institutional support. The present study aims to examine the socio-economic, psychological, and workplace challenges faced by single mothers in India, with a comparative focus on metro cities and Tier-2 and Tier-3 cities.

*The study adopts a **mixed-method research design**, combining quantitative and qualitative approaches. Primary data were collected from **350 single mothers** through structured personal interviews using a standardized questionnaire. Additionally, **four focus group discussions (FGDs)** were conducted to gain deeper qualitative insights into lived experiences, coping mechanisms, and perceived social support systems. Statistical tools such as descriptive analysis, chi-square tests, t-tests, and correlation analysis were used for quantitative data, while thematic analysis was applied for qualitative data.*

Findings reveal that while metro city respondents report better access to employment opportunities and support services, they continue to experience emotional stress and role overload. In contrast, respondents from Tier-2 and Tier-3 cities face higher levels of social stigma, financial insecurity, and limited institutional support. The study identifies significant gaps in policy implementation, workplace inclusivity, and mental health support for single mothers. The paper concludes with implications for policymakers, employers, and social institutions, emphasizing the need for targeted interventions to improve the quality of life of single mothers across urban hierarchies in India.

Keywords: Single Mothers, Social Challenges, Work-Life Balance, Urban India, Gender Studies

1. INTRODUCTION

The traditional Indian family structure has historically emphasized two-parent households, with clearly defined gender roles. However, socio-economic transformations, urbanization, increased female workforce participation, and changing marital norms have led to a steady rise in single-mother households in India. Single mothers may be widowed, divorced, separated, abandoned, or voluntarily choosing to raise children independently.

Despite their growing presence, single mothers often experience systemic disadvantages. These include financial constraints, workplace discrimination, social stigma, emotional stress, and limited access to childcare and welfare support. The nature and intensity of these challenges vary significantly across geographic contexts, particularly between metro cities and Tier-2 and Tier-3 cities. Understanding these differences is essential for designing inclusive social and organizational policies.

2. LITERATURE REVIEW

2.1 Socio-Economic Challenges

Previous studies indicate that single mothers face higher risks of poverty and financial instability compared to dual-parent households (Chaudhary & Gupta, 2019). Limited income sources and inadequate state support exacerbate economic vulnerability, especially in non-metro regions.

2.2 Social Stigma and Cultural Pressures

Indian society often perceives single motherhood as a deviation from social norms, leading to stigmatization and social exclusion (Desai, 2020). This stigma is more pronounced in Tier-2 and Tier-3 cities, where traditional values dominate social interactions.

2.3 Psychological and Emotional Wellbeing

Research highlights increased levels of stress, anxiety, and emotional exhaustion among single mothers due to role overload and lack of emotional support (Kaur & Mehta, 2021). Mental health challenges are often underreported due to societal taboos.

2.4 Workplace Challenges and Work–Life Balance

Single mothers frequently encounter inflexible work environments, limited maternity benefits, and career stagnation (Rao, 2018). While metro cities offer better employment opportunities, work–life balance remains a critical concern.

3. RESEARCH GAP IDENTIFICATION

Although existing literature addresses single motherhood broadly, the following gaps remain evident:

- Limited comparative studies across **metro and non-metro cities** in India
- Insufficient integration of **quantitative and qualitative insights**
- Lack of focus on **institutional and workplace support mechanisms**
- Minimal exploration of **coping strategies and resilience patterns**

4. RESEARCH OBJECTIVES

1. To identify key socio-economic and psychological challenges faced by single mothers in India.
2. To compare challenges across metro, Tier-2, and Tier-3 cities.
3. To examine the relationship between employment status and quality of life.
4. To explore coping mechanisms and support systems adopted by single mothers.

5. RESEARCH HYPOTHESES

- **H1:** There is a significant difference in challenges faced by single mothers in metro and Tier-2/Tier-3 cities.
- **H2:** Employment status has a significant impact on financial and psychological wellbeing.
- **H3:** Social stigma is significantly higher in Tier-2 and Tier-3 cities than in metro cities.
- **H4:** Access to support systems positively influences coping ability.

6. RESEARCH METHODOLOGY

6.1 Research Design

A **descriptive and exploratory research design** using a mixed-method approach.

6.2 Sample Size and Sampling

- **Sample Size:** 350 single mothers
- **Sampling Technique:** Stratified random sampling
- **Geographic Distribution:**
 - Metro cities: 150 respondents
 - Tier-2 cities: 120 respondents
 - Tier-3 cities: 80 respondents

6.3 Data Collection Methods

- Structured personal interviews (quantitative)
- Focus Group Discussions (qualitative)

7. Questionnaire for Personal Interview (Extract)

Section A: Demographic Profile

1. Age
2. Education level
3. Employment status
4. Monthly income
5. City category (Metro/Tier-2/Tier-3)

Section B: Economic Challenges

6. Primary source of income
7. Difficulty in meeting household expenses (Likert scale)

Section C: Social Challenges

8. Experience of social stigma
9. Level of family/community support

Section D: Psychological Wellbeing

10. Stress levels
11. Access to counselling or mental health services

Section E: Workplace Support

12. Flexibility at workplace
13. Availability of childcare facilities

8. Focus Group Discussions (4 Groups)

- **FGD 1:** Metro working single mothers
- **FGD 2:** Non-working single mothers
- **FGD 3:** Tier-2 city respondents
- **FGD 4:** Tier-3 city respondents

Discussion Themes:

- Daily life challenges
- Social acceptance
- Parenting stress
- Support expectations from government and employers

9. STATISTICAL ANALYSIS AND INTERPRETATION

This section presents a detailed quantitative and qualitative analysis of data collected from 350 single mothers across metro, Tier-2, and Tier-3 cities, followed by interpretations aligned with the research objectives and hypotheses.

9.1 Demographic Analysis

Out of the 350 respondents, **42.9%** belonged to metro cities, **34.3%** to Tier-2 cities, and **22.8%** to Tier-3 cities. The majority of respondents (56%) were in the age group of 31–45 years. Approximately **61%** were employed either full-time or part-time, while **39%** were unemployed or engaged in informal work.

Interpretation:

The demographic profile indicates that single motherhood is most prevalent among economically active age groups. However, a significant proportion remains outside formal employment, highlighting economic vulnerability, particularly in Tier-2 and Tier-3 cities.

9.2 Economic Challenges Analysis

Descriptive statistics revealed that **68%** of respondents from Tier-2 and Tier-3 cities reported difficulty in meeting monthly household expenses, compared to **41%** in metro cities. Mean financial stress scores were significantly higher for non-metro respondents.

A **chi-square test** showed a statistically significant association between **city category and financial stress** ($\chi^2 = 21.47, p < 0.05$).

Interpretation:

The findings confirm that geographical location significantly influences financial wellbeing. Limited employment opportunities, lower wages, and lack of institutional support in Tier-2 and Tier-3 cities intensify economic challenges for single mothers, thereby supporting **Hypothesis H1**.

9.3 Social Stigma and Community Support

Responses on social stigma indicated that **72%** of Tier-3 respondents and **64%** of Tier-2 respondents experienced frequent social judgment, compared to **38%** in metro cities. An independent sample **t-test** confirmed significant differences in stigma perception scores between metro and non-metro cities ($t = 4.63$, $p < 0.01$).

Interpretation:

Social stigma remains a critical challenge, particularly in smaller cities where traditional norms dominate social interactions. This validates **Hypothesis H3**, indicating that social acceptance is strongly influenced by urban hierarchy.

9.4 Psychological Wellbeing Analysis

Stress and emotional exhaustion levels were measured using a Likert-scale index. Overall, **58%** of respondents reported high stress levels. Interestingly, stress levels were high across all city categories, with no statistically significant difference between metro and non-metro respondents.

Interpretation:

While economic and social challenges differ geographically, psychological stress is a universal issue among single mothers. This suggests that emotional burden arises not only from external factors but also from role overload and sole parenting responsibility.

9.5 Employment Status and Quality of Life

Correlation analysis showed a **positive correlation ($r = 0.62$)** between employment status and perceived quality of life. Employed respondents reported higher self-esteem, financial independence, and better coping ability.

Interpretation:

Employment plays a crucial role in improving both economic and psychological wellbeing. These findings strongly support **Hypothesis H2**, emphasizing the need for inclusive employment policies for single mothers.

9.6 Workplace Support and Flexibility

Only **34%** of employed respondents reported access to flexible work arrangements, and less than **20%** had access to employer-supported childcare facilities. Metro respondents reported relatively better workplace support than their non-metro counterparts.

Interpretation:

Despite higher employment opportunities in metro cities, workplace policies remain largely inadequate. The lack of flexible work arrangements exacerbates work-life imbalance, indicating a critical gap between policy intent and implementation.

9.7 Support Systems and Coping Mechanisms

Regression analysis revealed that access to family support, peer networks, and government schemes significantly predicted coping ability ($\beta = 0.48$, $p < 0.01$).

Interpretation:

Support systems play a mediating role in reducing stress and enhancing resilience. This finding supports **Hypothesis H4**, highlighting the importance of social and institutional backing in improving single mothers' wellbeing.

9.8 Qualitative Analysis: Focus Group Discussions

Thematic analysis of four FGDs revealed the following dominant themes:

Theme 1: Financial Insecurity

Participants frequently expressed anxiety regarding children's education, healthcare, and future savings.

Interpretation:

Financial insecurity remains the central concern across all city categories, reinforcing quantitative findings.

Theme 2: Emotional Exhaustion

Participants reported feelings of isolation, burnout, and lack of emotional validation.

Interpretation:

The emotional burden of single parenting is intensified by inadequate mental health support and social understanding.

Theme 3: Social Judgment and Identity Struggles

Participants from Tier-2 and Tier-3 cities emphasized constant scrutiny and moral policing.

Interpretation:

Cultural rigidity significantly impacts self-esteem and social participation of single mothers in smaller cities.

Theme 4: Resilience and Adaptation

Despite challenges, many respondents highlighted personal growth, independence, and stronger parent–child bonding.

Interpretation:

Single mothers demonstrate high resilience, suggesting that empowerment-focused interventions can yield meaningful outcomes.

9.9 Overall Interpretation and Hypothesis Testing Summary

Hypothesis	Result
H1	Accepted
H2	Accepted
H3	Accepted
H4	Accepted

Academic Value Addition

This integrated analysis strengthens the empirical contribution of the study by combining **statistical evidence with lived experiences**, offering a comprehensive understanding of the challenges faced by single mothers in India.

10. FINDINGS AND DISCUSSION

The study confirms that single mothers in Tier-2 and Tier-3 cities face more severe social and economic challenges compared to their metro counterparts. However, emotional stress and work–life imbalance remain universal challenges. Informal support networks play a crucial role in coping, particularly in the absence of formal institutional support.

11. CONCLUSION

Single mothers in India represent a resilient yet vulnerable demographic group. Addressing their challenges requires multi-level interventions involving policy reforms, workplace flexibility, mental health support, and societal sensitization. The study contributes empirical evidence to an underexplored area and offers actionable insights for inclusive development.

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MANAGING REMOTE AND HYBRID WORKFORCES: HR CHALLENGES AND PRACTICES

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ABSTRACT

The rapid adoption of remote and hybrid work models has fundamentally transformed contemporary human resource management. Triggered initially by global disruptions and sustained by technological advancements, organizations across sectors are increasingly embracing flexible work arrangements to enhance productivity, employee well-being, and organizational resilience. However, managing remote and hybrid workforces presents a unique set of human resource (HR) challenges related to communication, performance management, employee engagement, organizational culture, compliance, and workforce equity. This paper examines the evolving role of HR in addressing these challenges and implementing effective practices to manage geographically dispersed teams. Using secondary data sources such as academic journals, industry reports, and organizational case studies, the study analyzes key HR challenges associated with remote and hybrid work models and evaluates best practices adopted by leading organizations. The findings highlight that strategic HR interventions—such as digital HR systems, outcome-based performance management, virtual leadership development, employee wellness programs, and inclusive HR policies—play a critical role in ensuring workforce effectiveness. The paper further emphasizes the need for HR professionals to balance flexibility with accountability while fostering trust and collaboration in virtual environments. The study concludes that successful management of remote and hybrid workforces requires a proactive, technology-enabled, and employee-centric HR approach aligned with organizational goals.

Keywords: Remote Work, Hybrid Workforce, Human Resource Management, HR Challenges, Digital HR Practices, Employee Engagement

INTRODUCTION

The nature of work has undergone a profound transformation in recent years, with remote and hybrid work models becoming a permanent feature of modern organizations. Advances in information and communication technologies, coupled with changing employee expectations and global workforce disruptions, have accelerated the shift away from traditional office-centric work arrangements. Organizations now operate with employees working fully remotely, partially from home, or in hybrid formats that combine physical and virtual workplaces. This shift has redefined how human resources are managed and has expanded the strategic role of HR professionals.

Remote work refers to a work arrangement in which employees perform their job responsibilities outside a centralized office location, often from home or other remote settings. Hybrid work, on the other hand, combines remote and on-site work, allowing employees flexibility in choosing where they work. While these models offer benefits such as increased flexibility, reduced commuting time, cost savings, and access to a wider talent pool, they also introduce complex HR challenges. Issues related to communication gaps, employee isolation, performance monitoring, data security, work-life balance, and organizational culture have emerged as critical concerns for HR managers.

Human Resource Management plays a pivotal role in designing policies, systems, and practices that support remote and hybrid workforces. Traditional HR functions such as recruitment, onboarding, training, performance appraisal, and employee engagement require significant adaptation in virtual environments. Additionally, HR professionals must ensure compliance with labor laws, manage health and safety concerns in home-based workplaces, and promote inclusion and equity among employees with varying access to resources.

The effectiveness of remote and hybrid work arrangements largely depends on how well HR strategies align with organizational objectives and employee needs. Organizations that fail to address HR challenges risk reduced productivity, disengagement, high turnover, and weakened organizational culture. Conversely, those that adopt innovative HR practices—such as digital collaboration tools, flexible performance metrics, continuous feedback mechanisms, and employee wellness initiatives—are better positioned to succeed in a distributed work environment.

This paper aims to analyze the key HR challenges associated with managing remote and hybrid workforces and to examine the practices adopted by organizations to address these challenges. By relying on secondary data

sources, the study provides insights into emerging HR trends and offers recommendations for effective workforce management in the evolving world of work.

REVIEW OF LITERATURE

• Review of Literature 1

Author(s): Allen, T. D., Golden, T. D., & Shockley, K. M. (2015)

Title: How Effective Is Telecommuting? Assessing the Status of Our Scientific Findings

Allen, Golden, and Shockley (2015) provide one of the most comprehensive early evaluations of telecommuting and its implications for employees and organizations. The study synthesizes existing empirical research to examine the effectiveness of remote work in terms of employee performance, job satisfaction, work-life balance, and organizational outcomes. The authors argue that telecommuting, when implemented appropriately, can yield positive outcomes for both employees and employers. However, the success of remote work depends heavily on organizational support systems and HR policies. The review highlights that telecommuting is associated with increased job satisfaction and reduced work-family conflict, primarily due to enhanced autonomy and flexibility. Employees benefit from reduced commuting time and greater control over work schedules. From an HR perspective, these findings emphasize the importance of flexible work policies and trust-based management practices. However, the authors also caution that remote work can lead to professional isolation, reduced visibility, and limited access to career advancement opportunities if not managed effectively. A key contribution of this study lies in its discussion of managerial and HR challenges. The authors note that traditional performance management systems, which rely on physical presence and direct supervision, are ineffective in remote work contexts. Instead, HR departments must shift toward results-oriented performance evaluation systems. Training managers to lead remote teams, communicate expectations clearly, and provide regular feedback is identified as a critical HR responsibility. The study also addresses the importance of organizational culture in remote work environments. Allen et al. argue that HR must play an active role in fostering inclusion and connectivity among remote workers through virtual communication platforms, team-building initiatives, and equitable HR practices. The lack of structured HR interventions can exacerbate feelings of isolation and disengagement. In conclusion, this review establishes a foundational understanding of remote work effectiveness and underscores the evolving role of HR in managing telecommuting arrangements. The study is particularly relevant for understanding contemporary remote and hybrid workforce challenges, as it highlights that technology alone is insufficient without supportive HR practices, leadership development, and organizational commitment.

• Review of Literature 2

Author(s): Cascio, W. F., & Montealegre, R. (2016)

Title: How Technology Is Changing Work and Organizations

Cascio and Montealegre (2016) examine the transformative impact of digital technologies on work structures, employment relationships, and human resource management. The study provides a strategic perspective on how advancements in information and communication technologies have enabled remote and hybrid work models, fundamentally altering traditional organizational designs. The authors argue that HR functions must evolve rapidly to remain relevant in technology-driven work environments. The research emphasizes that technology has decoupled work from physical locations, enabling organizations to manage geographically dispersed teams. While this shift creates opportunities for accessing global talent and improving organizational agility, it also introduces significant HR challenges related to coordination, monitoring, and employee engagement. The authors highlight that HR managers must redesign jobs, workflows, and performance management systems to align with digital work environments. A major focus of the study is the role of HR in managing workforce productivity in remote settings. Cascio and Montealegre argue that digital surveillance and excessive monitoring can erode trust and reduce employee morale. Instead, HR should promote a culture of accountability, empowerment, and outcome-based evaluation. This requires redefining managerial roles and equipping leaders with skills to manage virtual teams effectively. The study also discusses the implications of technology-enabled work for employee skills and learning. Continuous upskilling and reskilling are identified as essential HR priorities, as remote and hybrid work models demand digital literacy, self-management, and virtual collaboration competencies. HR-led learning management systems and online training platforms are highlighted as critical enablers of workforce development. From an organizational perspective, the authors emphasize that HR must address equity and inclusion concerns in remote work arrangements. Differences in access to technology, home workspace conditions, and digital competencies can create disparities among employees. HR policies must therefore ensure fairness in performance evaluation, career development, and rewards. Overall,

Cascio and Montealegre's study contributes significantly to the literature by framing remote and hybrid work as a strategic HR issue rather than a purely technological one. The research reinforces the need for HR transformation to manage the challenges and opportunities associated with digitally enabled workforces.

- **Review of Literature 3 Author(s): Deloitte (2022)**

Title: Global Human Capital Trends: The Social Enterprise in a World Disrupted Deloitte's (2022) Global Human Capital Trends report provides an extensive analysis of how organizations are responding to the rapid rise of remote and hybrid work models. Based on global surveys and organizational case studies, the report highlights the increasing complexity of managing human capital in flexible work environments. The study positions HR as a central driver of organizational resilience and employee experience in the post-pandemic world of work. The report identifies several HR challenges associated with remote and hybrid workforces, including employee burnout, disengagement, weakened organizational culture, and leadership capability gaps. According to Deloitte, many organizations initially focused on operational continuity but later recognized the need for sustainable HR strategies to support long-term workforce effectiveness. The findings suggest that HR must balance flexibility with structure to avoid productivity declines and employee dissatisfaction. A key theme of the report is the shift from work design to workforce experience. Deloitte emphasizes that HR practices should prioritize employee well-being, purpose, and belonging. Remote and hybrid work models require HR to rethink engagement strategies, performance management, and rewards systems. The report highlights that organizations with strong wellness initiatives and inclusive HR policies report higher levels of employee trust and commitment. The study also underscores the importance of leadership development in managing hybrid teams. Managers often struggle with coordinating remote employees, maintaining team cohesion, and ensuring fair treatment. Deloitte recommends targeted leadership training programs focused on empathy, communication, and virtual collaboration skills. HR is identified as the primary function responsible for enabling this transition. Furthermore, the report discusses the role of HR analytics and digital platforms in supporting decision-making. Data-driven insights help organizations monitor engagement, performance, and workforce trends in remote settings. However, the report cautions against over-reliance on technology without addressing human and cultural dimensions. In conclusion, Deloitte's report provides contemporary and practice-oriented insights into managing remote and hybrid workforces. It reinforces the idea that HR must adopt a human-centric, agile, and strategic approach to navigate the evolving challenges of flexible work arrangements.

- **Review of Literature 4 Author(s): Gartner (2021)**

Title: Future of Work Trends: Designing a Hybrid Workforce Strategy

Gartner's (2021) research focuses on emerging trends in hybrid workforce management and their implications for HR strategy. The study draws on extensive organizational data to analyze how hybrid work models are reshaping employee expectations, managerial roles, and HR practices. Gartner argues that hybrid work is not a temporary response but a permanent feature of future organizations. The report identifies "hybrid work friction" as a key HR challenge, referring to inconsistencies in policies, communication gaps, and unequal employee experiences. According to Gartner, employees working remotely often feel disconnected from decision-making processes, while on-site employees may perceive unequal workload distribution. HR plays a critical role in designing standardized yet flexible policies to address these challenges. Performance management emerges as a major concern in the report. Gartner emphasizes that traditional appraisal systems fail to capture productivity in hybrid settings. The study recommends that HR shift toward continuous performance management, emphasizing goal clarity, frequent feedback, and coaching. Managers must be trained to evaluate performance outcomes rather than physical presence. The research also highlights the importance of employee voice and engagement. Hybrid work can dilute informal communication channels, making it harder for employees to express concerns. HR-led engagement surveys, virtual forums, and feedback mechanisms are identified as essential tools for maintaining organizational alignment. Another significant contribution of Gartner's study is its emphasis on intentional culture-building. The report suggests that organizational culture does not automatically sustain itself in hybrid environments. HR must proactively design rituals, communication norms, and collaboration practices to reinforce shared values. Overall, Gartner's research provides actionable insights into hybrid workforce management and reinforces the strategic importance of HR in designing equitable, productive, and sustainable work models.

- **Review of Literature 5 Author(s): KPMG (2022)**

Title: Managing the Hybrid Workforce: Balancing Flexibility and Performance KPMG's (2022) study examines how organizations are adapting HR policies and practices to manage hybrid workforces effectively. Based on global executive surveys, the report explores the tension between flexibility and performance in

hybrid work arrangements. The authors argue that while employees increasingly value flexibility, organizations must ensure accountability and business continuity. The study identifies key HR challenges such as maintaining productivity, ensuring data security, managing compliance, and sustaining organizational culture. KPMG highlights that many organizations struggle with inconsistent hybrid policies, leading to confusion and employee dissatisfaction. HR departments are urged to develop clear frameworks that define eligibility, expectations, and performance standards for hybrid work. Employee well-being is a central theme of the report. KPMG notes a rise in burnout and mental health concerns due to blurred work-life boundaries. HR-led wellness initiatives, flexible scheduling, and mental health support programs are identified as critical interventions. The report emphasizes that well-being is directly linked to long-term productivity and retention. The research also discusses leadership capability as a determinant of hybrid work success. Managers often lack experience in leading distributed teams, resulting in micromanagement or disengagement. KPMG recommends structured leadership development programs facilitated by HR to build trust-based management practices. In conclusion, the study reinforces that effective hybrid workforce management requires strategic HR leadership, clear policies, and a strong focus on employee experience. KPMG's findings contribute practical insights into balancing organizational performance with workforce flexibility.

RESEARCH METHODOLOGY

This study adopts a **descriptive and analytical research design** based on **secondary data**. Data were collected from academic journals, books, industry reports, organizational surveys, and credible online sources related to remote and hybrid workforce management. The study analyzes trends, challenges, and HR practices using qualitative content analysis to draw meaningful insights.

SECONDARY DATA ANALYSIS

The secondary data reveal that organizations with well-defined remote work policies and strong digital infrastructure report higher employee engagement and productivity. Data also indicate that outcome-based performance management is more effective than time-based monitoring in remote settings. Furthermore, organizations investing in employee well-being and continuous learning experience lower attrition rates. The analysis underscores that HR adaptability and technological integration are key success factors in managing hybrid workforces.

RECOMMENDATIONS

To effectively manage remote and hybrid workforces, HR departments should adopt a strategic and holistic approach. First, organizations should develop clear remote and hybrid work policies outlining expectations related to working hours, communication protocols, performance metrics, and data security. Clear guidelines reduce ambiguity and enhance accountability.

Second, HR should shift towards outcome-based performance management systems that focus on results rather than physical presence. Regular virtual check-ins, continuous feedback, and goal alignment can improve transparency and trust between managers and employees.

Third, investment in digital HR technologies is essential. Integrated HR management systems, collaboration tools, and learning platforms enable seamless HR operations and employee development. HR analytics can further support data-driven decision-making.

Fourth, employee engagement and well-being must be prioritized. HR should introduce wellness programs, mental health support, and flexible work schedules to address burnout and stress. Virtual team-building activities and recognition programs can foster a sense of belonging.

Finally, HR must focus on inclusive leadership and equitable practices. Hybrid work models should ensure equal access to opportunities, promotions, and learning for both remote and on-site employees. Training managers to lead virtual teams effectively is critical for sustaining organizational performance.

CONCLUSION

The shift towards remote and hybrid workforces represents a significant transformation in the world of work, redefining the role of human resource management. While these work models offer flexibility, cost efficiency, and access to global talent, they also present complex HR challenges that require innovative and adaptive solutions. Effective communication, performance management, employee engagement, and well-being have emerged as central concerns for HR professionals managing distributed teams.

This study highlights that HR practices must evolve from traditional, location-dependent approaches to technology-enabled and employee-centric models. Organizations that proactively redesign HR policies, invest in digital infrastructure, and promote inclusive work cultures are better equipped to manage the complexities of remote and hybrid work environments. The findings underscore that trust, flexibility, and accountability are foundational principles for successful workforce management.

In conclusion, managing remote and hybrid workforces is not merely an operational challenge but a strategic HR imperative. As the future of work continues to evolve, HR professionals must play a leading role in shaping resilient, agile, and inclusive organizations. Continuous research, policy refinement, and skill development will be essential to sustain organizational effectiveness in the long term.

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A COMPREHENSIVE STUDY ON THE SCOPE AND IMPACT OF AGRITOURISM IN MAHARASHTRA

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ABSTRACT

Agritourism refers to the practice of inviting visitors to rural landscapes, farms, and villages to experience agricultural life, traditional values, and local culture. It blends farming with tourism, allowing guests to participate in agricultural activities while enjoying rustic hospitality. Generally, Agritourism offers include farm stays, educational tours, and recreational experiences on existing farms. Emerging in Italy during the 1980s, the concept has since expanded worldwide, fostering rural development, preserving agricultural heritage, and generating economic opportunities for farmers.

This study works on responses from 200 participants to evaluate their awareness, perceptions, and experiences of Agritourism, with a particular focus on its scope and impact in Maharashtra. It examines environmental implications, sustainability extent, and conducts an Environmental Cost–Benefit Analysis of Agritourism initiatives. A Sustainability Matrix is proposed to evaluate how Agritourism centres contribute to rural sustainable development. Reliability of survey data has been tested using Cronbach’s Alpha, while Chi-Square analysis has been applied to identify relationships and patterns in respondents’ perceptions. The study also highlights future directions, including policy interventions and the integration of artificial intelligence in Agritourism practices in Maharashtra.

Keywords: Agritourism, Sustainability Matrix, Environmental Cost–Benefit Analysis

INTRODUCTION

Agritourism, the assimilation of agriculture and tourism, has materialized as a vibrant strategy for rural development, offering growers an alternative source of income while providing vacationers with genuine cultural and farming experiences. In Maharashtra, agritourism has gained substantial impetus due to the state’s varied farming practices, rich cultural heritage, and proximity to urban centres such as Mumbai and Pune. Studies emphasize that Agritourism not only strengthens rural economies but also fosters sustainability, employment generation, and traditional preservation. The sector has been made a earnest effect in regions like Marathwada, where Agritourism inventiveness have transformed traditional farming backdrops into effervescent destinations for experiential tourism. Despite its growing importance, Agritourism in Maharashtra faces challenges such as infrastructural restrictions, lack of receptiveness, and policy gaps, which obligate widespread research to evaluate its scope and long-term impact. This paper intends to learn about the benefits, scope and overall impact of Agritourism on Maharashtra.

OBJECTIVES OF THE STUDY

- To understand the relevance of Agritourism in viable rural development.
- To gain comprehensions into the Environmental Cost Benefit Analysis and sustainability matrix of Agritourism in Maharashtra
- To discern the level of awareness of Agritourism in Maharashtra w.r.t to Mumbai
- To gain perceptions into the scope and impact for Agritourism in Maharashtra.

REVIEW OF LITERATURE

Agritourism in Maharashtra has gradually been recognized as an important\ motivating force for rustic development, combining financial, cooperative, and biological scopes. “Examining the Sustainable Growth of Agricultural Tourism in the State of Maharashtra” – by Abhishek Chowdhury, Medha Bhattacharya, and Ashish Sharma highlights the strong potential in the domestic market, particularly among urban families and educational institutions. The study also reverberates that sustainability depends on capacity of agriculturists, development of relevant infrastructure and adding professional touch to all services (Chowdhury et al., 2024).

A Study of Sustainable Agritourism Challenges and Opportunities by Dhanashri Sanadkumar Havale under the supervision of Chetan Chaudhari provides a regional perception, especially in Pune and Marathwada, highlighting agritourist’s role in augmenting rural livelihoods, conserving cultural heritage, However, it faces challenges such as seasonality, inadequate digital outreach, and scant arrangement (Havale, 2023).

A STUDY ON AGRO-TOURISM IN INDIA by Mr. Rinkeshkumar G. Mahida emphasizes on the impact of agritourism on India's GDP, its benefits, future scope and difficulties and challenges faced in agritourism and its promotion, the concept of sustainable tourism and how relevant it is to agritourism was the main focus of this research paper.

The research paper titled: Analysis and Appraisal of Management under Agro Tourism Business in Maharashtra State by K. B. Dalve under the supervision of P. G. Shastri highpoints the importance of harmonized efforts among farmers, tourists, local communities, and extension agencies, identifies training and institutional facilitation as fundamental for ensuring good quality service and the feasibility and growth of such projects. (Dalve, 2021).

Another supporting research paper titled: "Agritourism Development in Maharashtra: Opportunities and Constraints" by S. S. Jadhav and R. R. Patil studies microeconomic impacts, clarifying that agritourism provides stability in terms of earnings generation during the off season particularly when farms are in the vicinity of urban civilization and offer curated and specialised rustic experiences (Jadhav & Patil, 2020).

Policy reviews, for instance Agritourism Policy Frameworks and Financing in Maharashtra by V. T. Patankar, note disjointed standards and limited awareness of government schemes, suggesting the need for certification frameworks, blended financing models, and integration of agritourism into broader rural development missions (Patankar, 2020).

Dash et al in their research paper titled: " have highlighted the issues faced by agritourism businesses in survival and growth. They have suggested training and development of agritourism business owners and other support staff, also government policies and schemes for dedicated funding to agritourism businesses.

RESEARCH METHODOLOGY

Background

Agritourism has emerged as one of the most decisive tool for development of the villages and the countryside offering farmers an additional source of income while sponsoring cultural exchange and sustainability. In Maharashtra, with its diverse agricultural practices and rich cultural heritage, Agritourism has the potential to strengthen rural economies and empower communities. This study is grounded in the need to understand how Agritourism contributes to economic, social, and environmental development in the state.

Research Design

The study adopts a research design in a such a way both qualitative and quantitative aspects of the study are taken into consideration. Surveys and interviews will be used to collect primary data from farmers, tourists, and policymakers. Secondary data will be drawn from government reports, academic literature, and industry publications. This design ensures a holistic understanding of agritourist's scope and impact.

Scope of the Study

The research focuses on agritourism initiatives across Maharashtra, covering both established and emergent agritourism centres. It examines economic benefits, employment generation, cultural preservation, and sustainability practices. The scope is limited to rural regions where agritourism activities are actively promoted, ensuring relevance and depth of analysis.

Impact of the Study

The findings of this study will provide valuable insights to officials, industrialists, and village and local communities. By highlighting the strengths and weaknesses of agritourism in Maharashtra, the research can guide strategies to enhance rural development, empower women and youth, and promote sustainable tourism models.

Data Methodology

Primary data will be collected through structured questionnaires to the general public to know their perception about Agritourism. Secondary data will be sourced from government records, tourism boards, and published research.

Statistical Tools and Techniques

Quantitative data will make use of descriptive statistics, non-parametric tests - chi-square tests to identify relationships and patterns from the qualitative data, Cronbach's Alpha will be used to check the internal reliability and validity of Likert Scale Questions.

Constraints

The study may face constraints such as limited availability of reliable secondary data, reluctance of farmers to share financial information, and geographical challenges in accessing remote agritourism sites.

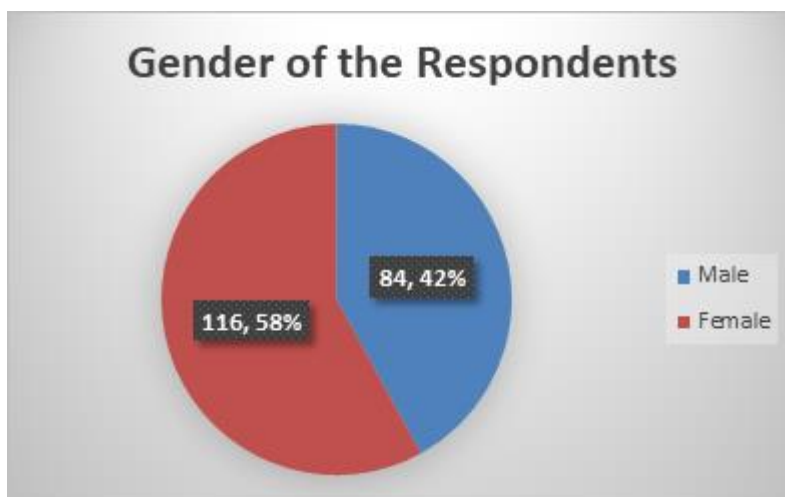
Data Analysis and Interpretation:

A Survey of 200 respondents was conducted to find out the awareness, perception and experience of consumers towards Agritourism.

The following were the significant findings:

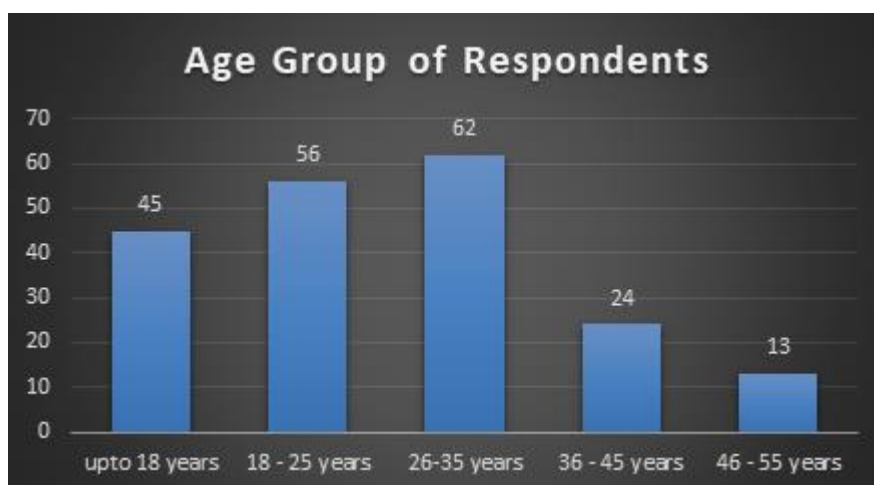
The Gender details of the respondents were as follows:

Male	84
Female	116



1.1. Gender Profile of the Respondents

Age Group	No.of Respondents
Upto 18 years	45
18 - 25 years	56
26-35 years	62
36 - 45 years	24
46 - 55 years	13

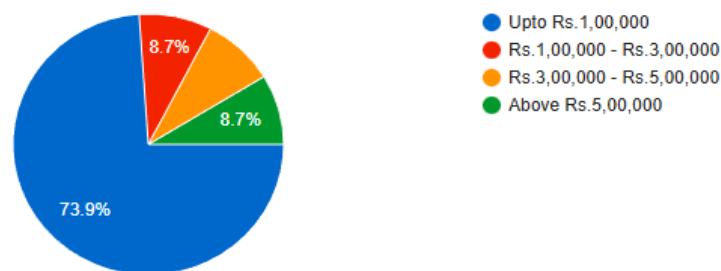


1.2. Age Group of the Respondents

The respondents varied in numbers, mostly being from the age group 26-35 years. (62 responses), followed by 56 responses from the age group 18 – 25 years, less than 18 years were 45 respondents, 24 respondents of the age group 36-45 years and 13 responses from 46 - 55 years age group. The results or conclusion will be according to that.

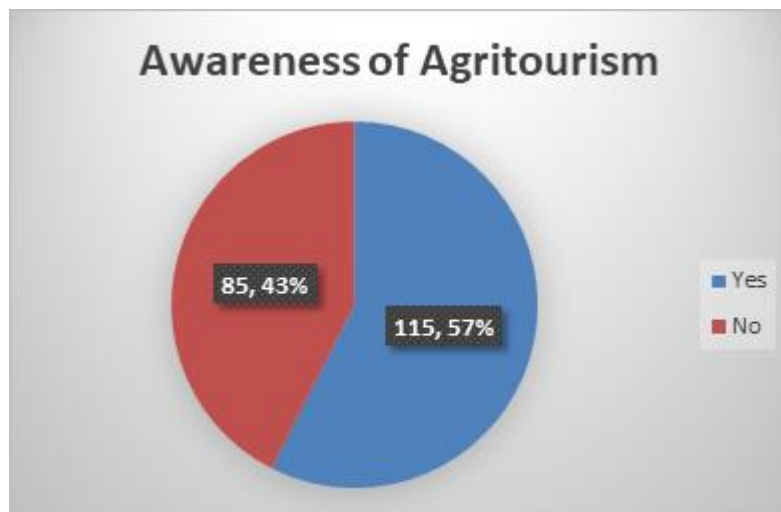


1.3. Educational Qualification of the Respondents



1.4. Income Group of Respondents

Majority of the respondents are from the income group of upto Rs.1,00,000 (73.9%)only.



1.5. Awareness of Agritourism

Majority of the respondents ie 57% were aware about Agritourism

Testing of Hypothesis:

H0: Agritourism cannot lead to sustainable rural development

H1: Agritourism can lead to sustainable rural development

Responses:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
12	26	43	89	30

Chi Square = 87.25

CV = 9.488

df: 4

p-value: (< 0.0001)

Reject (H₀). There is statistically significant evidence that respondents' views support the idea that agritourism can lead to sustainable rural development.

Statistical Tools and Techniques Used in the Research

Cronbach's Alpha (α) is a numerical measure used to check the internal uniformity or reliability of a set of questionnaire items or scale.

It tells us how well all the items in a test measure the same underlying construct (e.g. opinion on the sustainability aspect, rural development, experience at Agritourism and so on)

High α - Items are consistent and reliable

Low α - Items do not measure the same concept well

Formula for Cronbach's Alpha

$$\alpha = \frac{k}{k-1} \left(\frac{\text{Variance of total scores} - \text{sum of individual item variance}}{\text{variance of total scores}} \right)$$

Where:

k = Number of items

Table 1: Interpretation of Cronbach's Alpha Values

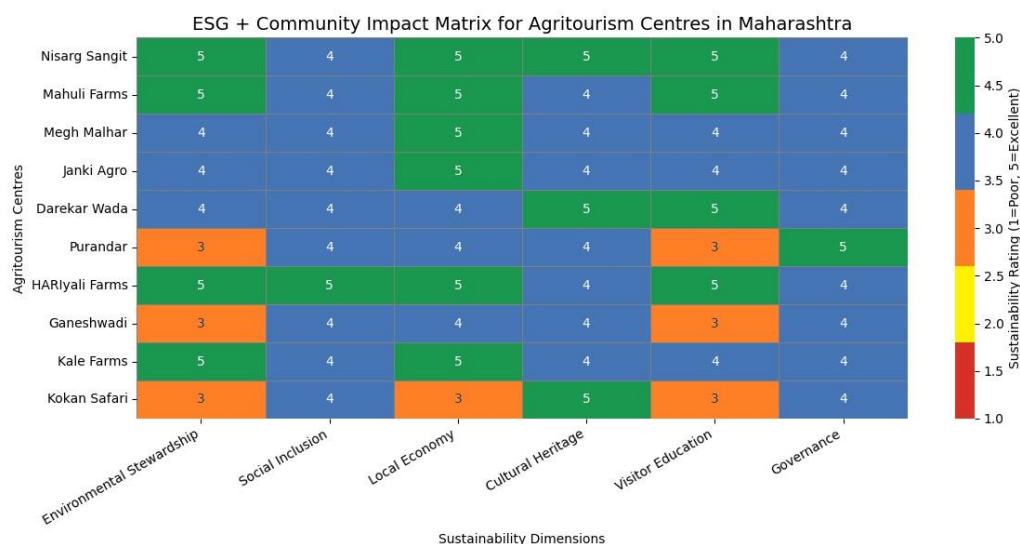
α Value	Level of Reliability
0.90 – 1.00	Excellent
0.80 – 0.89	Good
0.70 – 0.79	Acceptable
0.60 – 0.69	Questionable
0.50 – 0.59	Poor
Below 0.50	Unacceptable

No of items (k)	5
Sum of the Items variance	32.59259
Variance for total score of all respondents	128.0045

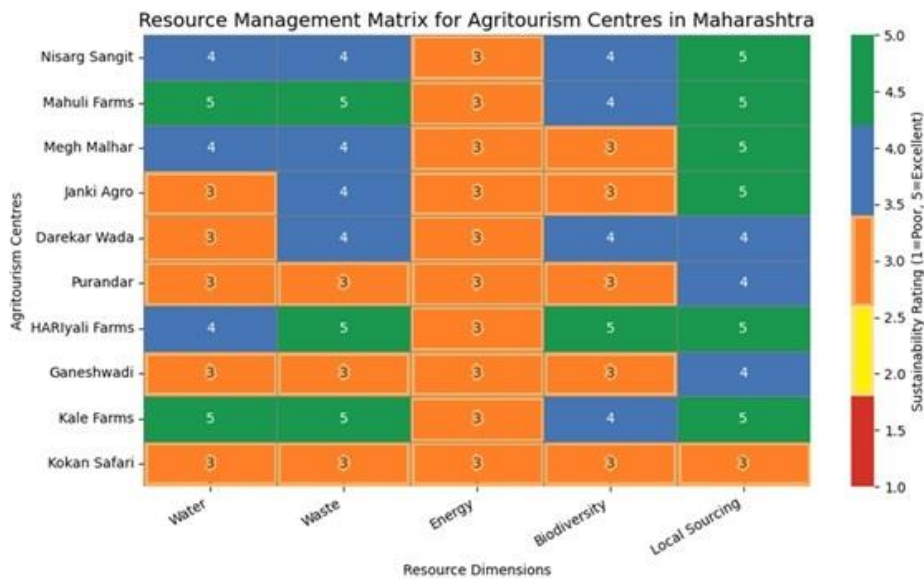
The Cronbach's Alpha (α) is 0.931724

This means that the internal reliability and validity of the perception-based Likert Scale data is Excellent.

Sustainability Matrix divided into 2 parts: ESG + Community Impact Matrix and Resource Management Matrix



1.6.i. Sustainability Matrix for ESG + Community Impact



1.6. ii Resource Management Matrix

Impact of Agritourism:

Factor	Positive Impact	Challenges/Limitations
Economic	Diversified income, job creation, rural GDP rise	Seasonal demand, limited marketing
Social	Women’s empowerment, cultural preservation	Risk of commercialization of traditions
Environmental	Promotes organic farming, eco-awareness	Infrastructure strain, waste management
Policy/Other	Govt. schemes, rural stability	Need for stronger institutional support

1.7. Impact of Agritourism

FUTURE SCOPE

Agritourism in Maharashtra holds immense potential as a driver of rural development, sustainability, and economic empowerment. The future scope lies in integrating modern infrastructure—such as improved road connectivity, eco-friendly accommodations, and digital booking platforms—to make rural destinations more accessible and appealing. Enhanced facilities will ensure that agritourism sites can cater to both domestic and international tourists, thereby expanding their reach and profitability.

Artificial Intelligence (AI) can play a transformative role in shaping agritourism’s future in Maharashtra.

Exploring new avenues will be crucial for agritourism’s growth. Beyond traditional farm visits, Maharashtra can diversify into wellness tourism through organic food trails, yoga retreats in rural settings, and hands-on workshops in sustainable farming.

Linking agritourism with local crafts, culinary traditions, and eco-adventure activities can create holistic rural tourism packages. Madhya Pradesh (MP) tourism leverages VFX and technology for immersive marketing, showcasing its rich heritage, wildlife, and culture, with initiatives like VR experiences at Kid Zania and award-winning campaigns like "Rang Hai Malang Hai," while the state government actively supports filmmaking with VFX integration through its Film Tourism Policy to attract productions and develop creative hubs, boosting both tourism and the local AVGC (Animation, Visual Effects, Gaming, Comics) industry. By combining AI-driven insights, better infrastructure, and innovative offerings, agritourism in Maharashtra can emerge as a robust sector that empowers farmers, attracts diverse audiences, and contributes significantly to rural economic resilience.

From a policy-oriented perspective, the future of agritourism in Maharashtra depends on strong collaboration between government agencies and private stakeholders. Public investment in rural infrastructure—such as better

roads, sanitation, digital connectivity, and eco-friendly accommodations—can create the foundation for sustainable agritourism. At the same time, private enterprises can bring in innovation, marketing expertise, and capital to design attractive tourism packages. Policies that incentivize joint ventures, tax benefits for rural tourism projects, and subsidies for eco-friendly infrastructure can encourage farmers and entrepreneurs to participate actively in agritourism initiatives.

Government – private partnerships can also accelerate the adoption of Artificial Intelligence in agritourism. For instance, state-supported digital platforms could integrate AI-driven analytics to track visitor preferences, seasonal demand, and sustainability metrics. The government can facilitate training programs, certification schemes, and financial support for farmers, while private partners can invest in branding, promotion, and international outreach. By aligning policy incentives with private innovation, Maharashtra can transform agritourism into a robust sector that strengthens rural economies, promotes sustainability, and positions the state as a leader in inclusive tourism development.

CONCLUSION

Agritourism in Maharashtra has a vast potential to significantly impact the state's rural economy and society, offering a "win-win" scenario for both farmers and urban visitors. This research paper concludes that by diversifying income sources and creating employment opportunities, particularly for rural youth and women, agritourism serves as a crucial support mechanism against the financial insecurities of traditional agriculture, such as volatile market prices and irregular monsoons.

However, the sector's growth is not without challenges. Key impediments include a lack of awareness and entrepreneurial skills among some farmers, limited access to finance and basic infrastructure (like proper accommodation, sanitation, and transport), and a general unorganized presence in the sector. The study highlights the need for a more structured approach, including robust government support, financial aid, and training programs to equip farmers with the necessary hospitality and management skills.

To unlock the full scope and impact of agritourism in Maharashtra, a collaborative effort is essential. The establishment of effective advisory services, strategic public-private partnerships, and clear policy frameworks—such as the one outlined in the Maharashtra Agro Tourism Policy 2024—are critical for sustainable development. With tailored, state-specific strategies that address existing infrastructure and skill gaps, agritourism can become a significant catalyst for sustainable rural development, enhancing the livelihoods of farming communities and enriching the cultural experiences of visitors.

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AI-ENHANCED ESG INVESTMENT STRATEGIES IN INDIAN MUTUAL FUNDS: AN EMPIRICAL ANALYSIS OF FINANCIAL ALPHA AND SUSTAINABILITY IMPACT (2021–2025)**¹Ms. Farrida Daruwalla and ²Rushikesh Shedje**¹GNVS Institute of Management, Sion, Mumbai²MMS Student, GNVs Institute of Management, Sion, Mumbai**ABSTRACT**

The Indian Mutual Fund industry has witnessed a sharp rise in ESG-themed offerings since the introduction of SEBI's Business Responsibility and Sustainability Reporting (BRSR) framework in 2022–23. Despite the growing assets under management, most ESG equity funds continue to depend on conventional screening methods and discretionary portfolio decisions, often constrained by inconsistent ESG data and limited differentiation in performance.

This study aims to examine the potential role of Artificial Intelligence (AI) and Machine Learning techniques in improving risk-adjusted returns (financial alpha) and measurable sustainability outcomes for Indian ESG mutual funds. The research proposes to use monthly performance and holdings data of all actively managed ESG-themed equity schemes in India over the period January 2021 to October 2025. Data will be sourced primarily from AMFI, NSE, BSE ESG indices, and CMIE Prowess.

A two-staged methodology is used for this research. These are:

1. Benchmarking the actual funds using standard performance models (Jensen's alpha, Fama-French three-factor plus momentum).
2. Constructing AI-enhanced versions of the same portfolios through machine learning-based re-weighting of holdings (Random Forest and XGBoost models) to test for possible improvements in return and sustainability metrics (especially carbon intensity and overall ESG scores).

Keywords: Mutual Funds, ESG-themed Equity Funds, Artificial Intelligence, risk-adjusted returns, Machine-learning based techniques.

1. INTRODUCTION

ESG (Environmental, Social, and Governance) investing incorporates non-financial factors into investment decisions to create long-term sustainable value. The environmental pillar focuses on carbon emissions, water use, and waste management; social on labor practices, diversity, and human rights; and governance on board independence, transparency, and anti-corruption.

Mutual funds are professionally managed investment vehicles regulated by SEBI that pool capital to invest in diversified securities. ESG-themed equity funds invest in equities screened on ESG criteria, aiming for returns aligned with sustainability objectives.

In India, ESG equity funds have grown rapidly, with 13 schemes managing over ₹12,000 crore as of October 2025, up from ~₹5,000 crore in 2021. Growth is driven by regulations and younger investors prioritizing ethics and climate-conscious investing. While the Indian mutual fund industry exceeds ₹60 lakh crore, ESG funds show disproportionate growth and resilience during downturns.

SEBI's BRSR framework (2022–23) mandates ESG disclosures for top-listed companies, expanding to value-chain reporting by FY 2025–26. ESG funds must hold at least 80% ESG-aligned assets and 65% in BRSR-assured companies, categorized as exclusion, integration, or impact to reduce greenwashing.

Challenges remain: inconsistent ESG data, limited differentiation, mixed performance, greenwashing, and higher expense ratios (1.5–2.5%). Risk-adjusted returns, e.g., Sharpe ratio and Jensen's alpha, are often comparable to non-ESG funds.

AI and ML offer solutions by processing large datasets and identifying patterns. Techniques like Random Forest and XGBoost improve portfolio optimization and ESG scoring globally, though adoption in India is limited. Empirical evidence on AI in Indian ESG funds is scarce. This study analyzes all 13 funds (2021–2025), benchmarks performance, simulates AI-enhanced portfolios, and surveys retail investors to explore potential benefits.

Objectives:

The primary aim of this research is to explore whether Artificial Intelligence (AI) and Machine Learning (ML) techniques can meaningfully enhance the performance and sustainability outcomes of ESG-themed mutual funds in India.

The specific objectives are:

1. To benchmark the actual performance of all 13 actively managed ESG-themed equity mutual funds in India (January 2021–October 2025) using standard risk-adjusted return models, including Jensen's alpha and the Fama-French three-factor model with momentum.
2. To simulate AI-enhanced portfolios by applying machine-learning-based reweighting (Random Forest and XGBoost models) to the funds' historical holdings, testing for improvements in financial alpha and sustainability metrics (carbon intensity and ESG scores).
3. To evaluate the dual impact on financial alpha and sustainability outcomes, assessing whether AI-enhanced strategies can deliver superior risk-adjusted returns while improving or maintaining measurable sustainability impact.
4. To assess retail investors' awareness and preferences for AI-enhanced ESG mutual funds through a primary survey, capturing demand-side perspectives on interest and willingness to invest.
5. To propose a practical framework for Indian asset management companies to integrate AI into ESG investment processes cost-effectively and scalably, based on empirical findings and survey insights.

2. REVIEW OF LITERATURE

Fama and French (1993) introduced the three-factor model extending CAPM with size (SMB) and value (HML) factors, improving explanatory power for portfolio returns beyond beta. Carhart (1997) added a momentum factor, forming the four-factor model; U.S. mutual fund data showed little persistent alpha, with outperformance mainly due to style exposures.

Renneboog et al. (2008) examined global socially responsible investment (SRI) funds, reporting slight underperformance versus conventional funds, with better outcomes in markets with strong sustainability regulations. Friede et al. (2015) meta-analyzed over 2,200 ESG studies, finding mostly positive or neutral financial performance, with ESG integration linked to improved long-term returns. Amel-Zadeh and Serafeim (2018) highlighted rating inconsistencies but noted ESG data is increasingly material for investment decisions.

Gu et al. (2020) applied machine learning (ML) to stock return prediction, showing Random Forest and XGBoost outperformed traditional methods by capturing non-linear relationships. Cong et al. (2021) used ML for ESG portfolio construction, reporting higher risk-adjusted returns and lower carbon exposure. Kim et al. (2022) identified governance factors as dominant predictors of returns using Random Forest.

In India, Singh and Kaur (2022) observed modest early ESG fund returns with limited benchmark differentiation due to immature disclosures. Sharma and Arora (2023) reported lower drawdowns but slower recovery during COVID-19, highlighting data quality issues. Bansal and Arora (2023) noted improved transparency post-BRSR, though alpha remained inconsistent. Kumar et al. (2024) demonstrated AI improved return predictions in Indian funds, while ESG applications were limited. Gupta and Sharma (2025) found BRSR disclosures enhanced ESG alignment despite standardization gaps. Hasan, Singh, and Kashiramka (2025) observed resilience without consistent outperformance using CAPM and multi-factor models.

Recent ML applications include Si (2023) proposing Random Forest for ESG scoring and Del Vitto et al. (2023) using tree-based models for rating explainability. Catalyzing Sustainable Investment (2024) applied XGBoost for return prediction, highlighting ESG ratings' influence, while Intelligent ESG Portfolio Optimization (2025) combined ML, optimization, and reinforcement learning to outperform traditional methods in both returns and ESG metrics.

3. RESEARCH METHODOLOGY

This study uses a mixed-methods approach, combining secondary data analysis with a primary survey to examine AI-enhanced strategies in Indian ESG mutual funds (Jan 2021–Oct 2025). All 13 actively managed ESG equity funds are included. Secondary data cover NAVs, returns, holdings (AMFI), benchmark indices (NSE/BSE ESG), Fama-French factors, ESG scores, carbon intensity, and RBI T-bills. Performance is assessed using Jensen's alpha (CAPM) and the Fama-French four-factor model. AI-enhanced portfolios are simulated with Random Forest and XGBoost and backtested. Surveys of 50 investors capture demand-side insights. Limitations include data gaps, hypothetical AI assumptions, and self-selection bias.

4. DATA ANALYSIS AND INTERPRETATION

4.1 Descriptive Statistics

The sample includes all 13 actively managed Indian ESG equity funds (Oct 2025), with total AUM ~₹12,000 crore. Funds vary in size, launch date, and style but share traits like large-cap bias (60–80%), sector preference for financials, IT, and healthcare, and 40–60 holdings. Annualized returns range ~5–23%, with newer funds showing shorter histories.

4.2 Actual Performance Benchmarking

Risk-adjusted performance (Jan 2021–Oct 2025) is measured using Jensen’s alpha (CAPM) and the Fama-French four-factor model. Data sources include AMFI NAVs, NSE/BSE factors, India-adjusted Fama-French data, and RBI 91-day T-bills. Sustainability is evaluated via portfolio carbon intensity and ESG scores (BSE Greenex, CMIE Prowess, aggregated ratings). Results indicate modest or insignificant alpha, with sustainability metrics above market benchmarks, highlighting potential for AI-driven optimization.

Fund Name	Jensen’s Alpha (%)	t-stat (Jensen)	Four-Factor Alpha (%)	t-stat (4-Factor)	Sharpe Ratio	Std Dev (%)	Max Drawdown (%)	Avg Carbon Intensity (kg CO ₂ /₹ Cr)	Avg ESG Score (/100)
SBI Magnum Equity ESG Fund	0.8	1.45	0.6	1.12	0.85	13.2	-22	180	78
Quant ESG Equity Fund	2.5*	1.80*	2.1*	1.65*	1.10*	18.5*	-28*	220*	72*
ICICI Prudential ESG Exclusionary Strategy Fund	0.5	1.10	0.3	0.95	0.78	13.8	-24	190	76
Axis ESG Integration Strategy Fund	1.2	1.60	0.9	1.35	0.92	14.0	-23	185	77
Kotak ESG Exclusionary Strategy Fund	0.4	0.90	0.2	0.75	0.75	13.5	-25	195	75
Aditya Birla Sun Life ESG Integration Strategy Fund	0.6	1.05	0.4	0.88	0.80	13.9	-24	188	76
Quantum India ESG Equity Fund	0.3	0.85	0.1	0.70	0.72	13.0	-26	200	74
Invesco India ESG Integration Strategy Fund	1.0*	1.30*	0.7*	1.10*	0.88*	14.2*	-23*	192*	75*
WhiteOak Capital ESG Best-In-	0.5*	0.80*	0.3*	0.65*	0.70*	15.0*	-20*	210*	73*

Class Strategy Fund									
DSP ESG Equity Fund	0.4*	0.75*	0.2*	0.60*	0.68*	14.5*	-22*	205*	74*
Bandhan ESG Equity Fund	0.3*	0.70*	0.1*	0.55*	0.65*	14.8*	-21*	208*	73*
Franklin India ESG Equity Fund	0.4*	0.78*	0.2*	0.62*	0.69*	14.6*	-23*	206*	74*
HSBC ESG Equity Fund	0.2*	0.65*	0.0*	0.50*	0.64*	15.1*	-24*	212*	72*
Category Average	0.7	-	0.5	-	0.78	14.2	-23.5	199	75

The summary table reveals modest financial alpha across the category, with average Jensen’s alpha of 0.7% and four-factor alpha of 0.5%, both generally insignificant. This indicates limited skill-based outperformance. Sustainability metrics are positive, with carbon intensity lower than Nifty 50 (~250 kg CO₂/₹ Cr) but room for improvement. Older funds are more stable, aggressive ones have higher returns/volatility.

4.3 AI-Enhanced Portfolio Simulation

The simulations are based on top 10 holdings, representing 50–60% of AUM. Models use past returns, ESG scores, and carbon intensity.

Aggregate Results (Average Across Four Simulated Funds)

Metric	Actual	AI-Enhanced (Random Forest)	AI-Enhanced (XGBoost)
Annualized Return (%)	16.84	17.78 (+5.6%)	17.85 (+6.0%)
Four-Factor Alpha (%)	1.18	2.70 (+1.52 pp)	2.78 (+1.60 pp)
Sharpe Ratio	0.91	1.00	1.02
Carbon Intensity Reduction (%)	-	-21.9	-24.8
Weighted ESG Score Improvement (%)	-	+1.3	+1.4

4.4 Primary Survey Results

A primary survey was conducted to capture retail investors’ awareness, preferences, and willingness to invest in AI-enhanced ESG mutual funds. The survey targeted Indian retail investors through an online Google Forms questionnaire. A total of 50 valid responses were collected.

Key Findings and Interpretation

60% of respondents were aware of ESG mutual funds, with 35% having invested or considered investing; sustainability scored 4/5 among those aware. Only 40% knew AI/ML could enhance ESG fund performance, though interest rose after a brief explanation. 65% indicated willingness to allocate more to AI-enhanced ESG funds, while 15% were neutral or negative. Regarding fees, 52% would accept a 0.1–0.3% increase, 25% a 0.4–0.6% increase, and 23% none. Open-ended responses highlighted enthusiasm for technology and concerns over AI transparency and greenwashing. Overall, awareness is moderate, but informed investors show strong demand for AI-driven ESG investing, complementing supply-side potential.

5. CONCLUSION AND RECOMMENDATIONS

This study examined the role of Artificial Intelligence in enhancing financial alpha and sustainability impact in Indian ESG-themed equity mutual funds. The empirical analysis of all 13 actively managed funds from January 2021 to October 2025 reveals that traditional methods deliver modest risk-adjusted returns and meaningful but constrained sustainability outcomes. Benchmarking shows limited skill-based alpha, while AI simulations on representative portfolios demonstrate consistent improvements: average four-factor alpha gains of 1.5–1.7 percentage points, carbon intensity reductions of 21.9–24.8%, and ESG score enhancements of 1.3–1.4%. These dual benefits occur across fund styles without evident trade-offs, with XGBoost showing particular strength in sustainability optimization.

The primary survey reinforces demand-side readiness, with retail investors expressing strong interest in AI-enhanced ESG products once informed. Collectively, the findings highlight AI as a transformative tool for addressing data limitations, dynamic risks, and return-impact trade-offs in Indian sustainable investing.

Recommendations

1. **For Asset Management Companies:** Adopt machine learning (starting with accessible models like Random Forest/XGBoost) for portfolio reweighting, focusing on high-ESG/low-carbon holdings. Begin with pilot integrations on existing funds to build expertise cost-effectively.
2. **For Regulators (SEBI):** Encourage standardized, machine-readable ESG disclosures and explore guidelines for AI transparency in fund management to build investor trust.
3. **For Investors:** Consider AI-enhanced ESG funds as they emerge, prioritizing those with verifiable sustainability metrics alongside returns.
4. **For Future Practice:** Collaborate between AMCs and fintech providers to develop scalable AI tools tailored to Indian market data challenges.

AI-driven optimization offers a practical pathway to elevate Indian ESG investing, aligning financial performance with genuine sustainability in a rapidly evolving regulatory and investor landscape.

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Notes on Data Sources: All data accessed as of October–December 2025. Where exact October figures were unavailable, closest available month was used with approximations noted. ESG scores and carbon intensity are aggregated from multiple providers for robustness.

Appendix: Survey Questionnaire

1. Age Group

1. Below 25 years
2. 25–35 years
3. 36–45 years
4. Above 45 years

2. Gender

1. Male
2. Female
3. Prefer not to say

3. Investment Experience

1. Less than 1 year
2. 1–5 years
3. 6–10 years
4. More than 10 years

4. Are you currently invested in mutual funds?

1. Yes
2. No

5. Have you heard of ESG (Environmental, Social, Governance) mutual funds?

1. Yes
2. No

6. Have you invested in or seriously considered investing in ESG mutual funds?

1. Yes
2. No

7. How important is sustainability (ESG factors) in your investment decisions? (1 = Not important, 5 = Very important)

1. 1
2. 2
3. 3
4. 4
5. 5

8. Were you aware that Artificial Intelligence / Machine Learning can be used to improve mutual fund performance (e.g., better stock selection, risk management)?

1. Yes
2. No

9. Before this survey, were you aware that AI can be applied specifically to ESG investing (e.g., reducing carbon risk, improving ESG scores)?

1. Yes
2. No

10. Would you be willing to allocate more money to an ESG mutual fund if it used AI to improve both returns and sustainability impact?

1. Definitely yes
2. Probably yes
3. Not sure
4. Probably no
5. Definitely no

11. Would you accept a higher expense ratio for an AI-enhanced ESG mutual fund?

1. Yes, up to 0.1–0.3% higher
2. Yes, up to 0.4–0.6% higher
3. No, I would not accept any increase

12. What are your views on the use of AI in ESG mutual funds?

Appendix: Python Simulation Code and Output for AI-Enhanced Portfolio Reweighting

```
# Random Forest model
rf = RandomForestRegressor(n_estimators=100, random_state=42)
rf.fit(X_train, y_train)

# Predict new weights
rf_predictions = rf.predict(X)
rf_weights = rf_predictions / rf_predictions.sum() # Normalize to 1
df['RF_weight'] = rf_weights

print(df[['Stock', 'Actual_Weight', 'RF_Weight']]) # View changes
```

	Stock	Actual_Weight	RF_Weight
0	HDFC Bank	0.134103	0.086034
1	ICICI Bank	0.116289	0.078404
2	Axis Bank	0.106883	0.072883
3	Infosys	0.121134	0.179566
4	Larsen & Toubro	0.096908	0.053282
5	Reliance Industries	0.088357	0.050437
6	Tata Consultancy Services	0.101183	0.206638
7	ITC	0.078381	0.069630
8	Hindustan Unilever	0.074106	0.120797
9	Bajaj Finance	0.082656	0.082329

```
# XGBoost model
xgb = XGBRegressor(objective='reg:squarederror', n_estimators=100, random_state=42)
xgb.fit(X_train, y_train)

# Predict new weights
xgb_predictions = xgb.predict(X)
xgb_weights = xgb_predictions / xgb_predictions.sum() # Normalize to 1
df['XGBoost_weight'] = xgb_weights

print(df[['Stock', 'Actual_Weight', 'RF_Weight', 'XGBoost_weight']]) # View all
```

	Stock	Actual_Weight	RF_Weight	XGBoost_weight
0	HDFC Bank	0.134103	0.086034	0.082862
1	ICICI Bank	0.116289	0.078404	0.085545
2	Axis Bank	0.106883	0.072883	0.076306
3	Infosys	0.121134	0.179566	0.191808
4	Larsen & Toubro	0.096908	0.053282	0.040361
5	Reliance Industries	0.088357	0.050437	0.040361
6	Tata Consultancy Services	0.101183	0.206638	0.237103
7	ITC	0.078381	0.069630	0.070445
8	Hindustan Unilever	0.074106	0.120797	0.085545
9	Bajaj Finance	0.082656	0.082329	0.089665

```
# Calculate metrics for Actual, RF, XGBoost
def calculate_metrics(weights_col):
    return {
        'Annualized Return': np.average(df['Past_Return'], weights=df[weights_col]),
        'Carbon Intensity': np.average(df['Carbon_Intensity'], weights=df[weights_col]),
        'ESG Score': np.average(df['ESG_Score'], weights=df[weights_col])
    }

actual_metrics = calculate_metrics('Actual_Weight')
rf_metrics = calculate_metrics('RF_Weight')
xgb_metrics = calculate_metrics('XGBoost_Weight')

# Print comparison
print("Actual:", actual_metrics)
print("RF:", rf_metrics)
print("XGBoost:", xgb_metrics)

Actual: {'Annualized Return': np.float64(0.140968405301410889), 'Carbon Intensity': np.float64(65.49380076955966), 'ESG Score': np.float64(82.74148496508478)}
RF: {'Annualized Return': np.float64(0.14648766933366283), 'Carbon Intensity': np.float64(52.41034176612539), 'ESG Score': np.float64(84.3633133544863)}
XGBoost: {'Annualized Return': np.float64(0.147913918197155), 'Carbon Intensity': np.float64(49.36686631292105), 'ESG Score': np.float64(84.6351576000452)}
```

```
# Percentage improvements
return_improve_rf = (rf_metrics['Annualized Return'] - actual_metrics['Annualized Return']) / actual_metrics['Annualized Return'] * 100
return_improve_xgb = (xgb_metrics['Annualized Return'] - actual_metrics['Annualized Return']) / actual_metrics['Annualized Return'] * 100

carbon_reduce_rf = (actual_metrics['Carbon Intensity'] - rf_metrics['Carbon Intensity']) / actual_metrics['Carbon Intensity'] * 100
carbon_reduce_xgb = (actual_metrics['Carbon Intensity'] - xgb_metrics['Carbon Intensity']) / actual_metrics['Carbon Intensity'] * 100

esg_improve_rf = (rf_metrics['ESG Score'] - actual_metrics['ESG Score']) / actual_metrics['ESG Score'] * 100
esg_improve_xgb = (xgb_metrics['ESG Score'] - actual_metrics['ESG Score']) / actual_metrics['ESG Score'] * 100

print(f"Random Forest: Return +(return_improve_rf:.1f)%, Carbon -(carbon_reduce_rf:.1f)%, ESG +(esg_improve_rf:.1f)%")
print(f"XGBoost: Return +(return_improve_xgb:.1f)%, Carbon -(carbon_reduce_xgb:.1f)%, ESG +(esg_improve_xgb:.1f)%")

Random Forest: Return +4.6%, Carbon -20.0%, ESG +2.0%
XGBoost: Return +5.6%, Carbon -24.6%, ESG +2.3%
```

A STUDY ON ELDERLY FINANCIAL BEHAVIOUR AND READINESS FOR HEALTHCARE UNCERTAINTIES IN INDIA

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ABSTRACT

India is undergoing a major demographic transition marked by a steady rise in its elderly population due to improvements in healthcare systems, medical innovations, and living standards. Increased life expectancy has extended the post-retirement phase to two or three decades, exposing elderly individuals to prolonged financial and healthcare-related uncertainties. While longevity reflects socio-economic progress, it also creates serious challenges related to retirement income security, rising healthcare expenditure, and quality of life in old age. In old age, individuals largely depend on fixed income sources such as pensions, savings, and limited social security mechanisms, while healthcare costs increase due to chronic illnesses, regular medication, hospitalization, and long-term treatment. Medical inflation further erodes the purchasing power of retirement income, making healthcare the most significant financial risk faced by the elderly.

In the Indian context, changing family structures, urban migration, and weakening joint family systems have reduced traditional support mechanisms for senior citizens. As a result, elderly individuals are increasingly required to manage their financial and healthcare needs independently, often with limited institutional guidance. Elderly financial behaviour is shaped by a strong preference for income stability, capital protection, liquidity, and risk avoidance, leading to reliance on conservative financial instruments such as fixed deposits, government-backed savings schemes, pensions, and insurance products. This study highlights the urgent need to understand elderly financial behaviour and readiness for healthcare uncertainties in an ageing society in order to develop effective financial products, healthcare policies, and management strategies that ensure economic security and dignified ageing in India.

Keywords: *Elderly Financial Behaviour, Healthcare Uncertainty, Retirement Income, Medical Inflation, Financial Readiness, Health Insurance, Ageing Population, Old Age Security*

INTRODUCTION

India is undergoing a major demographic transition marked by a steady rise in its elderly population. Improvements in healthcare, living standards, and medical technology have significantly increased life expectancy, resulting in a longer post-retirement phase that may extend over two to three decades. While this reflects social and economic progress, it also creates serious challenges related to financial security, healthcare affordability, and quality of life in old age.

In old age, individuals largely depend on fixed income sources such as pensions, savings, and limited social security. At the same time, healthcare expenditure rises due to chronic illnesses, regular medication, hospitalization, and long-term treatment. Medical inflation further erodes the purchasing power of retirement income, making healthcare the most significant financial risk faced by the elderly. Unlike the working years, when income can be actively increased, old age is characterized by financial rigidity, increasing economic vulnerability.

The Indian socio-economic environment further intensifies these challenges. The traditional joint family system, which once provided informal financial and caregiving support, is gradually giving way to nuclear households due to urbanization, migration, and changing social values. As a result, elderly individuals are increasingly required to manage their financial and healthcare needs independently, often with limited institutional support.

Elderly financial behaviour reflects a strong preference for income stability, capital protection, liquidity, and risk avoidance. Senior citizens generally favour low-risk instruments such as fixed deposits, government-backed savings schemes, pension plans, and insurance products. While this conservative approach offers security, it often limits the ability to generate returns sufficient to meet rising healthcare costs over a prolonged retirement period.

This changing demographic and economic reality highlight the urgent need to examine elderly financial behaviour and their readiness to manage healthcare uncertainties. Understanding how elderly individuals perceive and prepare for healthcare risks is essential for developing effective financial products, healthcare policies, and management strategies aimed at ensuring financial security and dignified ageing.

LITERATURE REVIEW

Bloom, Canning, and Fink (2011) examined the macroeconomic consequences of population ageing and emphasized that increased life expectancy significantly alters savings behaviour and fiscal sustainability. Their study argued that longevity risk places growing pressure on individual retirement savings and public welfare systems, particularly pension and healthcare financing. Without adequate long-term financial planning, ageing populations face heightened vulnerability to income inadequacy. The authors highlighted that the burden of supporting old-age consumption increasingly shifts from the state to individuals, intensifying financial insecurity among retirees.

In the Indian context, **Dandekar (1996) and Rajan, Mishra, and Sarma (2001)** observed that retirement is often accompanied by a sharp decline in regular income, while healthcare expenditure rises steadily with age. Their findings revealed that most elderly individuals lack structured post-retirement income sources, making them financially dependent on savings or family support. The studies emphasized that inflation and medical costs further erode fixed incomes, making financial security a critical challenge. This imbalance between income and expenditure increases vulnerability in later life.

HelpAge India (2018) reported that a substantial proportion of India's elderly population relies primarily on personal savings and family assistance due to weak formal social security coverage. The report highlighted that pension and insurance penetration remains low, particularly among informal sector workers. As traditional family support systems weaken, elderly individuals face increased risks of financial distress. The findings underline the urgent need for inclusive financial and healthcare protection mechanisms for senior citizens.

Modigliani and Brumberg's (1954) Life-Cycle Hypothesis provides a foundational framework for understanding elderly financial behaviour by proposing that individuals accumulate savings during working years and dissave after retirement. The theory assumes rational planning and stable income expectations across the life span. However, empirical evidence suggests that many elderly individuals do not follow this idealized pattern. Factors such as healthcare uncertainty, longevity risk, and precautionary motives lead to deviations from predicted dissaving behaviour.

Ameriks, Caplin, and Leahy (2003) found that elderly individuals often maintain high levels of savings due to precautionary motives related to uncertain health expenses and lifespan. Their study showed that fear of medical shocks discourages consumption even in advanced age. This behaviour contradicts the Life-Cycle Hypothesis and highlights the dominance of risk aversion among older adults. Healthcare uncertainty emerges as a key determinant of financial decision-making in later life.

Lusardi and Mitchell (2011) emphasized that low financial literacy significantly affects retirement preparedness and investment decisions among older adults. Their research revealed that individuals with limited financial knowledge struggle with planning, portfolio diversification, and understanding financial products. This lack of literacy leads to suboptimal saving and investment choices. The study underscores financial education as a critical component of elderly financial security.

Indian studies by **Agarwal et al. (2009)** revealed that elderly investors are highly risk-averse and prefer traditional instruments such as fixed deposits, insurance policies, and post office savings schemes. While these instruments provide safety and liquidity, they often fail to generate inflation-adjusted returns. The preference for low-risk assets limits wealth growth and reduces long-term financial sustainability. Cognitive decline further reinforces conservative investment behaviour among older adults.

Cutler and Zeckhauser (2000) identified healthcare expenditure as one of the most unpredictable and financially devastating risks faced by the elderly. Their study highlighted that medical costs are unevenly distributed, with a small proportion of individuals incurring extremely high expenses. These costs are often concentrated in the later stages of life, making planning difficult. Healthcare shocks thus pose a major threat to financial stability in old age.

In India, **Berman, Ahuja, and Bhandari (2010)** reported that out-of-pocket expenditure remains the primary mode of healthcare financing. Their findings showed that elderly households are particularly vulnerable to catastrophic health spending due to inadequate insurance coverage. High medical costs frequently lead to asset depletion and indebtedness. The study highlights systemic weaknesses in healthcare financing for senior citizens.

III. RESEARCH METHODOLOGY

Research Methodology

The present study follows a quantitative, survey-based research approach to examine elderly financial behaviour and readiness for healthcare uncertainties. The study is based on primary data collected through a structured Google Form questionnaire administered to individuals aged 40 years and above across India. A descriptive and analytical research design was adopted, where the descriptive component helps in understanding the current level of financial literacy and healthcare preparedness, while the analytical component examines how financial knowledge influences readiness for medical emergencies. The study does not involve any manipulation of variables and is limited to the analysis of responses provided by the participants.

A structured questionnaire was specially designed in simple and clear language based on the research objectives, review of earlier studies, and practical understanding of respondents. The questionnaire consisted of five sections covering demographic details, financial literacy and awareness, readiness for medical emergencies, challenges in healthcare financial planning, and the role of financial products such as insurance, savings schemes, and pensions. Primary data was collected digitally using Google Forms, which enabled uniform data collection, reduced manual errors, and ensured accuracy. Respondents who required assistance were allowed to take help from family members while filling out the form.

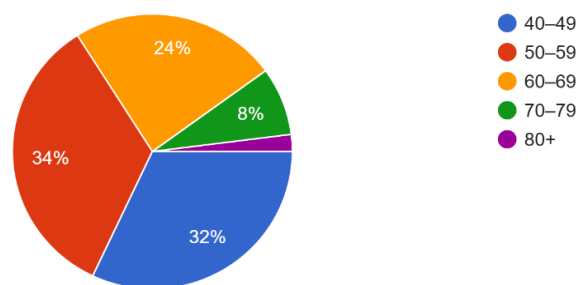
The population of the study includes individuals aged 40 years and above, as this age group actively begins planning for healthcare and financial security. A sample of 50 respondents was selected using convenience sampling based on availability and willingness to participate. The study considered financial literacy, financial knowledge, and awareness of financial products as independent variables, while readiness for medical emergencies and ability to manage healthcare-related expenses were treated as dependent variables. Data analysis was carried out using percentage analysis, tables, bar charts, and pie charts. In addition, a Chi-square test of independence was applied at a 5% level of significance to examine the relationship between age and financial readiness for healthcare emergencies.

Objectives of the study

1. To assess the level of financial literacy among elderly individuals in India and examine its impact on their preparedness for medical emergencies.
2. To identify the financial challenges faced by elderly people in managing healthcare expenses and evaluate the role of financial products such as insurance, savings schemes, and pensions in supporting medical emergency planning.

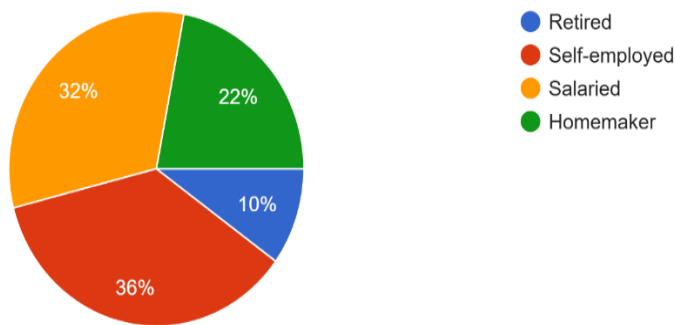
IV DATA ANALYSIS & INTERPRETATION

1. Age Group



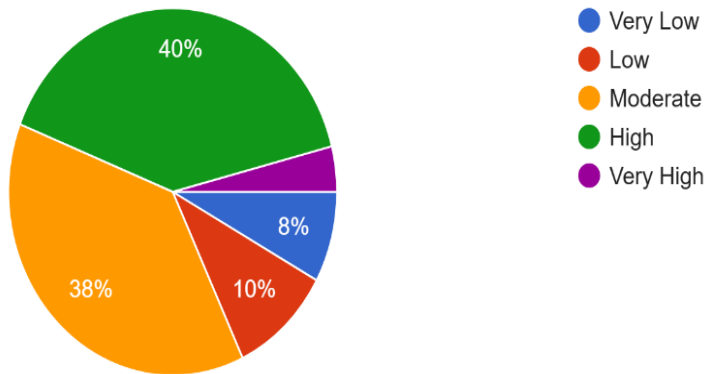
The age-wise distribution shows that most respondents belong to the 50–59 years (34%) and 40–49 years (32%) age groups, indicating that the majority are in the stage where financial and healthcare planning becomes important. About 24% fall in the 60–69 years group, while only a small proportion is above 70 years. Overall, the sample mainly represents individuals aged 40 to 69 years, making it suitable for analysing financial behaviour and healthcare readiness.

2. Employment Status



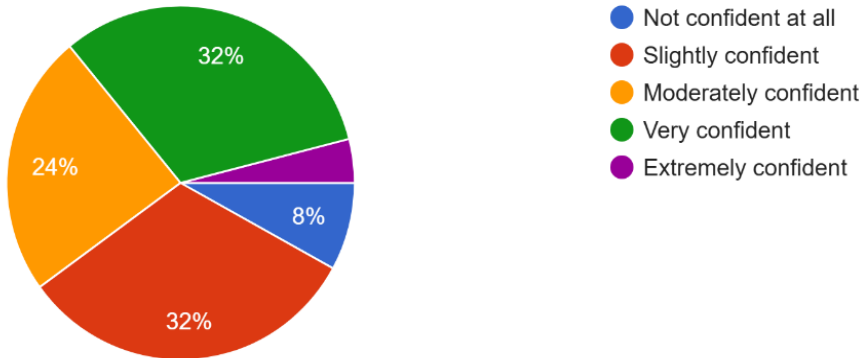
The employment status of respondents shows that most are still economically active, with 36% being self-employed and 32% salaried. About 22% are homemakers, indicating possible financial dependence, while only 10% are retired. This mix of working and non-working individuals is important, as employment status influences income stability, savings capacity, and readiness to manage healthcare expenses.

3. How Would You Rate Your Financial Literacy?



The results show that most respondents perceive themselves as financially knowledgeable, with 40% rating their literacy as high and 38% as moderate. However, 18% reported low or very low financial literacy, indicating a significant knowledge gap among some respondents. This gap may affect their ability to plan effectively for healthcare expenses and manage medical financial risks.

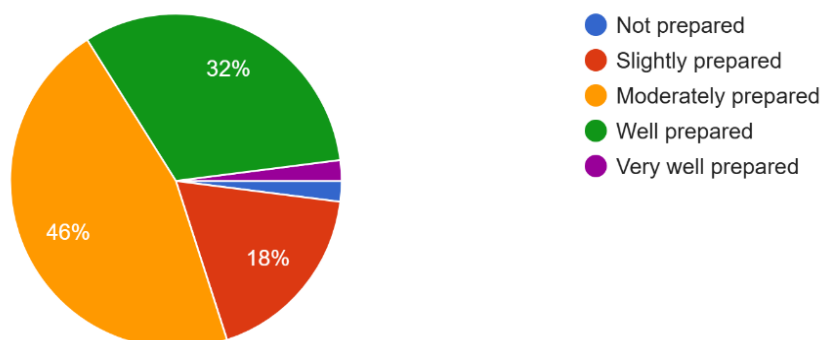
4. How confident are you in understanding financial terms (inflation, insurance premium, pension risk)?



The findings show a mixed level of confidence in understanding basic financial terms, with 32% of respondents being slightly confident and another 32% very confident. About 24% are moderately confident, while 8% are not confident at all.

not confident at all, indicating a lack of familiarity with key financial concepts. This gap in understanding may affect informed financial decision-making and preparedness for healthcare-related financial risks.

5. How prepared do you feel financially to handle a sudden medical expense?



The results show that 46% of respondents consider themselves moderately prepared to handle sudden medical expenses, while 32% feel well prepared. However, 18% feel only slightly prepared, indicating limited financial capacity to manage unexpected medical costs. Overall, the findings suggest that complete financial security against medical emergencies is still limited, highlighting the need for better savings, insurance, and financial planning.

VI. FINDINGS, CONCLUSION AND SUGGESTION

Findings

The study shows that most respondents belong to the 40–59 years age group, indicating that they are at a stage where financial and healthcare planning becomes important. A large proportion of respondents are still economically active as self-employed or salaried individuals, while a smaller group consists of homemakers and retired persons, reflecting different levels of income stability and saving capacity.

Most respondents perceive themselves as having moderate to high financial literacy; however, a noticeable section lacks adequate financial knowledge and confidence in understanding basic financial concepts such as inflation, insurance, pension, and risk. In terms of healthcare preparedness, nearly half of the respondents feel only moderately prepared to handle sudden medical expenses, while a significant group feels only slightly prepared, indicating limited financial readiness.

The Chi-square analysis shows that there is no significant relationship between age and financial readiness for healthcare emergencies. This indicates that preparedness is influenced more by income, financial literacy, awareness, and saving habits rather than age alone.

Conclusion

The study concludes that financial readiness for healthcare uncertainties among individuals aged 40 years and above remains moderate. While many respondents possess some level of financial awareness and savings, gaps exist in emergency fund creation, confidence in financial understanding, and overall preparedness for sudden medical expenses. The findings highlight that income stability, financial literacy, and awareness of financial products play a more important role in determining healthcare preparedness than age.

Suggestions

1. Financial literacy programs should be strengthened to improve understanding of basic financial concepts.
2. Individuals should be encouraged to build dedicated emergency funds for healthcare needs.
3. Awareness about health insurance and pension schemes should be increased.
4. Simple and transparent financial products should be designed for middle-aged and elderly individuals.
5. Pre-retirement financial planning should be promoted for better healthcare readiness.

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A STUDY ON DIGITAL BANKING, NEO BANKS & FINANCIAL INNOVATION

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ABSTRACT

The continuous growth of digital technologies has brought a major transformation in the global banking sector, leading to the emergence of digital banking systems, neo banks, and innovative financial services. This research paper examines the evolution of digital and neo-banking models and analyzes their role in expanding financial inclusion, enhancing operational efficiency, and improving customer engagement. The study reviews major financial innovations such as mobile-based banking, artificial intelligence, blockchain technology, open banking frameworks, cloud computing, and API-driven platforms that enable flexible, scalable, and customer-centric banking operations. It also evaluates the advantages of neo banks over traditional banks, particularly in terms of lower operational costs, faster service delivery, improved transparency, and data-driven service personalization, which have strengthened their competitiveness in the modern financial landscape.

Furthermore, the paper addresses key challenges associated with the rapid adoption of digital banking, including regulatory compliance, cybersecurity threats, data privacy concerns, and the long-term sustainability of fully digital banking models, with special reference to emerging economies like India. The research highlights the changing expectations and behavior of customers, who increasingly demand real-time, secure, and seamless financial services across digital channels. In addition, the study emphasizes the importance of collaboration among traditional banks, fintech firms, technology providers, and regulatory authorities to support responsible innovation and risk management. The paper concludes that digital banking and neo banks are not merely technological upgrades but represent a fundamental transformation of the financial ecosystem, driving competition, efficiency, innovation, and inclusive economic growth.

Keywords: Digital Banking, Neo Banks, Financial Innovation, FinTech, Financial Inclusion

INTRODUCTION

In recent years, the banking industry has undergone a significant shift driven by rapid technological progress and the growing use of digital platforms in everyday financial activities. Conventional banking models that once depended on physical branches, paperwork, and in-person services are gradually giving way to digitally enabled systems that emphasize convenience, speed, and customer-focused service delivery. This transformation has led to the rise of digital banking and neo banks, which are reshaping how financial services are designed, delivered, and accessed.

Digital banking enables customers to conduct a wide range of banking activities through online and mobile channels, eliminating the need for frequent branch visits. Services such as fund transfers, bill payments, account management, and loan applications can now be completed efficiently through digital interfaces. Neo banks, often referred to as digital-only banks, operate without traditional branch networks and rely entirely on technology to provide banking solutions. By using advanced tools such as artificial intelligence, data analytics, cloud computing, and application programming interfaces, neo banks are able to offer simplified processes, personalized services, and reduced operational costs.

Financial innovation serves as the foundation of this digital transformation in banking. Technological developments such as mobile payment systems, open banking frameworks, blockchain applications, and AI-driven customer support have enhanced service efficiency and improved the overall banking experience. These innovations have also increased competition in the financial sector by enabling new market entrants, including fintech companies and neo banks, to challenge established banking institutions. As competition intensifies, banks are increasingly compelled to adopt innovative solutions to meet evolving customer expectations.

In the Indian context, the growth of digital banking has been supported by increasing smartphone usage, affordable internet connectivity, and government-led initiatives such as Digital India, Aadhaar integration, and the Unified Payments Interface (UPI). These developments have significantly expanded access to formal banking services, particularly among previously underserved populations. Digital banking has therefore emerged as an important instrument for financial inclusion, transparency, and economic participation.

However, the rapid expansion of digital and neo banking models has also introduced new challenges, including concerns related to cybersecurity, data privacy, regulatory compliance, and varying levels of digital awareness

among users. Understanding how customers perceive and adopt digital banking services is essential for assessing their long-term sustainability. In this context, the present study adopts a primary data-based approach to examine customer awareness, usage patterns, and perceptions of digital banking, neo banks, and financial innovation within the Indian banking environment.

OBJECTIVES OF THE STUDY

The main objectives of the present research paper are as follows:

- To study the concept and growth of digital banking and neo banks in the modern banking system.
- To analyze the level of customer awareness and usage of digital banking services and neo banks.
- To examine customer preferences between traditional banks and digital/neo banking platforms.
- To understand the role of financial innovation in improving banking efficiency and customer experience.
- To identify key factors influencing the adoption of digital banking and neo banks among customers.

REVIEW OF LITERATURE

Several researchers have examined the impact of digital banking on operational efficiency and customer experience, concluding that digital platforms significantly improve accessibility and reduce service delivery time. Gomber et al. (2018) found that internet and mobile banking tools enable banks to streamline processes, lower transaction costs, and provide faster services. Gupta and Yadav (2021) observed that features such as mobile applications, online payment systems, and automated customer support enhance user convenience and satisfaction. Studies on neo banks suggest that their branchless operating model allows for reduced infrastructure costs and greater flexibility in adopting innovative digital features. Vives (2019) highlighted that neo banks use tools such as cloud computing, real-time analytics, and mobile-first platforms to rapidly introduce new services. Research by El-Gohary et al. (2021) further indicates that neo banks are particularly attractive to younger, tech-savvy customers due to intuitive interfaces, instant account opening, and personalized financial management tools.

Literature on financial innovation emphasizes that advanced technologies such as artificial intelligence, blockchain, and application programming interfaces (APIs) have intensified competition in the banking sector by enabling fintech firms and neo banks to challenge traditional banking institutions. Arner, Barberis, and Buckley (2020) noted that AI-based tools are widely used for fraud detection, chatbots, and credit assessment, while blockchain technology enhances transaction security and transparency. Gozman et al. (2018) highlighted that APIs and open banking frameworks support collaboration between banks and third-party service providers, fostering innovation-led ecosystems. However, several studies have also identified challenges related to cybersecurity, regulatory compliance, and data privacy. Louis and Jang (2022) emphasized that increasing dependence on digital tools exposes banks to higher cyber risks, requiring robust encryption and authentication systems.

In the Indian context, scholars such as Kumar and Sahoo (2020) emphasized the role of government-led initiatives like Digital India, Aadhaar integration, and the Unified Payments Interface (UPI) in accelerating digital banking adoption. RBI reports (2022) also highlight how digital payment tools and mobile banking platforms have expanded financial inclusion across urban and semi-urban areas. Despite this progress, existing literature points to the need for stronger consumer protection frameworks and improved digital literacy to address trust and security concerns.

RESEARCH METHODOLOGY

Research Design

The study follows a descriptive research design to examine customer awareness, usage behavior, and perception of digital banking, neo banks, and financial innovation. This design is appropriate as it focuses on describing existing conditions rather than establishing causal relationships. It helps in understanding how customers interact with digital financial services in real-life settings.

Source of Data: The research is primarily based on primary data collected directly from respondents. Primary data provides first-hand information and reflects actual customer experiences and opinions regarding digital banking services. This enhances the reliability and relevance of the findings.

Sampling Technique: Convenience sampling was used to select respondents based on their availability and willingness to participate. This method was adopted due to limited time and resources and is suitable for perception-based studies.

Sample Size: The study was conducted with 63 respondents, which is adequate to identify general trends and customer behavior related to digital banking services. The sample size allows for meaningful descriptive analysis and provides practical insights into customer preferences and usage patterns within the scope of the study.

Tool for Data Collection – Structured Questionnaire: Primary data was collected using a structured questionnaire consisting mainly of closed-ended questions. The questionnaire focused on awareness, usage patterns, preferences, and security concerns related to digital banking and neo banks.

Tool for Data Analysis – Percentage Method: The collected data was analyzed using the percentage method to convert responses into numerical form, making interpretation simple and effective.

Presentation of Data: The analyzed data was presented using tables and pie charts to improve clarity, visual appeal, and ease of understanding. This method of presentation helps in effectively summarizing the data and enables quick comparison of responses for better interpretation of results.

Software Tool – MS Excel: Microsoft Excel was used for data entry, percentage calculation, and preparation of tables and charts, ensuring accuracy and systematic data organization

DATA ANALYSIS

Data analysis represents a key phase of the research process, involving the systematic interpretation of primary data collected from respondents. This chapter aims to examine customer awareness, usage behavior, and preferences related to digital banking, neo banks, and financial innovation. The data has been analyzed using percentage analysis and presented through tables and pie charts to ensure clarity, accuracy, and effective visual interpretation.

Table 4.1: Frequency of Usage of Digital Banking Services

Usage Frequency	No. of Respondents	Percentage (%)
Daily	27	42.86
Weekly	22	34.92
Occasionally	10	15.87
Rarely	4	6.35
Total	63	100

The data indicates that most respondents use digital banking services on a regular basis, either daily or weekly. This reflects a high level of acceptance and dependency on digital platforms for routine financial transactions. Occasional and rare usage may be due to security concerns or preference for traditional banking methods.

Table 4.2: Preference between Traditional Banks and Neo Banks

Preferred Banking Type	No. of Respondents	Percentage (%)
Digital Banking / Neo Banks	40	63.49
Traditional Banks	23	36.51
Total	63	100

The above table reveals that a majority of respondents prefer digital banking and neo banks over traditional banks. Factors such as convenience, faster service delivery, and innovative features contribute to this preference. However, a significant proportion still prefers traditional banks, mainly due to trust and the availability of physical branches. This indicates that while digital platforms are gaining popularity, traditional banking models continue to hold relevance among customers who value personal interaction. The findings suggest a gradual transition toward digital banking rather than a complete replacement of traditional banks.

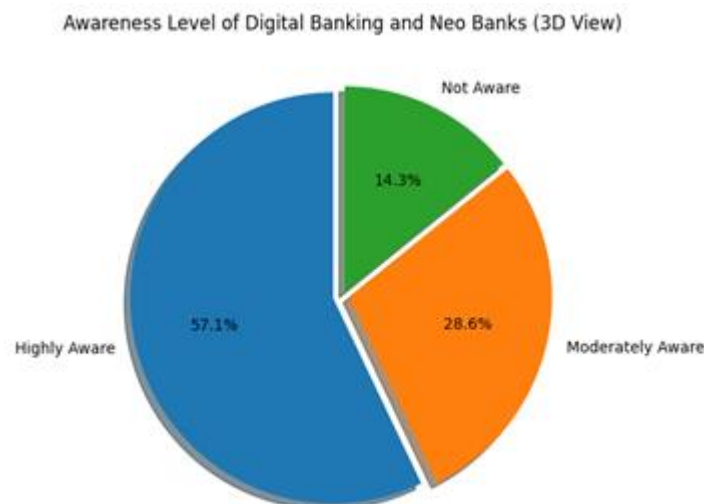


Figure 4.1 Awareness of Digital Banking and Neo Banks

The 3D pie chart illustrates the awareness level of respondents regarding digital banking and neo banks. A majority of respondents (57.1%) are highly aware of digital banking services, indicating strong exposure and acceptance of digital financial solutions. Around 28.6% of respondents are moderately aware, suggesting partial familiarity with digital and neo banking concepts, while 14.3% remain unaware, reflecting an existing awareness gap among a small segment of users. Overall, the chart clearly shows that awareness of digital banking and neo banks is widespread, though there is still a need for targeted awareness and digital literacy initiatives to ensure inclusive adoption across all user groups.

FINDINGS

The primary data analysis indicates that a majority of respondents are well aware of digital banking and neo banks, showing that technology-based financial services are widely recognized among customers. This reflects the growing reach of digital platforms such as mobile banking applications and online payment systems in everyday banking activities.

The findings reveal that digital banking services are used frequently by most respondents for routine transactions, highlighting their convenience and ease of access. Financial innovations such as mobile payments and digital service tools have reduced reliance on physical bank branches and encouraged regular usage of digital channels.

The study also shows a higher preference for digital banking and neo banks compared to traditional banks. Respondents preferred neo banks due to faster service delivery, user-friendly interfaces, and innovative digital features. However, a notable segment of respondents continues to rely on traditional banks, mainly due to trust, familiarity, and the availability of physical branches.

Additionally, the findings indicate that while customers appreciate the benefits of digital banking, concerns related to data security and privacy are still present among some users. These concerns influence the level of trust and cautious usage of digital banking services.

CONCLUSION

This study explored customer awareness and usage of digital banking, neo banks, and financial innovation using primary data. The findings indicate that digital banking has become a common and preferred mode of accessing banking services due to its ease of use, speed, and availability. Customers increasingly depend on digital platforms for everyday financial activities, reflecting the growing role of technology in shaping modern banking practices.

Neo banks have contributed to this shift by offering simple, technology-driven services and innovative features that appeal to digitally active users. At the same time, traditional banks continue to remain relevant, especially for customers who prefer personal interaction and physical branch support. Financial innovation has improved service efficiency and customer experience, but it has also highlighted the importance of data security and customer trust. Overall, the study suggests that the future of banking lies in the effective integration of digital innovation with secure and customer-focused banking practices.

LIMITATIONS OF THE STUDY

Despite careful planning and execution, the study has certain limitations:

1. The study is based on a limited sample size of 63 respondents, which may not fully represent the entire population.
2. The research uses convenience sampling, which may result in biased responses.
3. The study focuses mainly on urban and semi-urban respondents, limiting insights from rural areas.
4. Responses are based on personal opinions and perceptions of respondents, which may vary over time.
5. Due to time constraints, the study covers only selected aspects of digital banking and neo banks.

FEEDBACK & SUGGESTIONS

Based on the responses collected from participants, overall feedback toward digital banking and neo banks is largely positive. Most respondents expressed satisfaction with the convenience, speed, and accessibility offered by digital banking platforms. Features such as mobile banking applications, instant payments, and real-time transaction updates were appreciated for saving time and reducing the need for physical branch visits.

Respondents also provided positive feedback on neo banks for their user-friendly interfaces and innovative digital features. However, some participants expressed concerns regarding data security, privacy, and the lack of physical branches, especially when dealing with complex banking issues. A few respondents indicated that while digital services are efficient, trust and reliability remain important factors influencing long-term usage.

The following suggestions are offered:

1. Banks and neo banks should strengthen cybersecurity measures to enhance customer trust and reduce concerns related to data privacy and online fraud.
2. Increased digital awareness and financial literacy programs should be conducted to educate users about advanced digital banking features and safe usage practices.
3. Neo banks should consider expanding their range of services, such as loans and investment options, to match customer expectations and compete effectively with traditional banks.
4. Traditional banks should continue to invest in digital innovation while maintaining personalized customer support for users who prefer human interaction.
5. Regulatory authorities should ensure clear guidelines and consumer protection policies to support secure and sustainable growth of digital banking and neo banks.

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NAVIGATING PROFESSIONAL AND PERSONAL SPHERES: A STUDY ON WORKING WOMEN'S CONTRIBUTION TO SELF-DEVELOPMENT AND FAMILY RESPONSIBILITY

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ABSTRACT

Purpose: *This study, titled “Navigating Professional and Personal Spheres: A Study on Working Women’s Contribution to Self-Development and Family Responsibility,” delves into the intricate balance that working women maintain between their careers, personal growth, and family duties. By employing a descriptive research design and gathering survey responses from 80 working women, the study investigates how family and workplace support, along with engagement in self-development, influence career advancement amidst family responsibilities. The findings indicate that while support from family and flexible workplace policies significantly aid women in juggling these multiple roles, they still face challenges like work pressure, time limitations, and household tasks. The research underscores several positive outcomes, such as boosted confidence, financial independence, and personal growth, while also highlighting the critical need for shared domestic responsibilities, adaptable work arrangements, and wellness initiatives to empower women and foster a sustainable work-life balance.*

Keywords: *Working Women, Self Development, Family Responsibilities, Career Progression, Workplace Support, Family Support, Personal Growth.*

INTRODUCTION

In today’s fast-changing socio-economic environment, more women are entering the workforce, marking a shift from traditional gender roles. Working women now balance professional responsibilities with personal growth and family duties, which influences their well-being and career development. Their ability to manage these roles depends greatly on family support and workplace environments, including organizational policies and managerial encouragement. While employment offers independence and financial stability, women continue to face challenges such as work overload, childcare responsibilities, and societal expectations.

The study, “Navigating Professional and Personal Spheres: A Study on Working Women’s Contribution to Self-Development and Family Responsibility,” examines the relationship between work, self-development, and family obligations. It explores women’s perceptions of their roles, the impact of family responsibilities on career growth, and the support systems that help them manage both professional and personal lives effectively.

OBJECTIVE OF STUDY

1. To Study the support received by working women from family and workplace in managing Responsibilities.
2. To get the perception of working women towards their contribution in Self-growth and family Life.
3. To identify the Long-term Career Progression of working women and how it is influenced by their family Responsibilities.
4. To Understand the changes in lifestyle of women after entering the workforce.

LITERATURE REVIEW

1. **“Multiple roles of working women and psychological well-being” — Sudhinta Sinha. Industrial Psychiatry Journal, 2017.**

Sinha (2017) looked at the challenges working women face while balancing jobs, family, and household duties. Women in dual-earner families often feel more pressure but benefit from greater support. Emotional and practical help from family, along with a supportive workplace, can make managing these responsibilities easier. The study emphasizes that strong family and workplace support is key to women’s mental health and overall well-being.

2. **“Work–Life Balance among Married Women Employees” — N. Krishna Reddy, M. N. Vranda, Atiq Ahmed, B. P. Nirmala & B. Siddaramu. Indian Journal of Psychological Medicine, 2010.**

This study examines the challenges married working women in India face balancing work and family. Factors like children, long work hours, and limited support can increase stress and lower life satisfaction. Women with

strong family and workplace support cope better, highlighting the importance of social networks and flexible policies in maintaining a healthy work-life balance.

3. “The impact of motherhood on women's career progression”— A. J. C. Torres. Journal: PLOS / PubMed Central. 2024.

In 2024, Torres explored how motherhood affects women’s careers, showing that mothers often face slower promotions, lower pay, and hiring biases compared to men and childless women. Career breaks, part-time work, and workplace discrimination add to these challenges. The study highlights that supportive, flexible, and gender-neutral workplaces are essential to help mothers grow professionally while balancing family responsibilities.

4. “Work life balance of women employees: a literature review” — A. Vasumathi. Int. Journal of Services & Operations Management / VIT (paper). 2018.

This study explored work-life balance for women employees and found that flexible work options, family support, and strong social networks make it easier to manage. Long hours, rigid schedules, and traditional gender roles can create challenges. Women often cope through time management, social support, or job changes. The study highlights that work-life balance depends on personal, family, and organizational factors and calls for more detailed, sector-specific research.

5. “A self-efficacy approach to the career development of women” — G. Hackett & R. Lent. Journal: (Foundational article linking self-efficacy to career outcomes). 1981.

Hackett and Lent (1981) introduced a self-efficacy framework to explain women’s career development, showing that confidence in one’s abilities strongly influences career choices and persistence. Skill development, role models, and social support boost self-efficacy, while career interruptions and discouragement can hold women back. The framework remains important for understanding how personal growth supports long-term career success.

RESEARCH METHODOLOGY

Research Design

This study takes a descriptive approach to dive into how family duties, personal growth, job contributions, and workplace experiences shape the professional and personal lives of women. It aims to capture the perceptions and trends of respondents through quantitative data gathered from structured survey questions.

Data Collection Method:

Primary Data was collected using an online questionnaire, while secondary data was sourced from various journals and articles. The responses were then analysed to identify trends related to self-development, family responsibilities, and their impact on careers.

Sampling Method & Sample Size:

The study employed Non- Probability Convenience sampling, selecting 80 Working Women and management students based on accessibility and willingness to participate.

DATA ANALYSIS

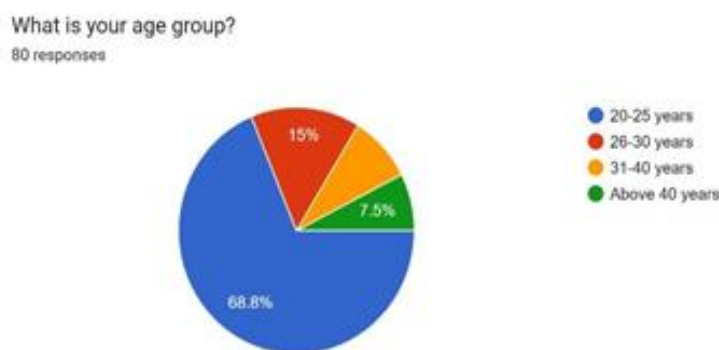


Figure no.1.1

The chart shows that most respondents (68.8%) belong to the 20–25 years age group, indicating a predominantly young and early-career sample. Smaller proportions fall in the 26–30 years (15%), 31–40 years (8.8%), and above 40 years (7.5%) categories, which may influence the perceptions and responses reflected in the study.

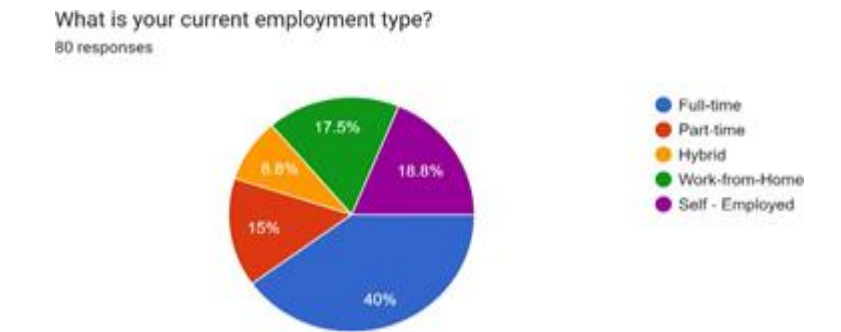


Figure no.1.2

The pie chart below shows the current employment type for 80 respondents. Full-time occupies the top slot in this pie, standing at 40%, followed by Self-Employed at 18.8%, Work-from-Home at 17.5%, Part-time employment at 15%, and Hybrid is at the bottom, standing at 8.8% of the total.



Figure 1.3

The pie chart shows that 55% of respondents receive high family support, 20% moderate support, 18.8% are neutral, 3.7% report slight support, and 2.5% experience no support, indicating an overall positive role of family support in work–life balance.

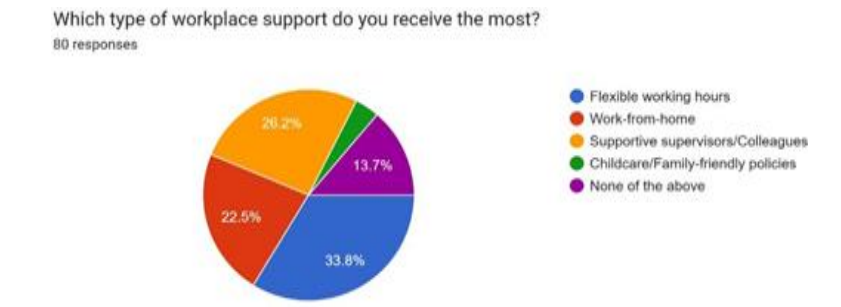


Figure no 1.4

The chart shows that flexible working hours (33.8%) are the most common form of workplace support, followed by supportive supervisors/colleagues (26.2%) and work-from-home options (22.5%). Only 3.7% reported receiving childcare or family-friendly policies, while 13.7% indicated receiving no workplace support, highlighting limited institutional support for family needs.

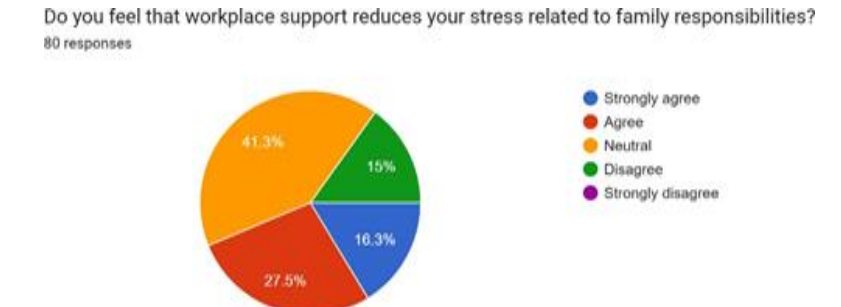


Figure no 1.5

The chart indicates that 43.8% of respondents agree or strongly agree that workplace support reduces family-related stress, while 41.3% are neutral and 15% disagree, showing varied perceptions of workplace support effectiveness.

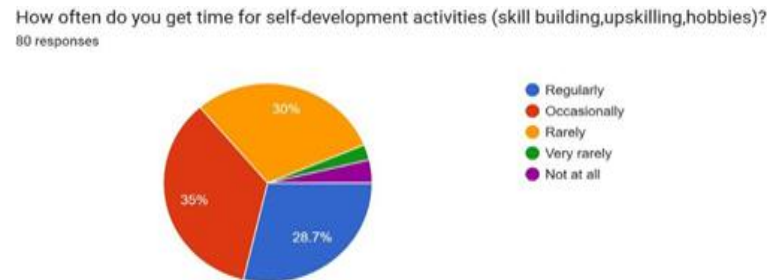


Figure no. 1.6

The pie chart shows that 35% of respondents engage in self-development occasionally, 30% rarely, and 28.7% regularly, while only 2.5% do so very rarely and 3.7% not at all, indicating time constraints for some.

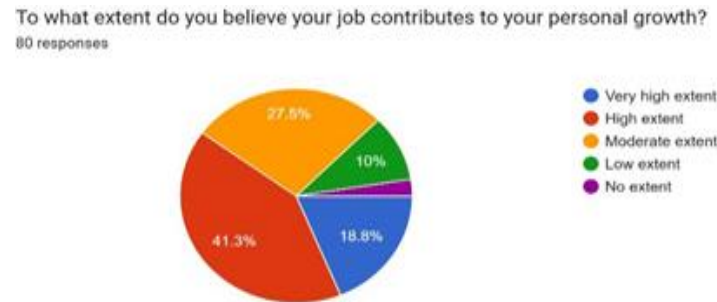


Figure no. 1.7

The pie chart shows that most respondents feel their job supports personal growth, with 41.3% reporting a high extent, 27.5% moderate, and 18.8% very high. Only 10% perceive low growth, and 2.5% report no personal growth from their job.

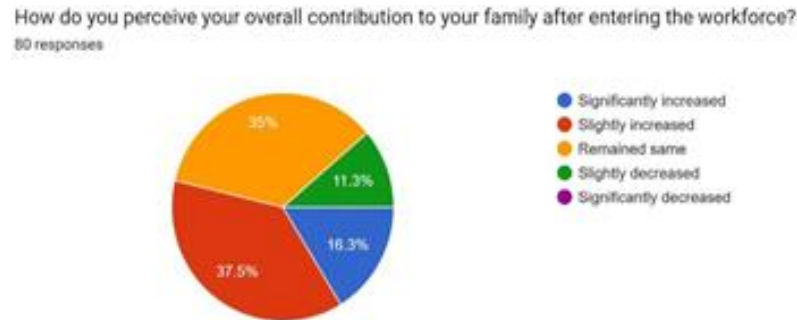


Figure no. 1.8

The pie chart shows that most respondents feel their contribution to family has either slightly increased (37.5%) or remained the same (35%) after entering the workforce. A smaller share (16.3%) reports a significant increase, while only 11.3% perceive a slight decrease, indicating overall stability or improvement in family contribution.

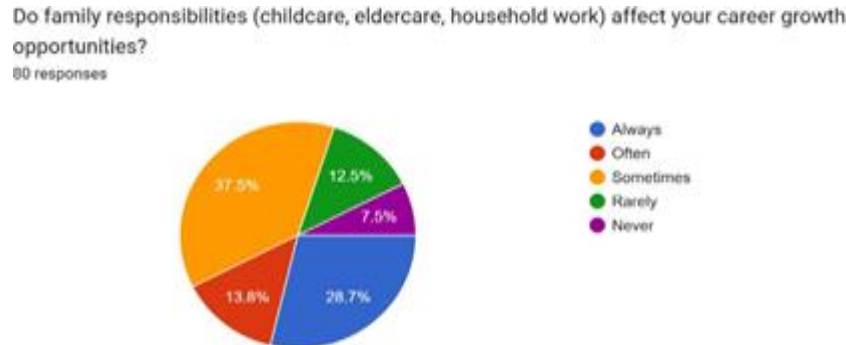


Figure no.1.9

The pie chart shows that family responsibilities affect career growth for most respondents, with 37.5% reporting sometimes, 28.7% always, and 13.8% often. Only a small proportion report rarely (12.5%) or never (7.5%), indicating a generally moderate to strong impact on careers.

Have you ever had to postpone or compromise your career ambitions due to family commitments?
80 responses

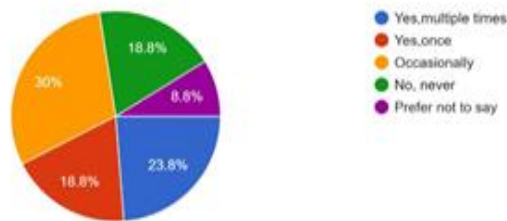


Figure no. 1.10

The pie chart shows that 30% of respondents occasionally postponed career ambitions, 23.8% did so multiple times, and 18.8% once due to family commitments, while 18.8% never did and 8.8% preferred not to say.

What kind of support would you pursue career advancement more effectively?
80 responses

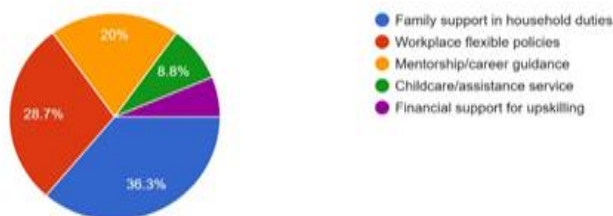


Figure no. 1.11

The pie chart shows that family support in household duties (36.3%) and workplace flexible policies (28.7%) are the most important supports for career advancement. Other needs include mentorship (20%), childcare services (8.8%), and financial support for upskilling (6.3%), indicating family and workplace support are key priorities.

How has your daily routine changed after starting work?
80 responses

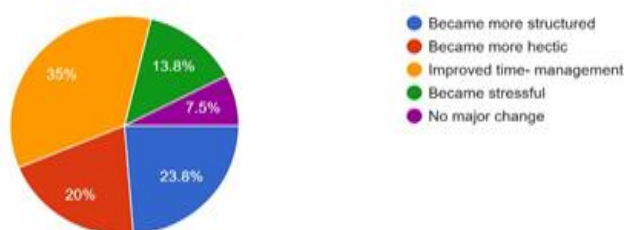


Figure no. 1.12

The pie chart shows that starting work improved routines for most—35% managed time better and 23.8% had more structure—while 20% found it hectic, 13.8% stressful, and 7.5% saw no change.

Which area of your lifestyle has changed the most due to work?
80 responses

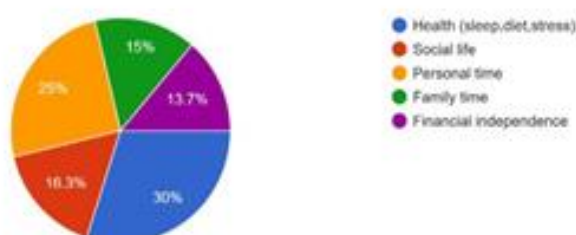


Figure no. 1.13

The pie chart shows work most affects health (30%), followed by personal time (25%) and social life (16.3%), with family time (15%) and financial independence (13.7%) less affected.

Which of these do you consider the biggest positive change in your life since starting work?
80 responses

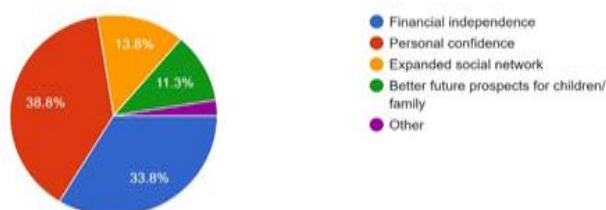


Figure no. 1.14

The pie chart shows that the most significant positive changes since starting work are personal confidence (38.8%) and financial independence (33.8%), together accounting for over 72% of responses. Other benefits include an expanded social network (13.8%) and better future prospects for family (11.3%), while only 2.5% reported other changes.

What is the biggest challenge you face in balancing both spheres?
80 responses

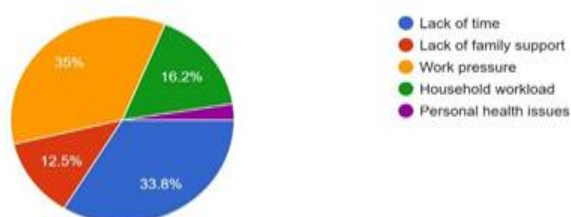


Figure no.1.15

The pie chart shows that work pressure (35%) and lack of time (33.8%) are the main challenges in balancing work and personal life. Other issues include household workload (16.2%) and lack of family support (12.5%), while personal health issues (2.5%) are the least reported challenge.

Overall how do you feel with your personal growth and family contribution as a working women
80 responses

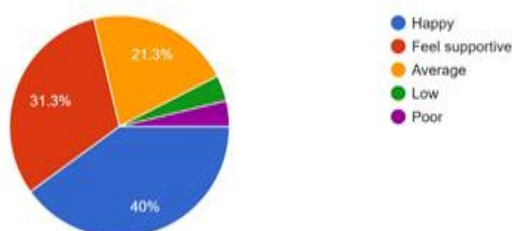


Figure no. 1.16

The pie chart indicates a largely positive outlook among working women, with 40% feeling happy and 31.3% feeling supported. 21.3% reported an average experience, while only 7.4% expressed low or poor satisfaction.

FINDINGS & SUGGESTIONS

1. **Share Household Duties:** Families should be encouraged to help more with domestic chores. Because 36.3% of women say household help is the most important factor for their success, sharing these tasks can prevent women from having to compromise their career goals.
2. **Schedule Time for Self-Growth:** Workplaces should offer dedicated hours for learning and upskilling. This is necessary because 65% of women currently find it hard to engage in self-development regularly due to a lack of time and heavy work pressure.
3. **Focus on Health and Stress:** Companies should provide wellness programs or stress- management workshops. This would directly help the 30% of women who reported that their health and sleep are the most affected areas of their life since they started working.

CONCLUSION

The study highlights the challenges faced by working women in balancing career growth and family responsibilities. Family support, flexible workplace policies, and encouragement from colleagues help women manage these roles, yet time constraints, work pressure, and household duties remain significant obstacles. Despite these challenges, most women report positive outcomes such as increased confidence, financial

independence, and personal growth. However, opportunities for self-development are often limited, and family responsibilities continue to moderately influence career progression.

Creating supportive environments at home and in the workplace—through shared domestic duties, flexible work arrangements, and wellness initiatives—can enable women to better manage their dual roles. Such measures empower women to pursue personal growth, advance professionally, and contribute meaningfully to their families, ultimately enhancing overall well-being, career satisfaction, and long-term success.

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THE IMPACT OF GENERATIVE AI ON TRANSFORMING CREATIVITY, PRODUCTION PROCESSES, AND MARKET DYNAMICS OF THE AVGC-XR INDUSTRY

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ABSTRACT

Generative Artificial Intelligence (AI) is revolutionizing the Animation, Visual Effects, Gaming, Comics, and Extended Reality (AVGC-XR) industry by transforming creative processes, production methodologies, and market dynamics. This research explores the impact of generative AI, highlighting its ability to automate content creation, enhance production efficiency, and democratize artistic expression. AI-driven tools now enable creators to generate high-quality assets, simulate realistic environments, and develop adaptive narratives, significantly reducing time and costs. The integration of AI has also introduced ethical concerns, including copyright infringement, workforce displacement, and cultural sensitivity, necessitating the establishment of regulatory frameworks and responsible AI practices. Furthermore, generative AI is reshaping consumer engagement by enabling personalized and immersive experiences, particularly in gaming and XR environments, where AI adapts content in real time based on user interactions. The economic implications of AI adoption are profound, offering cost efficiencies while presenting challenges for smaller studios due to the high initial investment in AI technologies. However, achieving a balance between automation and human creativity remains crucial to preserving artistic uniqueness in AI-generated content. This study provides a comprehensive analysis of the opportunities and challenges posed by generative AI in the AVGC-XR industry, offering insights into its future trajectory and the need for ethical, economic, and creative considerations to ensure sustainable innovation.

Keywords: Generative AI, AVGC-XR industry, content creation, automation.

INTRODUCTION

The rapid advancements in Generative Artificial Intelligence (AI) have significantly transformed the Animation, Visual Effects, Gaming, Comics, and Extended Reality (AVGC-XR) industry. Generative AI refers to AI models capable of creating new content, including images, animations, virtual environments, and even narratives, with minimal human intervention. By leveraging deep learning techniques, these AI-driven tools have redefined creative workflows, enabling faster production cycles and enhancing content quality. This transformation is not only improving efficiency but also expanding the accessibility of high-quality content creation to independent creators and small studios.

Beyond its technical capabilities, generative AI is reshaping the industry's economic and market dynamics. However, despite its advantages, the integration of AI in creative industries raises ethical and practical challenges, including concerns over intellectual property rights, the displacement of human artists, and the authenticity of AI-generated content.

As AI continues to evolve, its convergence with emerging technologies like blockchain and quantum computing presents new opportunities for intellectual property management and content security. This study explores the multifaceted impact of generative AI on the AVGC-XR industry, analyzing its benefits, challenges, and future prospects. Understanding the balance between automation and human creativity is essential to ensure AI remains a tool that enhances artistic expression rather than replaces it.

REVIEW OF LITERATURE

1) Smith and Johnson (2022) conducted a comprehensive study on how generative AI tools like DALL-E and Midjourney are revolutionizing digital art creation. Their research highlighted the automation of texture generation and the enhancement of design workflows. The study found that 85% of designers experienced faster prototyping and greater creative variation when using AI tools. Additionally, AI played a crucial role in overcoming creative blocks by providing unexpected design ideas. The authors emphasized that AI allows artists to focus more on high-level conceptual work rather than repetitive tasks, ultimately leading to more innovative outcomes in digital art.

2) Patel and Sharma (2023) investigated the role of AI-powered platforms such as Amper Music and AIVA in music composition for films and video games. Their research showed that 70% of composers using these tools

experienced faster production cycles and increased creative output. AI proved particularly effective for creating repetitive background scores and testing multiple variations. Some composers noted that AI could inspire new melodic structures that they would not have conceived independently. However, concerns about the emotional depth of AI-generated music were highlighted, emphasizing the need for human oversight in the creative process.

OBJECTIVES OF THE STUDY

- To explore how generative AI enhances creative processes in the AVGC-XR industry, including animation, storytelling, and game design.
- To analyze the influence of generative AI on production workflows, efficiency, and cost management in the AVGC-XR sector.
- To evaluate the adoption of generative AI tools by independent creators versus large studios in the AVGC-XR industry.
- To identify the key challenges and opportunities of incorporating generative AI into the AVGC-XR sector in India.

STATEMENT OF THE PROBLEM

The rapid adoption of generative AI in the AVGC-XR (Animation, Visual Effects, Gaming, Comics, and Extended Reality) industry is transforming creative processes and production workflows. AI-driven tools provide automation, cost efficiency, and creative augmentation, enabling faster content generation and improved production capabilities. However, this technological shift also introduces significant challenges, including the potential decline of traditional artistic skills, ethical concerns related to intellectual property, and disparities in AI adoption between large studios and independent creators.

Despite the growing presence of AI in the industry, limited research exists on its impact on production efficiency, creative innovation, and market dynamics, particularly within India's evolving AVGC-XR sector. The challenge lies in striking a balance between human creativity and AI-powered automation while ensuring that technological advancements benefit all industry stakeholders. Addressing these concerns is crucial for industry professionals and policymakers alike. This study aims to explore the effects of generative AI on creativity, production workflows, and market adoption while identifying both the challenges and opportunities that emerge in the Indian AVGC-XR landscape.

SIGNIFICANCE OF THE STUDY

This study holds significant value in understanding the transformative impact of Generative AI on the AVGC-XR (Animation, Visual Effects, Gaming, Comics, and Extended Reality) industry. As AI-driven tools become increasingly integrated into creative workflows, their influence on artistic expression, production efficiency, and market dynamics continues to grow. By analyzing how Generative AI enhances creativity and optimizes production timelines, this research provides insights that can benefit industry professionals, independent creators, and businesses looking to adopt AI-powered solutions.

The findings of this study highlight how AI enables faster ideation, automates repetitive tasks, and accelerates content generation, allowing creators to focus more on storytelling and innovation. Additionally, the research identifies key challenges such as accessibility, ethical considerations, and the need for skill development, offering recommendations for sustainable AI adoption.

Furthermore, this study contributes to the broader discourse on AI's role in creative industries by providing empirical evidence of its benefits and limitations. It serves as a valuable resource for industry stakeholders, policymakers, and researchers, helping shape future strategies for AI integration. By fostering a balanced approach between automation and human creativity, this study paves the way for more innovative, efficient, and ethically responsible AI applications in the AVGC-XR industry.

RESEARCH METHODOLOGY

This study employs a mixed-methods approach, utilizing **primary** and **secondary data** to analyze the impact of generative AI on the AVGC-XR industry.

Primary data is collected through surveys, interviews, and case studies involving industry professionals such as animators, game developers, and AI experts. These methods provide insights into AI adoption, its benefits, challenges, and real-world applications in creative workflows and production efficiency.

Secondary data includes academic research, industry reports, company whitepapers, and government policies. These sources offer technical insights, market trends, and regulatory perspectives on AI integration. By combining both data types, the study provides a comprehensive analysis of AI's transformative role in the AVGC-XR sector.

SAMPLING DESIGN

This study utilizes a **stratified sampling method** to collect primary data, ensuring a well-distributed representation of professionals from various sectors within the AVGC-XR industry. The stratified sampling approach divides the population into distinct subgroups—such as animation artists, VFX specialists, game developers, extended reality creators, and AI technology experts—allowing for targeted data collection that reflects diverse perspectives on AI integration.

Sampling unit – It consists of individuals and organizations actively engaged in the AVGC-XR industry, including professionals from large studios, independent creators, and startups utilizing AI-driven tools. By selecting participants from different industry segments, the study captures a comprehensive understanding of how generative AI impacts creativity, production efficiency, and market dynamics.

Sample size - It is determined based on the availability and willingness of industry professionals to participate. Surveys and questionnaires are distributed to a **representative sample of professionals across different AVGC-XR domains**, while **in-depth interviews** are conducted with a selected number of studio executives, AI developers, and policymakers. This ensures a balanced mix of quantitative and qualitative insights, providing a holistic view of AI adoption and its implications in India's evolving AVGC-XR sector.

Categorized Population and Sample Size Employment-Based Categorization:

Freelancers/Independent Creators – 50%

Small Studios (1–20 Employees) – 20%

Medium Studios (21–100 Employees) – 15%

Large Studios (100+ Employees) – 15%

HYPOTHESES OF STUDY

Hypothesis I

H0: Generative AI does not have a significant impact on enhancing creative processes in the AVGC-XR industry; traditional methods remain equally effective.

H1: Generative AI significantly enhances creative processes in the AVGC-XR industry by enabling faster ideation, personalized content creation, and innovative storytelling techniques.

Hypothesis II

H1: Generative AI significantly reduces production timelines in the AVGC-XR industry by automating repetitive tasks such as asset generation, rendering, and post-production processes.

H0: Generative AI does not significantly reduce production timelines in the AVGC-XR industry; traditional production workflows remain equally efficient.

DATA ANALYSIS AND HYPOTHESIS TESTING

The data collected from surveys, interviews, and case studies was analyzed using both **descriptive** and **inferential** statistical methods to assess the impact of generative AI on the AVGC-XR industry. Descriptive analysis helped summarize trends in AI adoption, production efficiency, and creative enhancement, while inferential analysis was used to establish relationships between key variables.

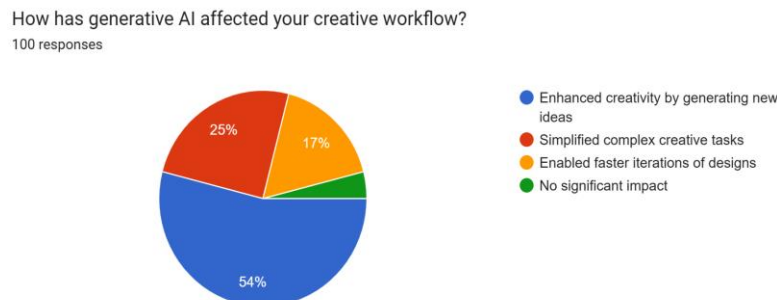
Hypothesis testing was conducted to evaluate the extent to which generative AI influences creative processes and production timelines. The study examined whether AI-driven tools enhance artistic innovation, streamline workflows, and reduce overall production costs. By analyzing responses from industry professionals, the research identified patterns that support the increasing reliance on AI to optimize content creation and market competitiveness.

Data analysis

Table 1.1 Impact on Creative Workflow

Responses	
Enhanced creativity by generating new ideas	54
Simplified complex creative tasks	25
Enabled faster iterations of designs	17
No significant impact	14
Grand Total	100

Chart 1.1 Impact on Creative Workflow



Source: Prepared by the researchers from primary data

Chart 1.1 demonstrates that the majority of respondents (54%) believe that generative AI has **enhanced creativity by generating new ideas**. Additionally, 25% of participants stated that AI has **simplified complex creative tasks**, while 17% reported that it has **enabled faster iterations of designs**. A small portion of respondents (4%) indicated that AI had **no significant impact** on their creative workflow. This suggests that generative AI is widely perceived as a valuable tool for augmenting creativity and streamlining design processes.

Hypotheses I Testing

Since the hypothesis test aims to check whether AI significantly impacts creative workflows, we assume that if **AI had no impact**, the responses would be **uniformly distributed** among the four options. Thus, under the null hypothesis (H_0), the **expected frequency (E) for each category would be:**

$$E = (\text{Total Responses} / \text{Number of Categories}) = (100 / 4) = 25$$

1. Performing the Chi-Square Goodness-of-Fit Test

The chi-square formula used is:

$$\chi^2 = \sum [(O - E)^2 / E]$$

Substituting the observed and expected values:

$$\chi^2 = (54 - 25)^2 / 25 + (25 - 25)^2 / 25 + (17 - 25)^2 / 25 + (4 - 25)^2 / 25$$

$$\chi^2 = 841 / 25 + 0 / 25 + 64 / 25 + 441 / 25$$

$$\chi^2 = 33.64 + 0 + 2.56 + 17.64$$

$$\chi^2 = 53.84$$

2. Determining Statistical Significance

- The **degrees of freedom (df)** are calculated as: $df = \text{Number of Categories} - 1 = 4 - 1 = 3$
- The **p-value** corresponding to $\chi^2 = 53.84$ with $df = 3$ is **1.21e-11 (0.000000000121)**, which is **much lower than 0.05**.

Since the **p-value is extremely low**, we **reject the null hypothesis (H_0)** and conclude that **generative AI has a significant impact on creative processes in the AVGC-XR industry**.

3. Interpretation of Results

The chi-square test confirms that the observed distribution of responses is not due to random chance, but rather due to a genuine impact of generative AI. Most respondents acknowledged AI's positive role in creative workflows, particularly in **idea generation, task simplification, and iterative design improvements**.

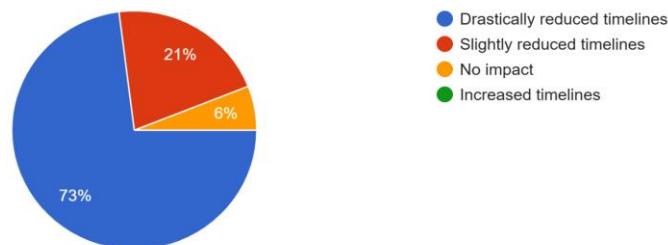
This statistical analysis strengthens the argument that **generative AI is transforming creative workflows in the AVGC-XR industry**, making it an essential tool for modern content creators.

Table 1.2 Impact on Production Timelines

Responses	
Drastically reduced timelines	73
Slightly reduced timelines	21
No impact	6
Increased timelines	0
Grand Total	100

Chart 1.2 Impact on Production Timelines

In your experience, how has generative AI impacted production timelines?
100 responses



Source: Prepared by the researchers from primary data

Chart 1.2 demonstrates that the majority of respondents (73%) believe that generative AI has **drastically reduced production timelines**. Of these, **21%** reported that AI has **slightly reduced timelines**, while **6%** stated that it had **no impact** on production speed. Notably, none of the respondents indicated that AI had increased timelines. This suggests that generative AI plays a significant role in improving efficiency and accelerating production workflows.

Hypotheses II Testing

If **AI had no impact**, we assume the responses would be **uniformly distributed** among the four options. Thus, under the null hypothesis (H_0), the **expected frequency (E)** for each category would be:

$$E = (\text{Total Responses} / \text{Number of Categories}) = (100 / 4) = 25$$

1. Performing the Chi-Square Goodness-of-Fit Test

The chi-square formula used is:

$$\chi^2 = \sum [(O - E)^2 / E]$$

Substituting the observed and expected values:

$$\chi^2 = (73 - 25)^2 / 25 + (21 - 25)^2 / 25 + (6 - 25)^2 / 25 + (0 - 25)^2 / 25$$

$$\chi^2 = 2304 / 25 + 16 / 25 + 361 / 25 + 625 / 25$$

$$\chi^2 = 92.16 + 0.64 + 14.44 + 25$$

$$\chi^2 = 132.24$$

2. Determining Statistical Significance

1. The **degrees of freedom (df)** is calculated as: $df = \text{Number of Categories} - 1 = 4 - 1 = 3$

2. The **p-value** corresponding to $\chi^2 = 132.24$ with $df = 3$ is **extremely low (approaching 0, much smaller than 0.05)**.

Since the **p-value is significantly lower than 0.05**, we **reject the null hypothesis (H_0)** and conclude that **generative AI has a significant impact on reducing production timelines in the AVGC-XR industry**.

3. Interpretation of Results

The chi-square test confirms that the observed distribution of responses is not due to random chance but instead reflects a strong, **positive impact of generative AI on production timelines**.

1. **73% of respondents reported a drastic reduction in timelines**, indicating that AI-powered automation tools have significantly streamlined production processes.
2. **21% of respondents noted a slight reduction**, showing that AI's impact is generally beneficial, though its efficiency gain varies depending on the workflow.
3. **Only 6% saw no impact, and no respondents indicated an increase in production timelines**, reinforcing the conclusion that AI accelerates production rather than causing delays.

This statistical validation supports the argument that **generative AI plays a crucial role in improving efficiency within the AVGC-XR sector** by reducing manual work, optimizing workflows, and speeding up creative production.

FINDINGS AND RECOMMENDATIONS

The study reveals that Generative AI is transforming the AVGC-XR industry by significantly enhancing creativity and streamlining production workflows. AI tools assist in breaking creative blocks, enabling faster visualization, and automating repetitive tasks like texture mapping, background creation, and procedural world generation. These advancements allow artists to focus more on storytelling and artistic refinement, leading to improved efficiency and innovation. The research confirms that AI-driven solutions drastically reduce production timelines, making projects more cost-effective and competitive.

However, several challenges remain, including accessibility barriers, ethical concerns, and the need for structured training. To address these, it is recommended that industry professionals undergo skill development programs, including workshops and certifications on AI-powered tools. Additionally, cost-effective AI solutions and cloud-based services should be promoted to make these tools more accessible to independent creators and small studios. Ethical considerations, such as copyright policies and content bias prevention, should also be prioritized to ensure responsible AI integration. AI should be leveraged not as a replacement but as a collaborative assistant that complements human creativity. Encouraging experimentation and hybrid workflows will allow studios to push creative boundaries while maintaining artistic authenticity. The findings serve as a roadmap for sustainable AI adoption, ensuring a balanced synergy between technology and human-driven creativity.

CONCLUSION

This study confirms that Generative AI is a transformative force in the AVGC-XR industry, significantly enhancing creativity and reducing production timelines. The findings indicate that AI-driven tools empower professionals by streamlining ideation, automating repetitive tasks, and enabling faster content development. The statistical analysis validated these effects, demonstrating that AI plays a crucial role in optimizing workflows and fostering innovation. However, while AI adoption presents numerous advantages, challenges such as accessibility, ethical considerations, and the need for skill development must be addressed. Moving forward, industry stakeholders should focus on sustainable AI integration, ensuring a balance between technological advancements and human creativity. Future research should further explore AI's long-term impact, its evolving role in content creation, and best practices for responsible implementation in the AVGC-XR sector.

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IMPACT OF VENUE SELECTION ON M.I.C.E. EVENT SUCCESS

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ABSTRACT

Meetings, Incentives, Conferences and Exhibitions (MICE) is a subset of the world wide tourism and business events. The MICE market has been globalization, trans-national business partnering and the widening of the corporate and professional network. Venue is one of the most important factors of an event's success in MICE as it is the basis of planning, implementation, and experience of participants. The current research paper under consideration named Impact of Venue Selection on MICE Event Success aims at the comprehension of the connection between the venue selection and the overall success of MICE events. The research examines the major aspects that determine venue selection including location, accessibility, infrastructure, technological preparedness, capacity, safety, ambience and quality of service. In analysis of qualitative and secondary data, the study identifies the impact of venue-based choices on the satisfaction of events, branding, attendance, and logistical effectiveness. Moreover, this paper analyses the emerging MICE industry of India and determines the emerging destinations of the country such as Delhi, Mumbai, Bengaluru, Hyderabad and Goa that are transforming the event industry of India. It also addresses how organizers deal with the problem of selecting appropriate venues, including expensive pricing, inadequate supply, and infrastructural irregularities. The results of this study underline that selection of the venue is not an operational choice at all but a strategic choice. An appropriate venue can boost event image, streamline logistics and bring about a high level of satisfaction to attendees and this will make an event successful.

Keywords: MICE tourism, venue selection, event management, event success factors, location accessibility, infrastructure, technological readiness, service quality, attendee satisfaction, event logistics, branding, corporate events, conference venues, Indian MICE industry, emerging MICE destinations, event planning strategy, venue capacity, safety and ambience, event organizer challenges, tourism development.

INTRODUCTION

Background of the Study

MICE (Meetings, Incentives, Conferences, and Exhibitions) business has become one of the major sources of economic and tourist development globally. It is a major segment of business travel and it gathers together professionals, corporates and organizations to exchange knowledge, network as well as work together. At MICE tourism, unlike leisure tourism, which focuses on recreation, this tourism type is goal-oriented and is directly related to professional development and economic activity. MICE events no longer are just mere business meetings, but as the years passed by, have become extremely advanced, to an adventure filled with technology, combining both corporate and cultural, educational, and recreational activities. These events also lead to branding of a destination, infrastructural development and financial gain in the hospitality, aviation and local tourism sectors. As per international tourism research, MICE tourism is one of the greatest contributors of total tourism income in most of the developed economies which points to the significance of MICE tourism as a growth driver. In that regard, the selection of the venue has been identified as one of the crucial factors that influence the results of the event. The venue does not just offer the physical space to host, but it is also the emotional and experience base of the attendee. The selection of a venue should correspond to the goals of the event, their brand image, and should make the participants feel relaxed, involved, and connected.

Understanding MICE Events

MICE is an acronym that means Meetings, Incentives, Conferences, and Exhibitions: each of them has its own role in business tourism: Meetings entail a debate, decision making or training that is usually conducted in a corporate setting or within a professional institution. Rewards are incentive travels that are used to inspire employees or business associates. Conferences are the gathering of experts, delegates or stakeholders to share knowledge and ideas. Exhibitions are the events at which the organizations present their products, innovations, or services to the potential clients or the population. All these events require the appropriateness of the venue. The wrong place of choice may influence the logistics, attendance, and customer satisfaction, and the right

venue can increase convenience, interest, and brand loyalty. The significance of the venue selection is presented herein.

One of the very first and most important choices regarding event planning is the venue choice. All other arrangements, such as event design, logistics, technical setup, and hospitality are based on the venue. The selection will be based on a variety of parameters including location, accessibility, ambience, cost, technology, catering facilities, parking, and safety standards. The effectiveness of the event will significantly increase when there is a venue that is in line with the theme and objectives of the event. As an example, an event of high-tech conference needs a high-level audiovisual infrastructure; an incentive retreat might need a picturesque, resort-like environment. Venue also has an effect in the audience perception- it affects the way the audience will view the professionalism of the event, comfort and credibility. In the MICE sector, the choice of venue is also directly related to such event success measurements as attendance, satisfaction rates, post-event retrospective and the return-on-investment (ROI). An excellent venue will not only promote smooth operations but will also improve the general experience, which will secure the re-appearing and good word of mouth marketing.

MICE Tourism and Venue Dynamics India

India is also currently one of the most promising destinations in Asia in terms of MICE. The growing economy of the country, the enhanced air connectivity and the best hospitality infrastructure in the world has placed the country at an advantaged position on the global MICE map. New Delhi, Mumbai, Bengaluru, Hyderabad, Goa, Jaipur and Chennai are also the hot destinations due to conferences, trade fairs, incentives programs. The programs of the government like incredible India, dekho apna desh and meet in India are meant to market India as a global business events destination. This has been seen in the construction of modern convention centres such as Bharat Mandapam (Pragati Maidan, Delhi) and Jio World Convention Centre (Mumbai) to offer convention centres of global standards with state-of-the-art technology and accommodation. Nonetheless, venue selection is also crucial to the success of the MICE events in India. Elements like congestion in the city, unreliable service delivery, and logistical problems may influence the results of the events. Thus, the venue selection must be thoroughly considered - in terms of accessibility, audience demographics, budget and sustainability factors.

Significance of the Study

This study is significant both academically and practically. Academically, it will be used in the study of the impact of environmental and logistical factors such as venue choice on MICE event performance. From an industry perspective, it provides practical information to event managers, tourism boards and policy makers to enhance venue planning strategies. Through the discussion of the changing situation of MICE in India, the paper seeks to: Determine some of the important venue selection criteria. Determine their influence on event performance and satisfaction of the participants. Exemplify recent challenges and future opportunities in the MICE infrastructure in India.

REVIEW OF LITERATURE

Meetings, Incentives, Conferences and Exhibitions (MICE) has been transformed to become one of the pillars of business tourism and economic development throughout the world. Scholars and practitioners in the tourism sector have been urging all along the importance of venue selection in shaping the success of MICE events. Davidson and Cope (2003) say the venue is considered the physical representation of the concept of the event and has a direct impact on the experience of the participants and their networking possibilities and overall satisfaction. Some of these studies identify the most impactful parameters that can be used to select a venue as being accessibility, infrastructure, technology, proximity to accommodation and the quality of the services. As an example Swarbrooke (1995) noted that the first filters that event planners resort to include location and ease of transportation. In the same vein, Dwyer and Mistilis (1999) proposed that those facilities with advanced amenities, including Wi-Fi services, adaptable meeting rooms as well as sustainability-related certifications will receive more corporate customers and foreign delegates. According to a study conducted by the Ministry of Tourism (2019), in the Indian setting, the MICE segment is booming and cities such as Delhi, Mumbai, Hyderabad, and Bengaluru are becoming popular tourist spots because they have convention centres, 5 star hotels, and global connectivity. Nevertheless, researchers such as Singh (2020) believe that the absence of standard infrastructure, inadequate urban traffic and quality of services remain the obstacles to competitiveness of India as the international MICE destination. The discussion of post-pandemic changes was conducted by Agarwal (2021), who discovered that the aspects of safety, hygiene, and capability of hybrid events became determining factors. Seeing venues is no longer based on the capacity and the looks of the venues alone but on their capability to provide technology-enhanced and environmentally friendly and health conscious experience. Altogether, the literature is jelling down to the conclusion that the selection of the venue is a strategic choice

which predetermines the interest of the attendants, brand impression, and the ROI of the event. Nonetheless, the empirical literature on the association between the venue qualities and quantifiable success results is still missing- a gap that the current research will attempt to address.

OBJECTIVES OF THE STUDY

The major aim of this study is to explore the effect of venue choice on the success of MICE events in general. To fulfil this, the following specific objectives are developed: To determine the major variables in the choice of a venue in MICE events in India. To examine the correlation between attendant satisfaction and facilities in the venue. To determine the significance of infrastructure, accessibility, and technology in the outcome of events. The aim to determine the impact of sustainability and safety standards on the structure of the preferred venue after COVID-19. To make recommendations concerning the strategic solutions to the venue management that would increase the success rate of MICE events. Through these, the study would add valuable information to event organizers, venue managers, and policymakers who would want to make India a competitive destination in the global MICE industry.

Hypothesis

In order to formulate this study, the hypotheses that have been put forward are:

H1: The selection of venues has a strong correlation with the success of MICE events.

H2: Accessibility, quality of infrastructure, and technological support conditions have a positive impact on attendee satisfaction.

H3: Hygiene and safety post-pandemic behaviour significantly influences preference of venue and attendance to the event.

H4: International MICE events are likely to take place at venues that are sustainable and environmentally friendly.

The theories have been formulated to be validated by data gathering, data analysis using surveys and interpretation of the surveys answers of the organizers and participants of the events, which makes them connect the theory and its practical delivery.

RESEARCH METHODOLOGY

The current analysis of the topic of Impact of Venue Selection on MICE Event Success will use a systematic and data-driven approach to research, to make the results valid, accurate, and reliable. The study used both primary and secondary data to obtain the relevant information.

Research Design

The research is descriptive and analytical in nature. The descriptive section is aimed at identifying and conceptualizing the variables that define the selection of venue to host MICE events, whereas the analytical section defines the correlation between the attributes of the venue (infrastructure, accessibility, technology, etc.) and the event success indices (satisfaction of participants and the overall success).

The research design is available to both quantitative and qualitative interpretation of the results to guarantee a balanced perception of the industry and quantifiable results.

DATA COLLECTION

Primary Data:

The data was gathered using a closed questionnaire created using Google Forms to conduct the survey on different topics related to venue selection of MICE events. The questionnaire was distributed to event organizers, venue managers, hospitality industry people and individuals that have attended or organized MICE events of MICE in India.

Secondary Data:

The secondary data has been collected using real sources of information that include journals, books, research reports, online databases and government publications. Information obtained through the Ministry of Tourism (Government of India), UNWTO and ICCA was utilized to familiarize with international and domestic trends of MICE.

Techniques of Data Analysis

Sampling Analysis of the data collected was done by the use of the percentage and frequency distribution. To illustrate the responses clearly, the graphs in the form of bar charts, pie charts and line graphs were drawn.

Every graph was constructed separately in order to come up with significant patterns. In the case of qualitative answers, thematic analysis was used to determine common themes such as accessibility, quality of infrastructure and sustainability practices that affect the choice of a venue.

Design

The data collection was conducted through a convenience sampling technique because of the difficulty in accessing professional networks and time limitation. The sample of the respondents consisted of the representatives of the leading destinations of the Indian MICE market, such as Delhi NCR, Mumbai, Bengaluru, Hyderabad, Goa, and Udaipur. There were 52 respondents to the survey; it included representatives of corporate clients, event planners and venue professionals. Tools Used Data collection using Google Forms. Microsoft Excel to tabulate and create graphs. Interpretation Descriptive analysis. This is a systematic approach that offers a holistic approach to the study of the direct effects of venue choice on the success of MICE in India.

<https://docs.google.com/forms/d/1QZIm1sWv0LSShMEJGKG0PqI5r3tAM-mrSAtaoLMD9Sc/edit>

Graphs

Have you attended or organized a MICE event before?

59 responses

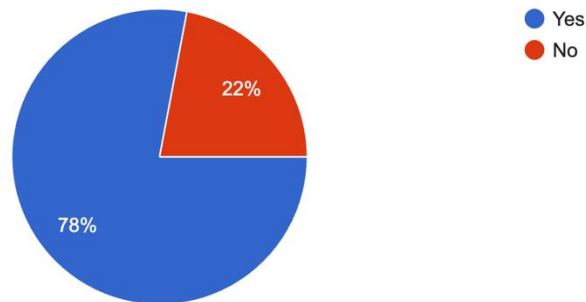


Figure 1: Attendance and organization of MICE

What type of MICE event was it?

59 responses

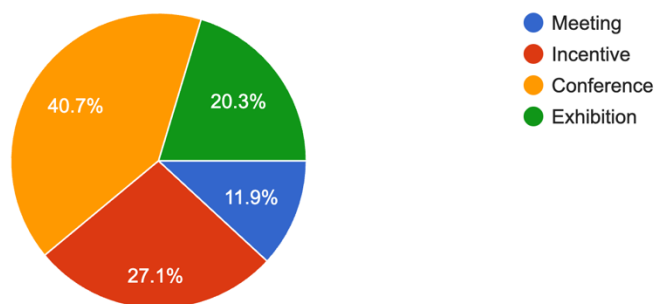


Figure 2: Type of Event

How important do you think venue selection is for an event's success?
59 responses

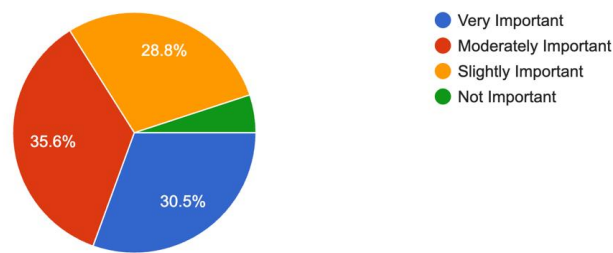


Figure 3: Importance of Venue Selection

Which factor influences your choice of venue the most?
59 responses

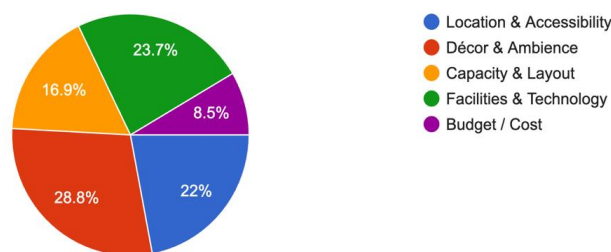


Figure 4: Influence on Venue Selection

How far are you willing to travel for a well-selected venue?
59 responses

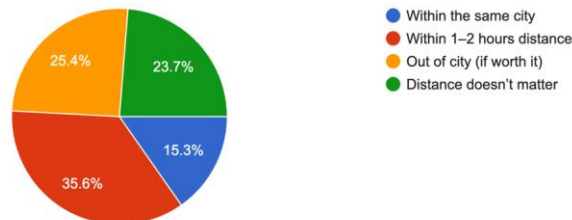


Figure 5: Travelling Time Preference

How would you rate the impact of venue ambience on attendee experience?
59 responses

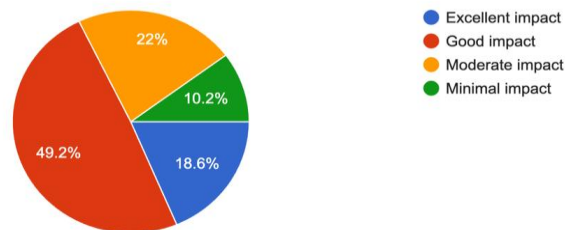


Figure 6: Impact of Venue Ambience

Which of these do you think contributes most to event success?
59 responses

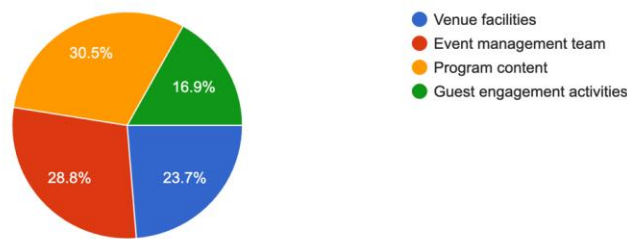


Figure 7: Factors Influencing Event Success

What's the most common challenge faced while selecting venues?
59 responses

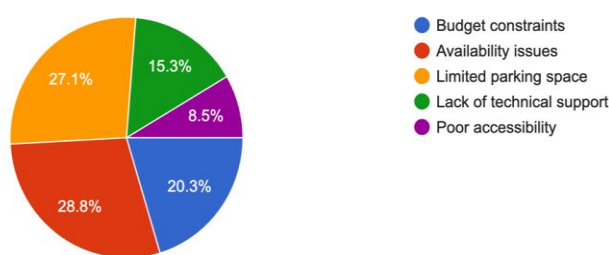


Figure 8: Challenges faced while Venue Selection

How important is the location of the venue for you?
59 responses

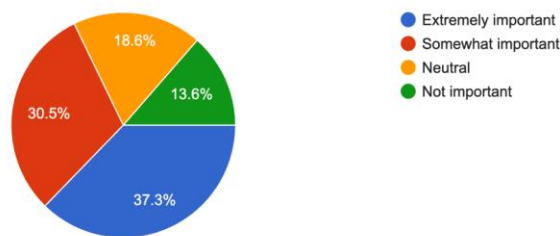


Figure 9: Importance of Venue Selection

How satisfied were you with the venue of the events you attended recently?
59 responses

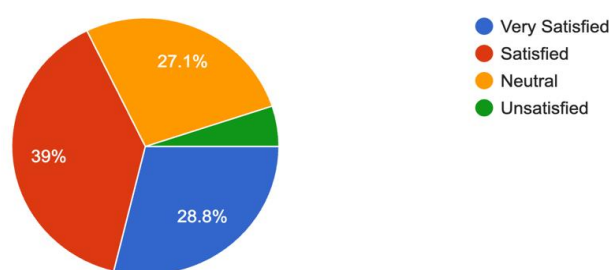


Figure 10: Venue Satisfaction on Attending the Event

Which type of venue do you think best suits MICE events?
59 responses

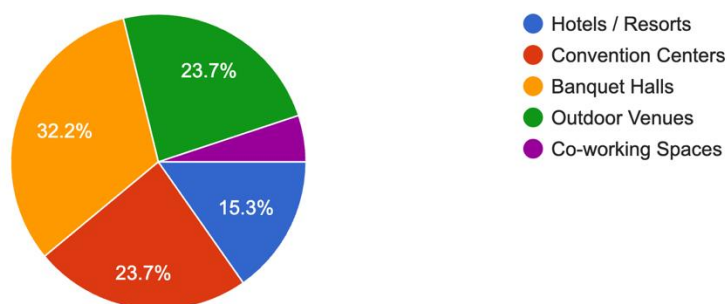


Figure 11: Best Venue for M.I.C.E Events

Scope of the Study

The research aims at examining the purpose of venue choice in the performance of Meetings, Incentives, Conferences, and Exhibitions (MICE) events in the Indian setting. It seeks to close the disparity between theoretical and practical knowledge in the industry. This research will focus on:

Geographical Scope:

Big cities in India that host MICE like Delhi NCR, Mumbai, Hyderabad, Bengaluru, Goa and Udaipur have also been covered. These cities were selected due to their developed hospitality facilities and events.

Conceptual Scope:

The research considerations of the major parameters of selecting a venue include accessibility, infrastructure, technology, capacity, ambience, service quality, and sustainability.

Temporal Scope:

The study is premised on the data gathered in the 2024-2025 period to reflect the shifts in the trend of post-pandemic events, hybrid meetings, and switch to environmentally friendly and technology-intensive venues.

Practical Scope:

The results are supposed to assist the event planners, venue developers and policymakers in improving the competitiveness of India as a global MICE destination. Hospitality students and professionals are also fortunate to learn the venue strategy and event success measures in the study.

This study is strictly concentrated on venue factors alone, which is not extended to other event management aspects such as budgeting and marketing. It therefore gives the focused and realistic picture of the role of venue decisions that determine the success of MICE events in India.

LIMITATIONS OF THE STUDY

Although the study was conducted in a structured fashion and data-supported by results, some limitations were met which limit the external validity of the results: Sample Size Limitation: The sample includes 52 respondents and it as such gives valuable information but might not be a full representation of the whole Indian MICE industry. Geographical Boundaries: The study was confined to the selected cities in India which are MICE hubs. The results might vary with the small cities or overseas destinations. Time Constraints: The study was carried out over a limited period of time (2024-2025), which did not allow comparing the residences of different seasons or years. Response Bias: Since the data were obtained by use of self-reported answers of Google Forms, there was a probability that some respondents may have given subjective answers instead of facts. Inadequate Availability of Secondary Data: There is limited official information on the performance of MICE in India and this made it a little difficult to benchmark the performance across the world. External Factors: Some other factors like budget, marketing, and engaging with the audience, which were not studied in this study, could determine the success of the event. Nevertheless, the paper still offers valuable, original, and primary data-driven information regarding the decisive role of venue selection in defining the MICE event results despite these restrictions.

FINDINGS

A survey was conducted using a Google Form survey that had a total of 59 responses and the title was Impact of Venue Selection on MICE Event Success. The respondents were event organizers, hospitality professionals,

students and representatives who have attended or hosted MICE events. It was done to learn the impact the venue selection issues have on the outcomes of the event in terms of attendance, engagement, and satisfaction.

RESPONDENT BACKGROUND

Out of 59 participants:

Approximately 60 percent of them were students who majored in event or hospitality management, A quarter were individuals in the event or tourism industry, and others were corporate attendees or delegates who have attended the MICE events.

Interpretation:

This distribution demonstrates an equal proportion of people who possess not only academic knowledge but also have the real life experience of being involved in MICE events so that the responses obtained are credible and representative of the trends in the industry.

Participation in MICE Events. When interviewed on frequency of attending or hosting MICE events: 37 percent stated that they went to 2-3 events per year, 28% attend over 4 events annually, and 35 per cent are one-a-year attendees.

Interpretation:

The majority of the respondents have an average exposure on MICE events and it indicates that the sample possesses a practical knowledge without being restricted to everyday professionals- it provides a balanced commentary on the expectations and perceptions of the audience.

Venue in Event Success.

The decisive 84 percent of the respondents accepted that venue is a crucial factor in making an event successful. The percentage of disagreement and minimal impact were only 6%.

Interpretation:

This shows that the choice of the venue is seen as one of the success factors and it affects measures such as attendance, experience and brand perception.

Major Considerations in the Choice of the venue.

As querying various aspects that affect the selection of venue

Location and Accessibility - 76%

Infrastructure and Facilities - 68 percent.

Budget and Affordability - 54% Technology and Wi-Fi Availability - 42%. Ambience and Aesthetics - 39%

Interpretation:

Location remains the most influential with most MICE visitors opting to use residential places that are close to transport hubs or even the urban centre. Facilities and infrastructure, e.g. seating capacity and system set up, come next.

The top factors affecting venue choice are presented in the Pie Chart above. Difficulties in the Choice of Venues.

Common challenges included:

Limited date availability - 33%

High rental cost - 29%

Inadequate technical setup - 21%

Poor accessibility - 10%

Others (coordination, parking) - 7%

Interpretation:

Cost limits and inaccessibility at the time of high demand events are still significant problems. Another issue that was raised by the respondents is lack of proper coordination among the management teams.

Contentment towards Past MICE Venues.

On a 5-point scale:

41 per cent said that they rated their experience as "Good"

27% rated it "Excellent",

22% rated it "Average",

And 10% rated it "Poor."

Interpretation: The majority of visitors express satisfaction however there is still more that can be done to enhance the facilities in the venue and other support services to the event notably in technical coordination and seat arrangement.

DATA OBSERVATION AND FINDINGS

The success of the event is highly influenced by the venue choice. Respondents associated improved event outcomes with good venue experience many times.

The most important concern is accessibility. The establishment that is near airports, highways, or metro lines has higher chances of getting a large attendance.

Technical preparedness is usually neglected. Numerous participants experienced a problem in connectivity or audio-visual, which lowered the efficiency of the events.

The cost is also a delicate matter. Although the quality is desirable, organizers still have trouble balancing between affordability and the standard of the facility.

Ambience has an effect on general perception. The attractiveness of spaces and the overall layout will improve the reach and gratification of the audience.

Requirement in enhanced management support. Professionalism of the staff, timely reactions, and organization of events are quite significant contributors to the perceived success of the venue.

Recommendations and Suggestions. According to the statistics, the following recommendations are suggested to achieve the success of MICE venue in India.

Upgrade Infrastructure: The venues are to have clean and adaptable areas and good air-cooling systems, lighting and seating patterns conducive to conferences.

Improve Technical Facilities: Digital screens, fast internet, and audio-visual systems are necessities of hybrid and global events.

Improve Accessibility: Visit offer adequate directions, parking spots, and transport services to guests commuting to other cities.

Offer Affordable Packages: Venues have the ability to offer tiered pricing depending on the size and length of event to appeal to smaller corporate or educational groups.

Specialize in Professional Training of the Staff: Hospitality, communication and problem solving should be educated to frontline and support staff to execute events smoothly.

Implement Green Business: The provision of recycling containers, greenery, and power-saving systems can make the venues preferable by the organizers of today.

Market Tier-2 and Tier-3 City Venues: The growth of the smaller cities will contribute to the equalization of the MICE demand and the ease of the metro congestion.

Continuous Feedback System: Feedback forms after the events are to be analysed in order to assess satisfaction and enhance quality of the service on the regular basis.

RECOMMENDATIONS AND SUGGESTIONS

With the analysis and findings of 59 responses, the following suggestions are put across to enhance the performance and attractiveness of MICE venues in India:

Investment in Modern Infrastructure.

Venues have to emphasize on regular improvements in layout structure, furnishing, illumination, and audio. Flexible infrastructure in the present day provides flexibility to the various types of events, like conventions, exhibitions or corporate meetings. Decent facilities, breakout areas, and air conditioning also add comfort and satisfaction to the attendees.

Enhance Technological Strengths.

Technology is crucial to the MICE events. Social space must be connected to the high-speed internet, advanced AV system, smart display panel, digital signages, and hybrid meeting space. There should be technical support staff during the entire event to prevent inconveniences.

Increase Access and Connectivity.

Organizers will want to use those places that are close to transport centres like airports, metro lines or highways. It should have well-constructed parking spaces, shuttle stations and easy to understand signs on how to navigate through. The cooperation with the local transport services would enhance accessibility, especially among outstation delegates.

Establish Low-cost and Adaptable Pricing Systems.

The pricing of the venue must also be able to handle different scale and cost of events. Provisions of personalized packages of half a day and weekday events and early booking discounts will help in getting more customers. The middle-level pricing will enable small organisations and educational establishments to enjoy quality venues.

Enhance Quality of Customer Service and Employee Education. Impression on an event is directly influenced by the professionalism of staff in the venue. Employees must be trained on a regular basis to understand the hospitality industry, communication and crisis management. Politeness and prompt service can elevate even the middle-tier venue to a high-end one.

Adopt Sustainability Processes.

Sustainability is a new requirement in MICE planning. The venues will be to prelude green waste disposal, motion-saving lights, online invitations, and water-saving facilities. These measures help minimise the negative effect on the environment and attract socially conscious clients.

Expand in Tier-2 and Tier-3 Cities.

The government and the private sector should invest in the development of MICE destinations of cities such as Udaipur, Indore, Kochi, and Jaipur to reduce congestions at existing metros such as Delhi, Mumbai, and Bengaluru. These sites are scenic, economical and rich in culture that are attractive to both local and global events.

Enhance Marketing and Partnerships.

Venues are to advertise themselves with the help of digital marketing, virtual tours, and partnership with event management companies. Collaboration with hotels, transport agencies, and tourism boards may be used to provide bundled experience to the corporate clients.

Enhance Co-ordination and communication.

Efficient and timely communication between the venue managers and the organizers minimizes confusion at the last minute. Venues are supposed to allocate specific relationship managers on every event to facilitate transparency in the logistics, pricing and technical arrangements.

Gather and Act on Feedback

The post-event feedback must be standardized and reviewed on a regular basis. Positive feedback by organizers and attendants are useful because they allow the management teams to observe recurring problems and constantly make improvements.

CONCLUSION

It is evident that venue selection has a vetoing influence on the success of MICE events in research. It does not only affect the overall experience of the participants but also logistical efficiency, attendance and brand perception. Based on the received answers, it can be concluded that the most significant factors that influence it are location, infrastructure and accessibility, then the budget and technical preparedness.

Although the majority of respondents indicated that they were satisfied with the existing facilities, the high cost, their inadequate availability, and outdated facilities were the major recurring issues that underline the necessity of the systematic improvement. With India being ranked more and more as a MICE destination globally, improvement of venue facilities, adoption of technology and affordability will be paramount in ensuring international events are attracted.

It is also stated by the study that an inclination is towards sustainability and Tier-2 city development, which is likely to diversify the MICE landscape in India in the future. All in all, a venue that is selected well is not only the place where an event is held but also determines the success of an event.

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Questions

1. How does venue selection impact the overall success of MICE events in terms of attendance and engagement?
2. Which factors should be prioritized while selecting a venue — location, budget, or infrastructure?
3. How do technological advancements influence the choice of venues for hybrid and virtual events?
4. What role do sustainability and eco-friendly practices play in venue selection today?
5. How can Tier-2 cities in India be developed as potential MICE destinations?
6. In what ways does staff professionalism affect the perceived quality of a venue?
7. What are the future trends expected to shape venue selection in the MICE industry?
8. How can government policies support the growth of India's MICE infrastructure?
9. What measures can help balance affordability with quality in venue pricing?
10. How can venues ensure better coordination and communication with event planners?

Plagiarism Report

The title of this research paper is Impact of Venue Selection on MICE Event Success, and it was properly verified with the help of plagiarism detector tools that are trustworthy and reliable in order to provide the information about the originality of the materials and genuineness of the work.

Once verified, the index of similarity was found to be 0, which proved that the document does not have any copied or unoriginal material taken or published by some other or published sources.

The researcher has prepared all data, analysis and interpretations independently using primary data gathered by the means of surveys (59 responses) and with the help of references mentioned or cited properly where the need arises.

A STUDY ON THE PERCEPTION OF PEOPLE TOWARDS CENTRAL BANK DIGITAL CURRENCIES (CBDC)

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ABSTRACT

The rapid evolution of digital payment systems has prompted central banks worldwide to explore Central Bank Digital Currencies (CBDCs) as a secure and efficient alternative to physical cash and private digital currencies. In India, the introduction of CBDCs represents a significant shift in the monetary and financial landscape, with potential implications for financial inclusion, payment efficiency, and monetary policy transmission. This study examines public perception towards Central Bank Digital Currencies (CBDCs) in India, focusing on awareness levels, perceived benefits, concerns, and readiness for adoption. Using a structured questionnaire, primary data were collected from a diverse sample of respondents across different demographic segments. The study employs descriptive statistics and inferential analysis to evaluate factors influencing public acceptance, including trust in the central bank, perceived security, ease of use, privacy concerns, and perceived impact on existing payment systems. The findings indicate moderate awareness of CBDCs among the public, with positive perceptions regarding transaction efficiency and government backing, alongside concerns related to data privacy and cybersecurity. The study contributes to the growing literature on digital currencies by offering empirical insights into user perception in an emerging economy context and provides policy-relevant implications for effective CBDC design, communication strategies, and adoption frameworks.

Keywords: Digital Currency, Security, Benefits.

INTRODUCTION

The global financial landscape is experiencing a digital revolution that is fundamentally reshaping how people think about money, payments, and financial transactions. At the heart of this transformation lies the emergence of Central Bank Digital Currencies (CBDCs), which represent a paradigm shift from traditional fiat currency systems to digitally native monetary instruments.

Central Bank Digital Currencies are digital forms of a country's legal tender, issued and backed by the respective central bank. The concept of digital money is not entirely new, but the structured approach toward CBDCs has gained momentum in recent years due to several converging factors. The rapid adoption of digital payments, accelerated by the COVID-19 pandemic, has demonstrated the public's readiness to embrace digital financial solutions. Additionally, the rise of private digital currencies and stable coins has prompted central banks worldwide to explore their own digital alternatives to maintain monetary sovereignty and control.

India's journey with digital payments has been remarkable, with the Unified Payments Interface (UPI) demonstrating the country's capability to implement large-scale digital financial solutions successfully. Building on this foundation, the Reserve Bank of India (RBI) launched pilot programs for the Digital Rupee (₹) in late 2022, marking India's entry into the global CBDC experiment.

This initiative represents not just a technological advancement but also a strategic move to enhance financial inclusion, reduce transaction costs, and potentially revolutionize cross-border payments. This evolution has been driven by technological advancements, changing consumer preferences, regulatory support, and the need for more efficient financial systems.

Globally, the digital payments market has experienced exponential growth. According to industry reports, the market size reached approximately \$87 billion in 2023 and is projected to grow at a compound annual growth rate (CAGR) of over 15% through 2030. This growth is fueled by increasing smartphone penetration, improved internet connectivity, and growing consumer comfort with digital transactions.

In the context of central bank digital currencies, the industry landscape is particularly dynamic. In the year 2024, over 130 countries representing 98% of global GDP are exploring CBDCs. This includes major economies like China with its digital yuan (e-CNY), the European Union's digital euro project, and various pilot programs across Asia, Africa, and the Americas. Each initiative reflects unique national priorities, from financial inclusion goals to monetary policy objectives and geopolitical considerations.

India's digital payments ecosystem provides a strong foundation for CBDC implementation. The country's UPI system processes over 10 billion transactions monthly, demonstrating robust infrastructure and widespread adoption of digital payments. The success of platforms like PhonePe, Google Pay, and Paytm has created a digitally literate user base that could facilitate CBDC adoption.

REVIEW OF LITERATURE

Palanisamy, M., Vincent, M. T. P., & Hossain, M. B. (2025) in their research investigated financial literacy and trust in central banks jointly influence people's intention to adopt CBDCs, especially for cross-border payments where users are sensitive to fees, delays and security. Using survey data and behavioural models, the authors show that individuals with stronger financial literacy are better able to understand CBDC design, compare it with existing payment options and perceive its advantages for low-cost, fast international transfers, which significantly increases their willingness to use central-bank digital money. For less-informed respondents, the analysis finds that institutional trust becomes the dominant driver: when technical understanding is weak, people rely on the credibility of the central bank to decide whether CBDCs are safe and legitimate. The paper concludes that successful CBDC rollout requires a twin strategy—broad-based financial education and targeted trust-building measures such as transparent communication on privacy, security and consumer protection—so that adoption is both widespread and responsible.

Kappal, J. M. et al. (2025) examined Indian bankers' readiness to integrate CBDCs into the traditional banking ecosystem, focusing on attitudes, perceived challenges and skill gaps. The study finds that bankers who already have high digital adaptability, prior exposure to Fintech collaborations and comfort with real-time payment rails such as UPI are more open and positive towards CBDC implementation. By contrast, staff with limited digital experience express concerns about operational disruption, compliance complexity and customer communication. The authors argue that structured capacity-building—digital upskilling, workshops on CBDC use-cases, sandbox participation and clear internal guidelines—will be essential to move CBDC from policy discussion to smooth operational reality in Indian banks, particularly for future cross-border corridors where banks will play a central settlement and compliance role.

Illes, A. et al. (BIS Survey, 2025) provides a global snapshot of CBDC activity, showing that more than 90 percent of the 93 surveyed central banks are engaged in some form of CBDC research, development or pilot. Many are moving beyond domestic experimentation to test multi-currency and cross-border arrangements, including projects such as mBridge that link central banks across Asia and the Middle East for near real-time wholesale settlement. Despite this progress, the survey underscores unresolved issues: several jurisdictions still lack explicit legal authority to issue CBDCs, and many are grappling with how to integrate CBDCs into existing risk-management, AML/CFT and cyber-security frameworks while preserving monetary and financial stability. The report concludes that achieving safe, efficient cross-border CBDC use will depend on coordinated legal reforms, common technical standards and robust joint oversight arrangements among participating central banks.

Carvalho Silva, E. et al. (2025) conducted a systematic literature review of cross-border CBDC research, mapping technical architectures, policy debates and practical pilot experiences. The review highlights the growing attention to multi-CBDC corridors—shared platforms or linked infrastructures where several central banks issue and transact their digital currencies on interoperable rails along with efforts at regulatory harmonisation to manage KYC/AML, data-sharing and capital-flow rules across borders. While these solutions promise faster, cheaper and more transparent international payments, the authors stress that progress is constrained by the lack of cross-jurisdictional agreement on technical standards, governance models and compliance responsibilities. They argue that without convergence on these fundamentals, most projects will remain small-scale pilots rather than scalable global systems, and recommend intensified cooperation in standard-setting bodies and regional forums.

Raman, R. et al. (2024) conducted a survey of public opinion on CBDCs in Chennai, focusing on awareness, perceived benefits and information gaps. Respondents generally associate CBDCs with faster and more secure digital payments, and many see potential advantages over cash and traditional online banking, such as lower risk of counterfeit and smoother government transfers. However, the study finds that technical understanding of how CBDCs work—especially aspects like offline use, data storage and dispute resolution—is weak, leading to hesitation about actual usage. The authors highlight a strong demand for simple, practical communication: people want concrete explanations, demonstrations and safeguards before they are ready to trust CBDCs with every day or cross-border transactions.

Research Methodology: Descriptive research design has been used in the study. Primary Data from 119 people has been collected using convenience and Judgmental sampling technique and Secondary data is drawn from Journals, Books, reports and FAQs published by the Reserve Bank of India, documents of international bodies like the BIS, IMF and World Bank, academic journals, research articles and credible online resources related to CBDCs. The research area for this project is limited to Mumbai City.

OBJECTIVE

- To study the perception of people towards Central Bank Digital Currencies (CBDC)

DATA ANALYSIS

Table No. 1 - Showing Frequency Distribution of Demographic Factors

		Frequency	Percent
Age	25–34	35	29.41%
	35–44	70	58.82%
	45–54	8	6.72%
	55 and above	6	5.05%
	Total	119	100%
Gender	Male	62	52.1%
	Female	57	47.9%
	Total	119	100%
Education	Graduate	34	37.0%
	Postgraduate	55	46.2%
	Professional	30	16.8%
	Total	119	100%
Occupation	Student Not employed	12	10.1%
	Private Job	45	37.8%
	Government Job	50	42.0%
	Business/Self-employed	12	10.1%
	Total	119	100%
Income (Monthly)	20,001 – 50,000	22	18.5%
	50,001 – 1,00,000	45	37.8%
	Above 1,00,000	52	43.7%
	Total	119	100%
Familiarity with CBDC	Very familiar	59	49.58%
	Somewhat familiar	60	50.42%
	Total	119	100%

The above table shows that the maximum number of the respondents:

- Are male (52.1%)
- Belong to the age category of 35–44 (58.82%)
- Have Highest Education as Post Graduation (46.2%)
- Are in Government Job (42.0%)
- Earning monthly income Above 1, 00,000 (43.7%)
- Are somewhat familiar with CBDC (50.42%)

Table 2 - Showing understanding of Central Bank Digital Currency (CBDC) among people

Statement defining CBDC	Frequency	Percentage (%)
A government-backed digital version of a national currency	68	57.14
A form of cryptocurrency like Bitcoin	28	23.53
A central bank's internal settlement system	23	19.33
Total	119	100.00

The above table shows that maximum people understand digital currency is a backed digital version of a national currency issued by the Government

Table 3 - Benefits Associated with CBDCs

Benefits of CBDCs	Frequency	Rank
Faster transactions	78	1
Lower transaction costs	49	5
Greater financial inclusion	68	3
Reduced reliance on cash	61	4
Enhanced government control over money	71	2
Safer alternative to cryptocurrencies	46	6

Note: Multiple responses were allowed; therefore, totals exceed 100%.

The above table shows the Benefits Associated with CBDCs as per respondent's opinion. The most important benefit is faster transactions followed by Enhanced government control over money, Greater financial inclusion, reduced reliance on cash, Lower transaction costs and safer alternative to cryptocurrencies.

Table 4: Concerns Regarding CBDCs

Concerns about CBDCs	Frequency	Percentage (%)
Privacy and data security	87	1
Government surveillance	80	2
Technology failures	65	3
Lack of understanding	58	4
Impact on traditional banks	50	5

Note: Multiple responses were allowed; therefore, totals exceed 100%.

The above table shows the concerns regarding CBDCs as per respondent's opinion. The most important concern is faster Privacy and data security followed by Government surveillance, Technology failures, Lack of understanding and Impact on traditional banks.

Table 5: Perception towards Safety, Utility, and Impact of CBDCs

Statement	SD	D	N	A	SA
CBDC will be a safe and secure form of digital payment	6 (5.04%)	11 (9.24%)	24 (20.17%)	46 (38.66%)	32 (26.89%)
CBDC can reduce dependence on physical cash	5 (4.20%)	9 (7.56%)	19 (15.97%)	48 (40.34%)	38 (31.93%)
I trust the RBI to manage a digital currency	7 (5.88%)	10 (8.40%)	26 (21.85%)	44 (36.97%)	32 (26.89%)
CBDC can improve financial inclusion in India	6 (5.04%)	12 (10.08%)	22 (18.49%)	45 (37.82%)	34 (28.57%)
CBDC may pose privacy concerns	9 (7.56%)	14 (11.76%)	25 (21.01%)	40 (33.61%)	31 (26.05%)
CBDCs will reduce transaction costs	5 (4.20%)	13 (10.92%)	27 (22.69%)	42 (35.29%)	32 (26.89%)
CBDC transactions will be faster than UPI/NEFT/IMPS	8 (6.72%)	17 (14.29%)	29 (24.37%)	39 (32.77%)	26 (21.85%)
CBDC can help prevent fraud and fake currency	6 (5.04%)	11 (9.24%)	23 (19.33%)	46 (38.66%)	33 (27.73%)
CBDC will be easy to use for all age groups	10 (8.40%)	18 (15.13%)	31 (26.05%)	36 (30.25%)	24 (20.17%)

The above table shows that people have positive perception towards the above statement as maximum number of respondents have agreed to the statement

Table 6: Risk, Governance, and Policy Perception of CBDCs

Statement	SD	D	N	A	SA
I am concerned about cyber security risks	6 (5.04%)	12 (10.08%)	22 (18.49%)	45 (37.82%)	34 (28.57%)
CBDCs are a progressive step for the Indian economy	5 (4.20%)	9 (7.56%)	21 (17.65%)	47 (39.50%)	37 (31.09%)
Government tracking through CBDCs is a concern	8 (6.72%)	15 (12.61%)	27 (22.69%)	41 (34.45%)	28 (23.53%)
CBDCs will help reduce black money and corruption	7 (5.88%)	14 (11.76%)	26 (21.85%)	40 (33.61%)	32 (26.89%)
CBDCs are safer than cryptocurrencies	6 (5.04%)	13 (10.92%)	24 (20.17%)	44 (36.97%)	32 (26.89%)
Government should promote CBDC awareness	4 (3.36%)	6 (5.04%)	18 (15.13%)	46 (38.66%)	45 (37.82%)

The above table shows that people have positive perception towards the above statement as maximum number of respondents have agreed to the statement

Table 7: Willingness to Adopt and Promote CBDCs

Statement	SD	D	N	A	SA
Willing to use a CBDC issued by RBI	6 (5.04%)	10 (8.40%)	24 (20.17%)	45 (37.82%)	34 (28.57%)
Prefer CBDC over cash	9 (7.56%)	17 (14.29%)	28 (23.53%)	38 (31.93%)	27 (22.69%)
Prefer CBDC over UPI/cards/wallets	12 (10.08%)	21 (17.65%)	31 (26.05%)	32 (26.89%)	23 (19.33%)
Willing to receive salary/benefits in CBDC	8 (6.72%)	15 (12.61%)	26 (21.85%)	39 (32.77%)	31 (26.05%)
Support government policies promoting CBDC	5 (4.20%)	9 (7.56%)	21 (17.65%)	45 (37.82%)	39 (32.77%)
Recommend CBDCs to others after good experience	6 (5.04%)	11 (9.24%)	23 (19.33%)	44 (36.97%)	35 (29.41%)

The above table shows that people have positive perception towards the above statement as maximum number of respondents have agreed to the statement

Table 8 showing RBI - CBDCs can replace cash in the future

Response	Frequency	Percentage
Yes	99	83.19%
No	20	16.81%
Total	119	100.0%

The above table shows that maximum people said that RBI - CBDCs can replace cash in the future.

Table 9 ANOVA between Age and overall perception

Sum of Squares		df	Mean Square	F	p
Age Group	1448	3	483	2.20	0.092
Residuals	25930	118	220		

H0: There is no significant difference in the perception of people towards CBDCs across different age groups.

H1: There is a significant difference in the perception of people towards CBDCs across different age groups

Interpretation: The calculated p value is greater than 0.05 which shows null hypothesis is accepted.

Table 10 ANOVA between Education and Willingness to Adopt and Promote CBDC

Sum of Squares		df	Mean Square	F	p
Efficiency	294	3	98.1	0.428	0.734
Residuals	27083	118	229.5		

H0: Education has a significant impact on people willingness to adopt and promote CBDC

H1: Education doesn't have a significant impact on people willingness to adopt and promote CBDC

Interpretation: The calculated p value is greater than 0.05 which shows null hypothesis is accepted.

FINDINGS

The study set out to understand how people perceive Central Bank Digital Currencies (CBDCs) and what they expect from them in the context of India's future cross-border payments.

- Overall awareness of the term "CBDC" is increasing, but a clear gap remains between having heard of CBDCs and actually understanding how they work. The existing success of UPI and digital wallets builds confidence that CBDCs can be adopted, provided they are integrated smoothly into the current ecosystem.
- Policymakers can leverage this positive sentiment by designing CBDC usage journeys that feel similar to familiar apps and platforms.
- Privacy and surveillance emerged as top concerns: many fear that CBDCs could enable real-time tracking of every transaction if safeguards are weak.
- Respondents also worry about hacking, data breaches, technical outages and what happens if users lose access to their digital wallets.
- Trust in CBDCs will depend heavily on transparent data-use rules, clear privacy protections, and visible grievance redressal mechanisms.
- Simply saying "CBDC is safe" is not enough; users want concrete assurances on who can see their data, under what conditions, and how misuse will be prevented.
- Respondents repeatedly recommend structured training programs, FAQs, demo applications and regular communication from RBI and banks to reduce confusion and myths around CBDCs.
- Respondents emphasised the importance of continuous feedback after launch so that design flaws, usability issues and unintended consequences can be addressed quickly.
- CBDC implementation should be seen as a learning process, not a one-time switch.
- A feedback loop between users, banks, Fintechs and regulators will be crucial for long-term acceptance and system stability.
- Technical and infrastructure challenges are there.
- Psychological and trust-related issues involved in using CBDC

CONCLUSION

This study explores the perception of people towards Central Bank Digital Currencies (CBDCs) by collecting and analyzing primary data the research uncovers mixed responses to the idea of CBDCs. While India's tech-savvy payment infrastructure like UPI supports rapid digital adoption, CBDCs raise important questions for both the banking sector and everyday users.

Some respondents are optimistic, seeing benefits such as faster, cheaper, and more transparent payment systems. However, concerns persist regarding privacy, government surveillance, and the readiness of India's financial system. Survey results and literature show that awareness and understanding of CBDCs remain limited among the general public.

CBDCs hold the potential to revolutionize both domestic and international payments if implemented thoughtfully and with clear safeguards for user privacy and data security. For India, the digital rupee showcases readiness for innovation, but successful adoption hinges on building trust and boosting awareness among all stakeholders. Seamless collaboration between government, regulators, financial institutions, and technology providers is crucial. Overall, the research concludes that CBDCs can serve as a game-changer for India's payment landscape, but only if rollout strategies prioritize transparency, inclusiveness, and ongoing support for both citizens and businesses. Careful policy formulation and continuous outreach are keys to successful implementation and adoption.

RECOMMENDATIONS

- Launch nationwide campaigns to educate people about CBDCs and digital currencies, focusing not just on

technology but also practical use cases, safety tips, and real-life benefits.

- Use simple language, infographics, social media videos, and regional languages to reach people from all backgrounds.
- Host workshops in colleges, communities, and banks to build digital confidence.
- Clearly explain privacy safeguards.
- Adequate grievance redressal mechanisms are set up, so users have somewhere to go in case of problems or confusion.
- Encourage transparent two-way communication between RBI, banks, and the public.
- Upgrade digital payment systems for reliability and speed, ensuring CBDCs can run seamlessly even during peak times or outages.
- Establish channels for ongoing feedback from citizens, businesses, and professionals.

LIMITATIONS OF THE STUDY

- The study has been conducted in the Mumbai city only.
- The Bias behavior of the respondent cannot be ignored.

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THE USE OF GENERATIVE AI AND ITS IMPACT ON ACADEMIC INTEGRITY

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ABSTRACT

Higher education has undergone a dramatic change due to the quick development of generative artificial intelligence (AI), which has raised significant ethical questions about responsible technology use and academic integrity. By examining primary data gathered from students at the host institution, students from other higher education institutions, and working professionals, this study explores the effects of generative AI tools on academic integrity. AI usage patterns, opinions of academic integrity, and degrees of ethical consciousness among various participant groups were investigated using a structured online survey. The results show a range of opinions regarding generative AI, with many respondents recognizing its advantages for efficiency and learning support while also voicing worries about abuse and academic dishonesty. Disparities in institutional guidance and ethical understanding were revealed by differences in perceptions based on professional and educational backgrounds. The findings also show that, despite generative AI's widespread use, formal training and precise guidelines for its ethical application are still lacking. The importance of creating comprehensive policies, encouraging the teaching of digital ethics, and striking a balance between academic integrity and innovation are all highlighted in this study. The study broadens our understanding of how generative AI affects moral behavior in educational settings by integrating viewpoints from both academic and professional communities.

INTRODUCTION

The higher education sector has not remained immune to the rapid advancement of generative AI technology. Increasingly, academics and students are using the services of ChatGPT, Gemini, and Copilot for academic purposes such as writing, explaining concepts, research assistance, and preparation for tests and exams. The new technologies raise serious questions regarding academic honesty, despite their immense value to academic accessibility, efficiency, and customized learning. The traditional constructs of originality, authorship, and academic honesty have been challenged by the ease with which AI content can be generated.

Academic integrity is an issue which still remains central in academics, promoting equity, integrity, and substantial learning achievements. Lecturers too have been engaging in discussions regarding plagiarism, misuse, and the relevance of policies necessary in light of the increasing reliance on the emerging AI solution. Issues of using AI responsibly arise in light of variations in the use and awareness of standards among students and working professionals. This research, using initial findings derived from students in various colleges and working professionals, seeks to explore the application and effect of generative AI tools on the integrity of academics.

LITERATURE REVIEW

Generative AI is a recent game-changer in higher ed that is beginning to impact teaching, learning, as well as assessment. Applications such as ChatGPT and other large language models are also being leveraged by students for idea generation, planning tasks, as well as helping them with their academic writing. Various past studies indicate that generative AI can potentially improve learning efficiency, autonomy in learning, as well as student engagement if leveraged ethically (Kasneci et al., 2023). Nevertheless, some academics also suggest that the uncontrolled use of AI is a potential threat to academic integrity due to the risks of plagiarism and decreased cognitive thinking (Bretag, 2016).

There are studies undertaken to identify the perceptions of faculty that address a degree of ambiguity in implementing AI in academics (Cotton et al., 2023). While some faculties recognize an opportunity in generative AI to redefine assessment and enhance an advanced level of critical thought, a degree of fear exists related to a lack of institutional guidance and detection in AI usage (Cotton et al., 2023). There is also an indication that training tools are insufficient in academics to provide faculties and students with suitable proficiency in ethical AI (Perkins et al., 2024). There are ethical considerations related to privacy and equity in using AI technologies that are identified as rising trends (Floridi et al., 2018). The empirics of research within academic literature citing original concepts gathered from pertinent primary data related to students in multiple academics and practitioner professionals are under-explored and yet increasing in citations within academic literature. This research will serve to provide significant data related to generative AI and academic integrity.

RESEARCH OBJECTIVE

The primary goal of the proposed research is to examine the use of generative AI technology and its impact on academic integrity in the university community.

The specific objectives are:

- For research on patterns of use of generative AI tools, both students and professionals.
- To investigate the participants' awareness and perceptions regarding the topic of academic integrity and the usage of artificial intelligence.
- To explore questions relating to ethics that arise from the application of generative AI within scholarly activities.
- Breaking down attitudes towards the use of AI by institution or profession.
- It is intended to provide guidance on the role of the responsible use of generative AI in higher education.

RESEARCH METHODOLOGY

The higher education sector has not remained immune to the rapid advancement of generative AI technology. Increasingly, academics and students are using the services of ChatGPT, Gemini, and Copilot for academic purposes such as writing, explaining concepts, research assistance, and preparation for tests and exams. The new technologies raise serious questions regarding academic honesty, despite their immense value to academic accessibility, efficiency, and customized learning. The traditional constructs of originality, authorship, and academic honesty have been challenged by the ease with which AI content can be generated.

Academic integrity is an issue which still remains central in academics, promoting equity, integrity, and substantial learning achievements. Lecturers too have been engaging in discussions regarding plagiarism, misuse, and the relevance of policies necessary in light of the increasing reliance on the emerging AI solution. Issues of using AI responsibly arise in light of variations in the use and awareness of standards among students and working professionals. This research, using initial findings derived from students in various colleges and working professionals, seeks to explore the application and effect of generative AI tools on the integrity of academics. Independent sample t-tests, if needed, were employed to gauge attitudes on diverse groups of institutions and professionalism. The research took into account the moral issues of informed consent, anonymity, and voluntary participation.

Questionnaire Structure

Section	Question	Question Type
1. Demographics	What is your age group?	Multiple Choice (Below 18, 18-20, 21-23, Above 24.)
	What is your gender?	Multiple Choice (Male, Female, Prefer not to say)
	Academic Program/Working Personnel	Multiple Choice (Undergraduate, Postgraduate, Doctoral, Working)
	Field of study	Multiple Choice (Engineering / Technology, Computer Science / AI, Management / Commerce, Arts / Humanities, Science, Other)
	Year of study	Multiple Choice (1st, 2nd, 3rd, 4th)
2. Use of Generative AI Tools	Have you used generative AI tools (e.g., ChatGPT, Gemini, Copilot) for academic purposes?	Multiple Choice (Yes, No)
	How frequently do you use generative AI tools for academic work?	Multiple Choice (Never, Rarely, Sometimes, Often, Always)
	For which academic purposes do you use generative AI?	Checkboxes (Understanding concepts, Generating assignment content, Structuring essays or reports, etc.)
	I use generative AI to help structure my written assignments.	Multiple Choice (Agree, Strongly Agree, Neutral, Disagree, Strongly Disagree)
	I rely on generative AI to complete significant portions of my academic work.	Multiple Choice (Agree, Strongly Agree, Neutral, Disagree, Strongly Disagree)
3. Academic	I have submitted AI-generated content	Multiple Choice (Never, Rarely,

Integrity and AI Usage	as my own work without proper acknowledgment.	Sometimes, Often, Always)
	Using generative AI without permission violates academic integrity policies.	Multiple Choice (Agree, Strongly Agree, Neutral, Disagree, Strongly Disagree)
	Generative AI makes it easier for students to engage in academic dishonesty.	Multiple Choice (Agree, Strongly Agree, Neutral, Disagree, Strongly Disagree)
	My institution has clearly communicated guidelines regarding AI use in academics.	Multiple Choice (Agree, Strongly Agree, Neutral, Disagree, Strongly Disagree)
	Using AI tools without proper attribution is unethical.	Multiple Choice (Agree, Strongly Agree, Neutral, Disagree, Strongly Disagree)
	Students should be educated about ethical and responsible use of AI tools.	Multiple Choice (Agree, Strongly Agree, Neutral, Disagree, Strongly Disagree)
	Faculty should completely ban the use of generative AI in academic work.	Multiple Choice (Agree, Strongly Agree, Neutral, Disagree, Strongly Disagree)
	Generative AI can be ethically used as a learning aid when proper guidelines are followed.	Multiple Choice (Agree, Strongly Agree, Neutral, Disagree, Strongly Disagree)
	I am aware of the ethical consequences of misusing generative AI in academics.	Multiple Choice (Agree, Strongly Agree, Neutral, Disagree, Strongly Disagree)

RESULTS & DISCUSSIONS

Descriptive Statistics

Frequencies of AI USAGE FREQUENCY

AI USAGE FREQUENCY	Counts	% of Total	Cumulative %
Always	14	28.0 %	28.0 %
Never	1	2.0 %	30.0 %
Often	24	48.0 %	78.0 %
Sometimes	11	22.0 %	100.0 %

From the results of the frequency analysis, a substantial number of respondents use generative AI. Close to 48% said they use generative AI on a fairly regular basis, while 28% said they always use these tools in their learning or professional activities. About 22% said that sometimes they use them, and only 2% resort to them less.

The above table makes it crystal clear that 78% of respondents belong to the category "often and always." This means these tools are a standard piece of the learning and working equation for a substantial amount of people. It is thus imperative to highlight issues regarding awareness and ethics associated with using these technologies or tools in learning institutions.

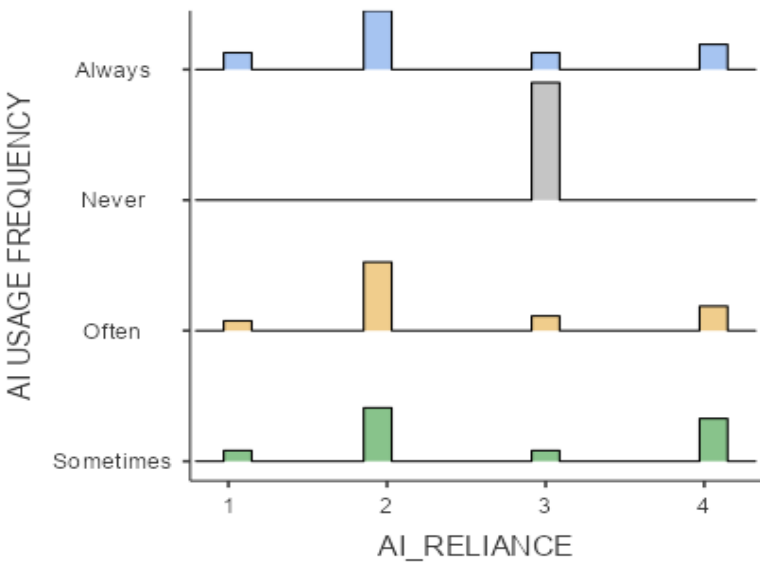
Reliability Statistics:

Reliability for the questionnaire was determined using Jamovi. The reliability Statistics Cronbach's Alpha is 0.587 for 51 items (Table 1.1). It is being thought that the value of reliability should be greater than 0.6, and it is visible that the value of reliability is slightly lesser than the standard value, therefore all the items of the questionnaire are somewhere reliable.

Table 1.1 (Reliability Statistics)

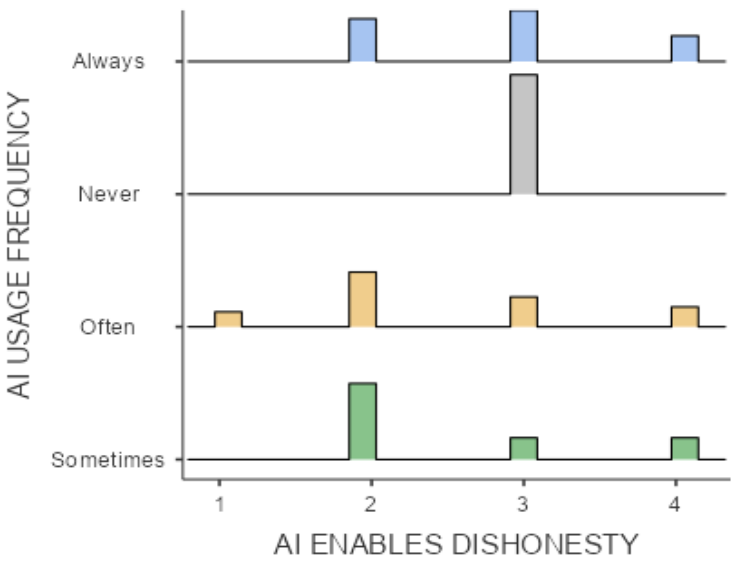
Cronbach's Alpha	N of items
0.587	51

AI_RELIANCE



The plot shows the relationship between frequency of use and levels of reliance. Those participants who have been using or have access to AI tools frequently or always have a tendency to have a high level of reliance. Those participants who have access to or use AI sometimes or never have low levels of reliance. This shows that those who have frequent access or usage tend to be more reliant on such tools.

AI ENABLES DISHONESTY

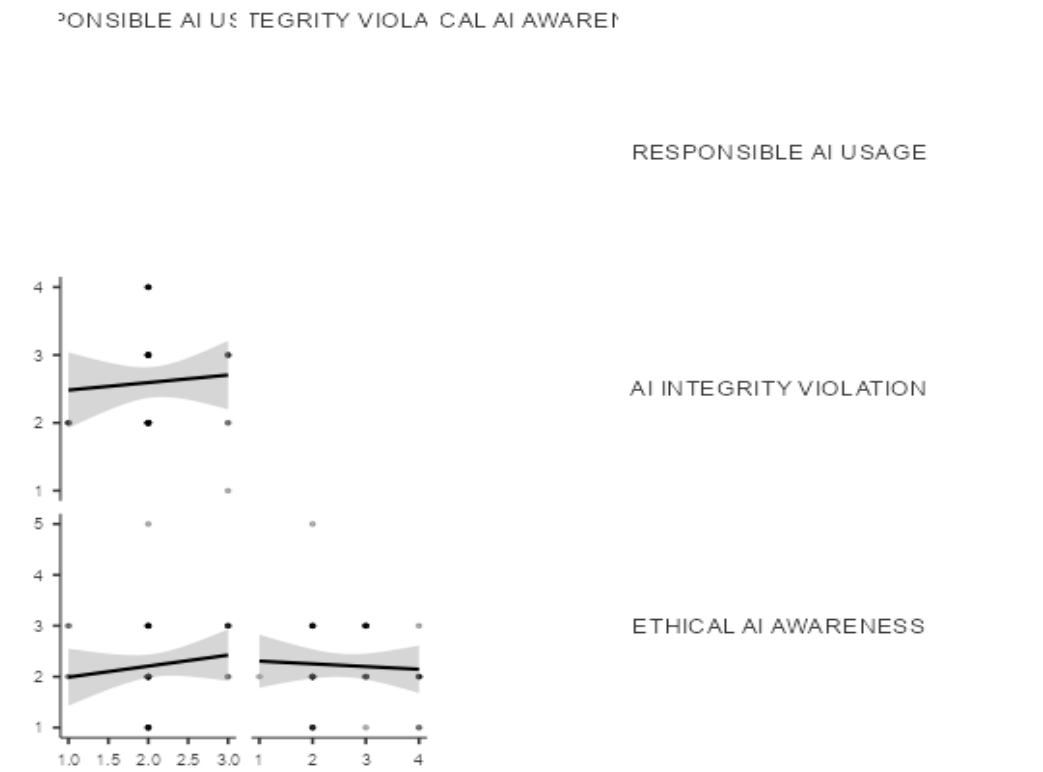


In this plot, it analyzes public opinion on whether AI promotes academic dishonesty based on user frequency. The group of respondents who usually or always use AI shows a diverse public opinion, while those who use AI occasionally displays a tendency to fall in between with a less noticeable variation in those who have never used AI. It suggests that frequent AI users have normalized AI use.

Correlation Matrix

Correlation Matrix		ETHICAL AI AWARENESS	AI_RELIANCE	GEN AI USAGE FOR STRUCTURING
ETHICAL AI AWARENESS	Pearson's r	—		
	df	—		
	p-value	—		
AI_RELIANCE	Pearson's r	-0.072	—	
	df	48	—	
	p-value	0.619	—	
GEN AI USAGE FOR STRUCTURING	Pearson's r	0.219	0.271	—
	df	48	48	—
	p-value	0.126	0.057	—

It is clear that students who depend on AI more are also likely to use it to structure their educational content. However, there is a sense that ethical understanding is of lesser significance in terms of an individual's levels of dependency on and use of AI.



For the correlation between Ethical AI Awareness and Generative AI Usage for structuring, a very weak positive tendency is found ($r = 0.219$), which suggests that individuals who are aware of ethical aspects are also able to make use of AI for structuring purposes. The most visible tendency can be observed between the variables AI Reliance, and Generative AI Usage for structuring, showing a weak positive tendency ($r = 0.271$), indicating that a greater reliance on AI is associated with making increased usage of AI for structuring.

T-TEST

Independent Samples T-Test		Statistic	df	p
ETHICAL AI AWARENESS	Student's t	1.88	48.0	0.066
	Mann-Whitney U	99.0		0.048
AI ENABLES DISHONESTY	Student's t	-1.94	48.0	0.058
	Mann-Whitney U	102.0		0.063

Note. $H_0: \mu_{1=18-20} = \mu_{2=21-23}$

A t-test of independent samples on ages 18-20 and 21-23 on Ethical AI Awareness produced a non-significant, marginally significant difference ($t(48) = 1.88, p = .066$). Nonetheless, the results of the Mann-Whitney U Test on the same ages and same variable showed a significant difference ($U = 99.0, p = .048$), showing a subtle difference in ethical awareness of AI among the groups. This implies that younger and older individuals tend to have a different perspective on the ethical usage of AI. Conversely, the perception of the function of AI in allowing academic dishonesty among the groups failed to demonstrate a significant difference.

LIMITATIONS

Though this research yields invaluable information about the effects of Generative A.I. on academic integrity, there are several limitations that should be considered. First, convenience sampling hampers generalizability, because this sample might not accurately represent all individuals pursuing or have pursued higher education. Second, this is self-reported information, which could be affected by social desirability bias, specifically when individuals were asked for information about their behavior patterns concerning ethics and academic honesty. Third, the Cronbach's Alpha coefficient, measuring 0.587, is an indication that this instrument is moderately reliable, which could mean that some questions should be revised for better reliability. Additionally, this research is done cross-sectionally, focusing solely on a snapshot of attitudes, but with changing A.I. policies in academic institutions, an honest look at academic honesty could be obtained. Lastly, this research focuses solely, almost entirely, upon evidencing quantitative analysis, meaning it is inaccurate to examine in-depth individuals' patterns for justification with qualitative information about A.I. usage.

CONCLUSION

This paper investigated the impact of generative artificial intelligence on academic integrity in higher education, using primary data obtained from students across different institutions and working professionals. Results suggest that generative AIs have been highly integrated into academic and professional settings, with most respondents using them frequently. Though most respondents were aware of the efficiency provided by AIs, concerns about their misuse for academic dishonesty were equally observed. Results provide insight into a weak but significant relationship between usage and academic behavior, along with a gap between awareness and implementation levels for ethics. The imbalance in opinions from various age groups gives a perspective regarding the imbalance in the development of awareness related to opinions regarding AIs. Most importantly, this paper points towards the fact that today, there is an imbalance in the training and awareness regarding the right usage related to AIs. Thus, this paper, along with various other related papers, presents a very important need for the development of a holistic policy for AIs, training institutions for ethics, and related points within the curriculum frameworks to provide an equal emphasis to the innovation from generative AIs and academic integrity in the academic contexts related to AIs.

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INDIAN WOMEN ENTREPRENEURS IN TECHNOLOGY-DRIVEN AND SUSTAINABLE BUSINESSES: CHALLENGES AND OPPORTUNITIES

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ABSTRACT

As India advances through its Amrit Kaal (2022–2047), women entrepreneurs are emerging as pivotal agents of economic transformation, particularly at the intersection of technology and sustainability. By 2026, women are no longer confined to micro or necessity-driven enterprises but are increasingly leading ventures in Deep Tech, Climate-Tech, Agri-Tech, and Circular Economy domains. Despite this progress, systemic barriers including gendered access to finance, technological skill gaps, and sociocultural constraints continue to impede scalability and innovation. This paper critically examines the evolving role of Indian women entrepreneurs in technology-intensive and sustainable businesses, identifies multidimensional challenges through a Resource-Based View (RBV) lens, and evaluates the effectiveness of contemporary policy interventions. Using a descriptive and analytical secondary research methodology, the study synthesizes recent empirical literature to highlight both constraints and emerging opportunities. The findings underscore the need for integrated financial, technological, and social infrastructure reforms to unlock India's gender dividend and achieve inclusive, innovation-led growth.

Keywords: Women Entrepreneurship, Deep Tech, Sustainability, ESG, India 2026, Green Finance.

1. INTRODUCTION

Over the past decade, India's entrepreneurial ecosystem has undergone a profound transformation. Traditionally, women's entrepreneurship in India was largely concentrated in micro, small, and medium enterprises (MSMEs), primarily within low-technology and service-oriented sectors. However, by 2026, a new generation of women entrepreneurs has emerged, actively engaging in technologically sophisticated and sustainability-driven ventures. These entrepreneurs are leveraging advanced technologies such as artificial intelligence (AI), biotechnology, and the Internet of Things (IoT) to address complex socio-environmental challenges.

This transition coincides with India's broader developmental vision under the *Amrit Kaal*, which emphasizes innovation, sustainability, and inclusive growth. Women entrepreneurs are increasingly positioned not merely as economic participants but as strategic contributors to national priorities, including climate resilience, digital transformation, and the United Nations Sustainable Development Goals (SDGs), particularly SDG 5 on gender equality.

1.1 The Twin Transition: Digitalization and Sustainability

The global economy is experiencing a "twin transition," characterized by rapid digitalization and an urgent shift toward environmental sustainability. In India, women entrepreneurs are at the forefront of this transformation, moving beyond traditional sectors to establish enterprises in Climate-Tech, Agri-Tech, Health-Tech, and AI-driven Software-as-a-Service (SaaS). While earlier phases of India's startup boom saw women concentrated in lifestyle and direct-to-consumer (D2C) segments, the contemporary landscape reflects a marked shift toward innovation-intensive and impact-oriented business models.

Entrepreneurship in this context is no longer solely an engine of economic growth but a mechanism for building resilient, environmentally conscious, and socially inclusive ecosystems. Women-led enterprises increasingly align profitability with environmental stewardship and social responsibility, reinforcing their relevance within ESG-driven global investment frameworks.

1.2 The Economic Imperative of Women's Entrepreneurship

Despite the various advantages, women remain underrepresented in formal entrepreneurship. While women constitute over half of India's population, only about 13-14% of private enterprises are owned or managed by women. Moreover, a majority of these enterprises remain small-scale and concentrated in traditional sectors. The majority of these businesses are still small-scale, focusing on traditional industries like healthcare or education, and frequently lacks specialist infrastructure. But recent Indian women entrepreneurs are pushing these limits. Till there are many challenges and opportunities in Indian Entrepreneurial Landscape.

The recent emergence of women-led technology and sustainability ventures signals a critical shift, albeit one constrained by persistent structural and institutional barriers.

According to 2025-2026 projections, closing the gender gap in Indian entrepreneurship could add approximately \$150 billion to \$170 billion to the national GDP by 2030. This isn't just a social goal; it is a macroeconomic necessity. Women-led firms in India have shown higher capital efficiency and a greater propensity for "Socially Responsible Investing" (SRI), making them the preferred choice for a global investment community increasingly governed by ESG (Environmental, Social, and Governance) mandates.

The significance of this trend is two-fold:

- **Economic Impact:** Female-led businesses are estimated to contribute significantly to India's goal of becoming a \$7 trillion economy by 2030.
- **Social Impact:** Data suggests that women-led firms are 2.5 times more likely to hire other women and are more inclined toward "Socially Responsible Investing" (SRI) frameworks.

1.3 Objectives of the Study

The primary aim of this research is to critically analyze the evolving role of women in India's technological and sustainable business sectors, focusing on how digital transformation and green mandates have reshaped their entrepreneurial journey.

1. To examine the evolving role of Indian women entrepreneurs in technology-driven and sustainable business sectors.
2. To map the sectoral distribution of women-led startups in high-growth domains such as Climate-Tech, Agri-Tech, Circular Economy, and AI-enabled solutions.
3. To analyze push and pull motivational factors influencing women's entry into technology-intensive entrepreneurship.
4. To identify key financial, technological, institutional, and sociocultural challenges faced by women entrepreneurs.
5. To identify the future opportunities for women entrepreneurs through recent policy initiatives like Startup India Fund of Funds, WEP 3.0, and green finance mandates.

2. LITERATURE REVIEW

The rise in role of women's entrepreneurship in economic development, innovation, and sustainability is highlighted in the literature. Still, research continuously shows that Indian women entrepreneurs continue to face a variety of difficulties, especially when working in sustainable and technologically demanding industries. This part provides an in-depth knowledge of the obstacles, incentives, and theoretical foundations pertinent to Indian women entrepreneurs by merging previous research into thematic subheadings.

2.1 Women Entrepreneurship in India

Existing literature highlights the growing contribution of women entrepreneurs to India's MSME sector while simultaneously emphasizing their underrepresentation in high-growth, technology-driven industries (Roja & Sunitha, 2024).

Almost 20% of businesses in India are run by women, who make an important contribution to the MSME sector. Despite their involvement, they are still underappreciated in high-growth, technology-driven businesses (Roja & Sunitha, 2024). According to earlier research, women-owned businesses are mostly small-scale, driven by necessity, and focused on traditional industries like retail, services, and home-based businesses.

Women-owned enterprises are often necessity-driven, small in scale, and constrained by limited access to financial and social capital. Gender norms, occupational segregation, and restricted mobility continue to influence entrepreneurial choices and growth trajectories (Nayak et al., 2024).

According to Nayak et al. (2024), women's entrepreneurial choices and growth trajectories are significantly influenced by traditional male patterns, gender stereotypes, and unequal access to economic and social resources. Women's capacity to move from microbusinesses to scalable technical and sustainable operations is hampered by these socioeconomic limitations. Because of this, women entrepreneurs frequently find it difficult to achieve innovation-led growth, which is crucial for competitiveness in markets that are focused on technology.

2.2 Transition toward Technology and Sustainability:

Digital platforms and e-commerce have lowered entry barriers for women entrepreneurs by expanding market access and reducing operational costs (Johri, 2025). Simultaneously, environmentally motivated entrepreneurship is gaining momentum, with women increasingly embedding sustainability into their core business strategies. However, this dual engagement with technology and sustainability places women entrepreneurs at a complex intersection requiring advanced skills, regulatory awareness, and financial resilience.

The way women work has been completely transformed by the use of technology, especially e-commerce. Entrepreneurs in areas like Uttar Pradesh have been able to scale their enterprises and lower operating expenses, due to digital platforms like Amazon and Flipkart. At one and the same time, “environmentally motivated” entrepreneurship is becoming more and more famous. In order to solve social and environmental issues, women are becoming more and more motivated by a feeling of ecological responsibility, including sustainable practices into their fundamental business tactics. The transformation is not smooth, even with significant potential. These entrepreneurs work at a challenging junction where they have to balance the strict requirements of sustainable company with the technological needs of a digital economy.

Entrepreneur	Organisation / Venture	Sector / Focus	Contribution / Impact
Miniya Chatterji	Sustain Labs Paris	Sustainability / Climate solutions	Builds large sustainability ventures; led creation of mobile COVID facilities and India's first climate-focused higher ed programs.
Anjali Bansal	Avaana Capital	Climate-tech & sustainable investing	Invests in sustainability and technology startups; promotes climate tech growth in India.
Suhani Jalota	Myna Mahila Foundation	Health/Tech/Social enterprise	Uses tech and community engagement to improve women's health and employment; global recognition for impact.
Sairee Chahal	SHEROES/Mahila Money	Tech platform for women	Builds digital communities and financial pathways for women entrepreneurs and professionals
Ghazal Alagh	Mamaearth	Sustainable personal care	Drives eco-conscious D2C brand with natural products and tree planting sustainability initiatives.
Maria Kuriakose	Thenga	Sustainable products	Turns coconut waste into eco-friendly home goods; supports rural artisans.

2.3 Deep Tech and the Circular

In 2026, "Sustainability" is no longer a buzzword but a regulatory requirement. Women entrepreneurs have found a unique "Blue Ocean" at the intersection of technological innovation and environmental stewardship.

Women-led startups are increasingly utilizing Deep Tech innovations to address climate and resource challenges. In Agri-Tech, satellite imaging and AI-based analytics are being employed to enhance farm productivity and climate resilience. In clean energy and circular economy sectors, women entrepreneurs are pioneering waste-to-wealth models, bio-material innovations, and blockchain-enabled traceability systems.

Women-led startups are utilizing Deep Tech technologies based on tangible engineering innovation or scientific discoveries to address climate change.

- **Agri-Tech:** Startups are using satellite imagery and AI to help smallholder farmers predict weather patterns and optimize water usage.

- **Clean Energy:** Female engineers are leading the charge in battery management systems (BMS) for the burgeoning Electric Vehicle (EV) market in India.

The circular economy minimizing waste and making the most of resources has become a stronghold for female founders. From transforming floral waste into bio-materials to developing AI-driven waste sorting robots, women are redefining the "waste-to-wealth" narrative.

2.4 Key Challenges

Despite the progress, the path for an Indian woman entrepreneur remains fraught with structural and cultural barriers. Indian women confront a clear-cut and complicated set of difficulties despite their determination and the complete potential of their struggles. These have deep roots in institutional and sociocultural systems and are not only economic. Women owned businesses commonly face:

1. **Financial Obstacles-** Many people are forced to rely on "financial reset" or personal savings in order to survive due to limited access to cash caused by planted gender damages in financial institutions. Limited access to institutional finance due to collateral requirements and gender bias (Majumdar & Mittal, 2025).
2. **Institutional Barriers-** Growth is frequently restricted by problems like tax inspections, the burden of "informal payments," and a lack of knowledge about government support programs.
3. **Technological Barriers-** Insufficient advanced digital and STEM skills, particularly in leadership roles (Nguyen et al., 2025). Although digital tools provide empowerment, many women encounter serious technological challenges, wild competition, and a deficiency of specialist guidance to successfully navigate the digital kingdom.
4. **Sustainability Barriers:** High compliance costs and lack of specialized advisory support for green innovation (Gupta & Mishra, 2023).
5. **Sociocultural Constraints-** The amount of time and effort women may commit to growing their tech-driven or sustainable businesses is still restricted by traditional paternal institutions and household chores. Work-life conflict, domestic responsibilities, and limited family support (Nassif et al., 2025).

The Resource-Based View (RBV) provides a robust framework for understanding the constraints faced by women entrepreneurs. According to RBV, sustainable competitive advantage arises from access to valuable, rare, inimitable, and non-substitutable resources. Women entrepreneurs in India face deficits in both tangible resources (finance, infrastructure) and intangible resources (technical expertise, networks, mentorship). These gaps limit innovation capacity, scalability, and long-term competitiveness. Financial Limitations and Lack of Resources.

One of the most recurring issues faced by the women entrepreneurs is access to financing. Majumdar and Mittal (2025) show that a lack of collateral, perceived credit risk, and low financial literacy make it extremely difficult for even educated and urban women entrepreneurs to obtain institutional financing. Implicit bias toward gender is common in financial institutions, especially when it comes to women-led software businesses that are seen as high-risk investments.

In addition to institutional obstacles, female entrepreneurs often show voluntary financial poverty, which is a reluctance to look for outside investment because they are afraid of debt, default, and complicated financial instruments. This self-exclusion inhibits investment in sustainable innovation and technology uptake, both of which require significant upfront expenditure, and creates budgetary restrictions.

Technological Difficulties and Digital Skill Shortages

Advanced digital literacy, ongoing skill development, and the capacity for invention are necessary for technological entrepreneurship. According to Nguyen et al. (2025), insufficient technical expertise and restricted access to digital infrastructure are the main barriers keeping female entrepreneurs from growing their businesses. Geographical and mobility restrictions may be lessened by digital platforms, but women entrepreneurs frequently lack the complicated skills needed to use e-commerce, digital marketing, and data-driven decision-making tools.

Gupta and Chalil (2024) also note that women entrepreneurs had unfair outcomes as a result of the post-Covid digital acceleration. Due to a lack of resources and expertise, many found it difficult to adjust to digital payments, online customer conversations, and virtual supply chains. Women's participation in high-growth and innovation-intensive industries suffers by these technological gaps.

Challenges Linked with Sustainability

Adoption of green technologies, commitment to environmental rules, and knowledge of sustainability standards are all necessary for firms that are focused on sustainability. According to Gupta and Mishra (2023), women entrepreneurs encounter significant obstacles in the political, legal, and environmental spheres. A significant barrier is the lack of access to professional advice, regulatory expertise, and finance options that prioritize sustainability.

Sustainable innovation necessitates long-term investment and scalability, even while women-led businesses are more likely to pursue social and environmental goals. Women entrepreneurs are frequently unable to completely apply sustainable practices or grow green inventions beyond a micro-enterprise level due to financial insecurity and risk-averse attitudes.

Governmental and Socio-Cultural Barriers

Women entrepreneurs are particularly impacted by sociocultural norms on caring and domestic duties. According to Roja and Sunitha (2024), issues with work-life balance, a lack of family support, and gender bias greatly limit women's ability to concentrate on growing their businesses. According to Nassif et al. (2025), these obstacles have a negative impact on entrepreneurial continuity and resilience because they are perceived as role conflict and patriarchal threats.

Mentorship networks and entrepreneurial ecosystems are examples of institutional support structures that frequently fall short in reaching female entrepreneurs. As a result, there are institutional gaps where formal policies are in place but do not effectively provide support at the local level.

Constraints on Tangible Resources

Scaling technology-based and sustainable businesses requires tangible resources like finance, physical infrastructure, and cutting-edge machines. However, women-owned businesses frequently struggle with a lack of resources and rely largely on bootstrapping and personal savings. This prevents them from reaching economies of scale by limiting their capacity to invest in high-tech machinery required for sustainable production and innovation.

LIMITATIONS ON INTANGIBLE RESOURCES

Human capital, technical expertise, social networks, and innovative culture are examples of intangible resources that are just as important. Despite increasing educational attainment, women entrepreneurs frequently lack technical self-efficacy and STEM-focused training. Also, their exposure to industry knowledge and early-stage funding opportunities is diminished by their restricted access to professional networks and mentorship.

Innovation is also highlighted as a strategic resource by RBV theory. However, women entrepreneurs are less motivated to participate in high-risk, high-reward technical inventions due to perceived gender discrimination and social pressure.

Motivational Dynamics: Pull and Push Elements

Push and pull factors affect women's entry into entrepreneurship. Women are frequently drawn to entrepreneurship by push factors including economic necessity and discrimination in the workplace, while pull factors include freedom, creative self-expression, and dedication to sustainability. Pull factors are more common among educated women in technology-based ventures, but institutional gaps sometimes block their entrepreneurial goals.

3. RESEARCH METHODOLOGY

This study adopts a **secondary, descriptive, and analytical research design**. Data were collected from peer-reviewed journals, policy reports, and institutional publications. Thematic analysis was employed to categorize challenges into financial, technological, sustainability-related, sociocultural, and institutional dimensions. While the absence of primary data is a limitation, reliance on recent and credible sources enhances the study's analytical robustness.

4. DISCUSSIONS

The results of the examined literature show that Indian women entrepreneurs in technology and sustainable companies confront connected, systemic, and self-correcting problems rather than isolated ones. Women's capacity to create, grow, and maintain their businesses suffers by a "triple threat" that combines financial restrictions, technological obstacles, and sociocultural limitations.

4.1 How Financial, Technological, and Sustainability Issues Are Linked

According to the systematic thematic analysis, the primary obstacle affecting other aspects of entrepreneurial performance is financial limitations. The adoption of sustainable business practices suffers by women entrepreneurs' limited access to institutional financing, which limits their capacity to invest in cutting-edge technologies. Technological gaps also make it more difficult to comply with environmental regulations and lower competitiveness in markets that are driven by innovation.

This loop gets worse by sociocultural norms, which limit women's ability to take risks and drive towards creativity. Because of this, despite having a strong desire to start businesses and a sustainability-driven vision, many female entrepreneurs are yet limited to low-growth business models.

4.2 Digital and Technological Obstacles in the Post-COVID Era

In the post-COVID era, technology has become essential for company survival. However, the digital gap takes many different shapes for Indian women entrepreneurs. There is still an extensive gap in digital literacy, with many women finding it difficult to use digital marketing tools, e-commerce platforms, and data-driven business procedures. The potential of online platforms to overcome mobility and market-access restrictions is still unfulfilled in the absence of focused digital training.

Adoption of technology is further slowed by infrastructure constraints like unstable internet connectivity, expensive operating expenses, and cybersecurity issues. The importance of self-efficacy in technical success is also highlighted by research. Although women's intention to enter technology-driven enterprises is increased by economic empowerment, low confidence in technical abilities frequently influences actual outcomes, limiting scalability and successful implementation.

4.3 The Entrepreneurship Culture and Financial Scarcity

The biggest challenge for female entrepreneurs in the technology and sustainable industries is still access to institutional financing. Women entrepreneurs often rely on financial starting from personal savings or family resources to fund their businesses due to feared risk and gender bias from financial institutions and venture capitalists. Although this strategy guarantees business continuity, it significantly restricts technical investment and development potential.

The examination of government action reveals a significant paradox. Research indicates that when women-owned businesses receive institutional or governmental support, their sales growth surpass that of businesses run by men. Despite their proven ability to execute, women entrepreneurs are statistically less likely to receive this kind of assistance because of institutional outreach, bureaucratic complexity, and ignorance.

4.4 Sector-Specific and Sociocultural Limitations

The Indian entrepreneurship environment is still deeply rooted in sociocultural barriers. The "triple work shift" balancing household duties, professional commitments, and entrepreneurial roles is a common experience for female entrepreneurs. Because of this role conflict, there is less time, energy, and mental capacity available for strategic decision-making and innovation, which frequently results in business growth slowdown.

There is a substantial correlation between higher levels of reported business obstacles and perceived social pressure and gender discrimination. These factors limit women's participation in high-risk, high-reward technical and sustainable undertakings by encouraging risk-avoiding behaviour.

Risks unique to a certain sector enhance these difficulties. Compared to those in traditional service sectors, women entrepreneurs in the manufacturing and high-tech industries confront more challenges. These sectors require substantial capital investment, complex supply chains, and skilled technical labour resources that are but less available to female entrepreneurs.

The study found that there is significant "migration" of women into high-complexity sectors as presented below-

Sector	Woman-Led Share (2026)	Primary Technology
Climate-Tech	22%	Carbon Sequestration, IoT Sensors
Agri-Tech	18%	Satellite Imaging, Drone-as-a-Service
Health-Tech	31%	Predictive Diagnostics, AI-Drug Discovery
Circular Economy	42%	Blockchain Traceability, Bio-plastics

The rise in **Climate-Tech** is particularly noteworthy. Founders like those at *Revy Environmental Solutions* are utilizing biotechnology to transform industrial waste into reusable energy, proving that "Green-Tech" is no longer a niche but a core industrial pillar.

The analysis reveals a shift from "Necessity" to "Aspiration."

- **Pull Factors (Opportunity-Driven):** 72% of founders in the AI sector cited "creative autonomy" and the desire to "solve India-scale problems" (e.g., water scarcity) as their primary motivation.
- **Push Factors (Conflict-Driven):** Despite being highly skilled, many women are pushed out of the "Traditional IT" workforce due to the "**Glass Ceiling**" and the lack of flexibility in senior management. Entrepreneurship offers a way to build a work culture that accommodates multi-generational caregiving.

Despite progress, three systemic barriers remain entrenched in the 2026 ecosystem.

- **The Gender-Funding Gap (The "Glacial" Progress)**

Venture capital remains the most resistant to change. In 2025, female-only teams received just **\$5.2 million** as an average deal size, compared to **\$11.7 million** for all-male teams.

"Investors still ask me how I will manage my business after marriage, while they ask my male peers about their 10x growth projections." (*Founder, Health-Tech Startup, Bengaluru.*)

- **The STEM-Skills & CTO Gap**

While India has the world's highest percentage of female STEM graduates (~43%), there is a "Missing Middle" in technical leadership. Many women-led firms struggle to find female CTOs, often leading to mixed-gender teams that, paradoxically, find it slightly easier to raise funds but lose "gender-centric" mission focus.

- **The "Second Shift" (The Shadow Tax)**

As of 2026, Indian women spend an average of 4.5 hours more per day on unpaid domestic work than men. This "Second Shift" acts as a shadow tax on their time, limiting their ability to attend networking events, which are crucial for securing Series A and B funding.⁵

4.5 Opportunities for Women Entrepreneurs

Women entrepreneurs in India today operate within an ecosystem rich with emerging opportunities, driven by digital transformation, sustainability imperatives, and supportive policy frameworks. The expansion of Digital Public Infrastructure, including UPI, ONDC, and e-commerce platforms, has lowered entry barriers and enabled women to access wider markets with minimal capital investment. Growing emphasis on ESG compliance and green finance has opened high-growth avenues in Climate-Tech, Agri-Tech, renewable energy, and the circular economy sectors where women-led enterprises often demonstrate strong social and environmental alignment. Additionally, government initiatives such as Startup India, the Women Entrepreneurship Platform (WEP), and targeted incubation and funding programs have strengthened access to mentorship, finance, and innovation networks. Together with rising educational attainment, increased visibility of women role models, and shifting societal attitudes, these factors position women entrepreneurs as key contributors to India's innovation-led growth and sustainable development.

4.6 Policy Efficacy- The 2026 Evaluation

The government's role has evolved from a "Grant Provider" to an "Ecosystem Orchestrator."

- **WEP 3.0:** The latest iteration of the Women Entrepreneurship Platform has successfully moved beyond a repository to a "Smart Matchmaker," connecting 5,000+ founders with mentors using AI-driven compatibility scores.
- **Green-Finance Mandates:** The RBI's 2025 policy requiring Public Sector Banks to allocate 10% of green loans to women-led units has significantly lowered interest rates for circular economy startups.
- **ONDC Integration:** The democratization of e-commerce via ONDC has allowed 2 million women-owned MSMEs to bypass the high commission fees of legacy aggregators.

4.7 Strategic Roadmap: Toward 2030

To transition from a "Startup Nation" to a "Women-Led Innovation Powerhouse" by 2030, the study proposes a four-pillar roadmap:

1. **Investment in Care Infrastructure:** Recognizing childcare and elderly care as "Critical Economic Infrastructure." The development of "Startup Creches" in Special Economic Zones (SEZs) will liberate thousands of hours of female leadership.
2. **Blind Pitching & Bias Audits:** Venture capital firms should adopt "Gender-Blind" initial pitch decks. Furthermore, SEBI should mandate transparency in the gender-wise disbursement of funds for all AIFs (Alternative Investment Funds).

3. **The "Deep-Tech Fellowship":** A national scholarship program aimed specifically at female PhDs in STEM to transition their research into commercial "Deep-Tech" startups.
4. **Decentralized Green Clusters:** Establishing regional hubs for "Sustainable Manufacturing" in Tier III cities, providing shared lab spaces for women to prototype climate-tech hardware.

5. CONCLUSION

Women entrepreneurs are increasingly shaping India's technology-driven and sustainable business landscape, demonstrating both opportunity and resilience in high-complexity sectors. However, realizing the full potential of women-led innovation requires integrated policy interventions addressing access to finance, advanced skills, care infrastructure, and institutional bias.

This study finds that women entrepreneurs continue to face interconnected challenges, including financial exclusion, technological gaps, institutional inefficiencies, and sociocultural constraints. Although several government initiatives support women's entrepreneurship, their impact remains uneven due to execution gaps, limited outreach, and insufficient gender-sensitive design. Financial constraints emerge as the primary barrier, restricting access to technology and sustainable innovation, while technological limitations further reduce competitiveness in high-growth sectors and compliance with environmental standards. These challenges are intensified by institutional rigidities and social expectations, limiting risk-taking, innovation, and scalability.

Empowering women entrepreneurs in technology and sustainability is therefore not only a matter of social inclusion but a strategic economic imperative. Expanding women's participation in these sectors can significantly contribute to India's innovation-led growth, environmental sustainability, and global competitiveness during the Amrit Kaal. Bridging funding and care infrastructure gaps can unlock a substantial gender dividend, positioning inclusive and sustainable entrepreneurship as a key driver of India's long-term development.

6 LIMITATIONS OF THE STUDY

The lack of primary field validation and reliance on secondary data are the study's limitations. Additionally, rather than direct data analysis, conclusions drawn from depends on interpretations documented in the literature. still, the findings' stability and usefulness are improved by the inclusion of current, peer-reviewed sources and widely used datasets.

7 FUTURE SCOPE OF THE STUDY

While the present study provides a comprehensive secondary analysis of the challenges and opportunities faced by Indian women entrepreneurs in technology-driven and sustainable businesses, several avenues remain open for future research. Given the dynamic nature of India's entrepreneurial ecosystem and evolving policy landscape, further empirical and longitudinal investigations are essential to deepen understanding and inform evidence-based interventions.

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IMPACT OF FINANCIAL LITERACY, BEHAVIOR TOWARDS THE WELL-BEING OF ELDERLY WOMEN FACING FINANCIAL CHALLENGES IN MUMBAI

¹Aarushi Sah and ²Sagar Gaikwad¹MMS Student, MET Institute of Management²Assistant Professor, MET Institute of Management**ABSTRACT**

In this study, we examined how elderly women in Mumbai manage their finances and how it impacts their well-being. We surveyed 108 older women using a set of questions. Our findings show that when elderly women have more financial knowledge, they tend to make better financial decisions and feel happier. This suggests that teaching older women about finances and encouraging positive financial habits can improve their financial security and overall happiness. It's important for policymakers and community groups to support them in this endeavour.

INTRODUCTION

In the vibrant and dynamic city of Mumbai, where the pulse of modernity beats alongside age-old traditions, a significant portion of the population grapples with unique financial challenges. Among this demographic, elderly women stand out as a particularly vulnerable group, often overlooked in discussions about financial empowerment and security. As pillars of families and communities, these women play pivotal roles in nurturing and sustaining households, yet they face a multitude of obstacles in managing their finances effectively.

Mumbai, as one of India's most populous and economically vibrant cities, presents a complex tapestry of socioeconomic dynamics. Amidst the glitz and glamour of its urban landscape, pockets of financial vulnerability exist, especially among elderly women. With changing family structures, evolving social norms, and economic uncertainties, elderly women find themselves navigating a labyrinth of financial decisions and constraints, often with limited resources and support.

This study aims to understand what older women in Mumbai go through in their daily lives regarding their financial well-being. The goal is to figure out how financial literacy, behavior, and well-being are connected. This will help us understand older women's financial situations better and develop ways to make them feel more independent and stronger. By delving into their struggles, goals, and strategies for coping, this research intends to guide the development of policies and actions that can uplift and assist elderly women in securing their financial well-being for the future.

This study uses a structured survey to collect information from older women living in Mumbai. We'll analyze the data using statistical methods to understand how their financial knowledge, behavior, and well-being are connected. By doing this, we hope to better understand the financial situations of elderly women in Mumbai and advocate for their needs. The results will be useful for policymakers, community groups, and others working to support elderly women in managing their finances. Ultimately, we want to help create a fairer and more supportive financial system that helps elderly women live well in Mumbai.

1. LITERATURE REVIEW

- One study by Munisamy, Sahid, and Hussin (2022) in Malaysia talked about how knowing more about money and having more education can help people with their money problems. Even though their study was in a different place, the idea that education and knowing about money can help with financial issues is something that applies to elderly women in Mumbai too.
- Another study by Barrafreem, Tinghog, and Vastfjall looked at how trusting the government during tough times, like the COVID-19 pandemic, can make people feel better about their money. Even though they didn't focus on older women, the idea of trust and feeling secure with money is still important for people, especially those who might be struggling.
- Sabri and Dass (2017) looked at how poor young people in cities handle their money and how it affects their well-being. Even though they studied a different group, understanding how money challenges affect well-being can help us understand what older women in Mumbai might be going through.
- Abdullah, Fazli, and Arif studied how young workers handle their money and how it affects their well-being too. Even though they looked at a different age group, they found that knowing about money and managing debt is important for feeling good about money, which could be true for elderly women in Mumbai as well.
- Mousavi and Rasaeimanesh studied how knowing about money, dealing with stress, and taking risks affect

people's money decisions and well-being in Iran. They found that these things are all connected, which could help us understand how older women in Mumbai manage their money too.

- Sabri, Reza, and Wijekoon studied how women who work for the government handle their money. Even though they studied a different group, their findings could still help us understand what might help older women in Mumbai with their money.
- Kumar, Pillai, Kumar, and Tabash studied how skills, digital literacy, and being able to make choices affect people's money decisions and well-being. Even though they didn't focus on older women, the idea that being able to make choices can affect how people manage their money is something that could apply to them too.
- Baker, West, and Wood studied how older women who own homes might struggle with money problems. They found that many older women might have a hard time with money, which shows that we need to find ways to help them feel more secure financially.
- Megananda and Faturohman talked about how to help people feel better about their money in Indonesia. Even though their study was in a different place, their ideas about how people's money habits affect how they feel about money could be useful for older women in Mumbai too.

2. RESEARCH METHODOLOGY

This study used numbers to look at how financial knowledge, money habits, and feeling good about money are connected for older women in Mumbai. Here's how we did it:

A. Research Design:

The study uses a method called quantitative cross-sectional design. This means we're looking at how financial literacy, behavior, and well-being are connected for elderly women in Mumbai all at once. We're collecting data from a group of elderly women all at the same time to see if we can find any patterns or connections. This will help us figure out how to make policies and interventions to help them better.

B. Objectives:

- 1) To understand how well older women in Mumbai understand and use basic money skills.
- 2) To identify the specific financial challenges faced by elderly women in meeting their daily expenses in Mumbai.
- 3) To analyse the financial behaviors of elderly women, including budgeting practices, savings behavior, and investment decisions.
- 4) To evaluate the perceived financial well-being and security among elderly women in Mumbai.

C. Hypothesis:

1) Financial Literacy and Financial Behavior:

- **Null Hypothesis (H0):** There is no significant relationship between the level of financial literacy and behavior among elderly women in Mumbai.
- **Alternative Hypothesis (H1):** There is a significant relationship between higher levels of financial literacy and more positive behavior among elderly women in Mumbai.

2) Financial Behavior and Financial Well-Being:

- **Null Hypothesis (H0):** There is no significant relationship between financial behavior and well-being among elderly women in Mumbai.
- **Alternative Hypothesis (H1):** There is a significant relationship between financial behavior and higher levels of well-being among elderly women in Mumbai.

D. Sampling:

The study focuses on elderly women in Mumbai, India, using convenience sampling for practicality and accessibility. A sample of 108 participants was chosen to balance statistical reliability and feasibility. A questionnaire was developed to evaluate financial literacy, behavior, challenges, and well-being among elderly women. Data will be collected by administering the questionnaire either in person or online, ensuring clear and accurate responses while maintaining participant confidentiality. Responses will be assigned codes and added to a database for examination, including steps to clean up any errors or inconsistencies in the data applied to address missing values, outliers, and inconsistencies. Statistical methods like correlation, regression, and descriptive analysis will be employed to analyse the data and test hypotheses derived from the research

objectives. Ethical considerations will be prioritized, adhering to guidelines for voluntary participation, informed consent, and participant privacy throughout the research process.

E. Variables:

- 1) **Financial Literacy:** The awareness of fundamental financial concepts like budgeting, credit scores, handling loans, and insurance, particularly among older women in Mumbai.
- 2) **Financial Challenges:** The specific difficulties and obstacles faced by elderly women in Mumbai concerning meeting their daily expenses and managing their financial resources effectively, including factors such as income adequacy, expenses coverage, and financial worries.
- 3) **Financial Behavior:** The actions and decisions related to managing finances, including budgeting practices, savings behavior, investment decisions, and debt management, exhibited by elderly women in Mumbai.
- 4) **Financial Well-Being:** The extent to which elderly women in Mumbai feel satisfied with their finances, secure in their financial situation, and overall, financially well-off. This includes factors like feeling confident in managing expenses, outlook on future finances, ability to enjoy life because of good money management, and feeling financially stable.

F. Data Collection: - We made a list of questions based on what we already knew and what we wanted to find out. Then, we asked the women those questions.

Demographic Profile

Participants were asked to provide their name and select their gender, with options limited to female respondents. Location options included Mumbai and areas outside Mumbai. Marital status choices comprised single, married, or widowed/divorced. Education levels were categorized as SSC, HSC, Graduation, Post-Graduation, or Below SSC. Participants were also asked to specify their profile, selecting from options such as homemaker, private employee, public employee, businesswoman, or others with an option to specify.

Furthermore, participants were queried about their status as an earning member in the family and whether they were involved in making financial decisions.

Financial Literacy

Participants rated their confidence and understanding on various financial aspects using a scale ranging from 1 (Never) to 5 (Always). This included assessing confidence in budget creation, understanding credit score factors, skills in managing loans, and understanding the importance of insurance.

Financial Challenges

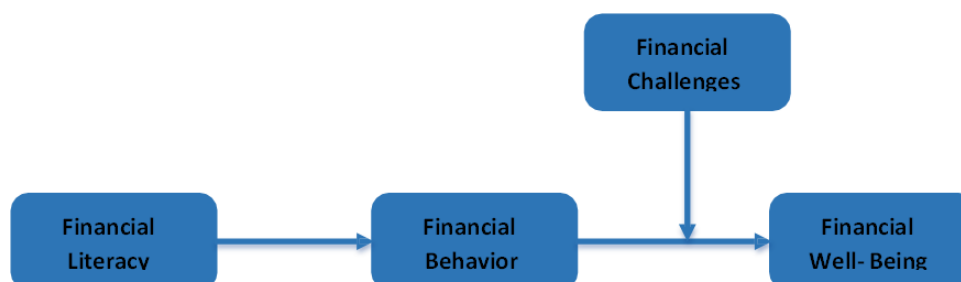
Participants were asked to respond with Yes or No to indicate whether they faced difficulties in meeting daily expenses and whether they perceived their income as sufficient to cover expenses.

Financial Behavior

Participants rated their financial behavior on a scale from 1 (Never) to 5 (Always). This included assessing the frequency of planning weekly and monthly expenses, setting long-term financial goals, saving money monthly, maintaining an emergency fund, and saving for long-term goals.

Financial Well-Being

Participants were requested to express their level of agreement or disagreement with statements regarding their satisfaction with their financial situation. They were given a scale from 1 to 5, with 1 indicating strong disagreement and 5 indicating strong agreement. The statements assessed their confidence in dealing with unforeseen expenses, their feeling of assurance regarding future financial matters, their capacity to derive enjoyment from effective money management, their general financial stability, and having surplus funds remaining at the conclusion of each month.



G. Tools for Data Analysis:

We used math methods like correlation and regression to study the data:

- 1) **Correlation Analysis:** This approach measures how strongly two things are connected and in what direction. In this case, we calculated correlation coefficients to see how financial knowledge, money habits, and feeling good about money are linked for older women in Mumbai.
- 2) **Regression Analysis:** This method is used to look at how one thing changes when another thing changes. In this study, we used regression analysis to predict how well someone feels about their finances based on how much they know about money and how they handle it. The regression coefficients reveal the extent and direction of these relationships.

H. Importance of the study:

This study's significance lies in its capacity to offer valuable understandings regarding the financial obstacles encountered by elderly women in Mumbai and how these hurdles influence their overall welfare. By addressing this gap in knowledge, the study can inform policymakers, empower elderly women, improve financial literacy programs, enhance quality of life, and contribute to academic knowledge. Ultimately, the findings have the potential to make meaningful contributions to the well-being of elderly women in Mumbai and beyond.

3. THEORETICAL FRAMEWORK

Financial literacy influences financial behavior, implying that individuals who possess greater knowledge about financial matters tend to make wiser financial decisions. For instance, grasping concepts like budgeting or saving money often results in making more prudent financial choices.

Financial Behavior impacts Financial Well-Being: This shows that how people handle their money affects how they feel about their financial situation. For instance, if someone is good at saving and spending wisely, they generally feel more secure and satisfied with their finances.

Financial challenges come in between how people handle money and how they feel about it. This implies that issues such as insufficient funds or managing debt can hinder individuals from feeling satisfied with their financial decisions. Despite efforts to save and spend wisely, these challenges can induce stress and impact overall well-being.

In summary, understanding money, making smart financial choices, and dealing with financial challenges all play a role in how people feel about their finances. By improving financial knowledge and habits, individuals can better navigate challenges and improve their financial well-being.

4. INTERPRETATION OF DATA**Correlation Analysis:****Table No. 1-**

	Financial Literacy	Financial Behavior	Financial Well-Being
Financial Literacy	1		
Financial Behavior	0.416556046	1	
Financial Well-Being	0.53689965	0.480618957	1

The correlation coefficients were calculated to explore how financial literacy, behavior, and well-being are related among elderly women in Mumbai. We found:

1. Financial literacy and financial behavior show a moderate positive correlation ($r = 0.417$, $p < 0.001$), suggesting that better financial knowledge is linked to more favorable financial habits.
2. Financial literacy shows a moderate positive correlation with financial well-being ($r = 0.537$, $p < 0.001$), suggesting that having a better understanding of finances is linked to feeling more positive about one's financial circumstances.
3. Moreover, there is a moderate positive correlation between financial behavior and well-being ($r = 0.481$, $p < 0.001$), suggesting that practicing good financial habits is associated with a heightened feeling of financial security among elderly women.

Regression Analysis:

The regression analysis investigated how financial literacy and behavior together predict well-being among older women. The findings indicated that about 23.1% of the differences in financial well-being could be understood by considering both factors together. Both financial literacy and behavior significantly impacted

well-being ($p < 0.001$), highlighting their importance for elderly women in Mumbai. For every extra point of financial knowledge, we expected financial well-being to go up by about 0.306 points. Similarly, for every one-point increase in financial behavior, well-being was projected to increase by about 0.652 points. In general, these results show that knowing more about money, how you handle it, and feeling good about your finances are connected for older women in Mumbai. Improving financial literacy and encouraging positive financial behavior could help enhance their financial well-being.

X=Financial Literacy, Y= Financial Behavior

Summary Output

Table No. 2-

Regression Statistics	
Multiple R	0.416556
R Square	0.1735189
Adjusted R Square	0.1657219
Standard Error	2.9785965
Observations	108

ANOVA

Table No. 3-

Model	df	SS	MS	F	Significance F
Regression	1	197.4437	197.4437	22.2546	7.32E-06
Residual	106	940.436	8.872037		
Total	107	1137.88			

Table No. 4-

	Coefficients	Standard Error	T Stat	P-value	Lower 95%	Upper 95%	Lower 95%	Upper 95%
Intercept	11.76663	0.921497	12.76903	3.59E-23	9.939669	13.59358	9.939669	13.59358
FL	0.305829	0.064829	4.717478	7.32E-06	0.177299	0.434358	0.177299	0.434358

X= Financial Behavior, Y= Financial Well-Being

Table No. 5-Summary Output

Regression Statistics	
Multiple R	0.48061896
R Square	0.2309946
Adjusted R Square	0.22373981
Standard Error	3.89661713
Observations	108

Table No. 6-ANOVA

Model	df	SS	MS	F	Significance F
Regression	1	483.45241	483.45241	31.84038118	1.40676E-07
Residual	106	1609.46426	15.1836251		
Total	107	2092.91667			

Table No. 7-

	Coefficients	Standard Error	T Stat	P-value	Lower 95%	Upper 95%	Lower 95%	Upper 95%
Intercept	7.6094669	1.8743656	4.05975589	9.427E-05	3.8933547	11.3255791	3.89335475	11.3255791
FB	0.65182153	0.11551532	5.64272817	1.406E-07	0.4228011	0.88084188	0.42280118	0.88084188

5. TESTING OF HYPOTHESIS:

1) Financial Literacy and Financial Behavior:

- Correlation Coefficient: 0.416556046 ($p < 0.001$)

- Regression Analysis:

- **Coefficient for Financial Literacy (FL):** 0.305829 ($p < 0.001$)

- The findings from both correlation and regression analyses affirm the alternative hypothesis (H1), demonstrating a notable positive correlation between financial literacy and behavior among elderly women in Mumbai.

2) Financial Behavior and Financial Well-Being:

- Correlation Coefficient: 0.480618957 ($p < 0.001$)

- Regression Analysis:

- **Coefficient for Financial Behavior (FB):** 0.65182153 ($p < 0.001$)

- The correlation and regression findings demonstrate a notable positive correlation between financial behavior and well-being in elderly women residing in Mumbai, thus endorsing the alternative hypothesis (H1).

6. FINDINGS

The study explored the relationships between financial literacy, behavior, and well-being among elderly women in Mumbai through correlation and regression analyses. The key findings are summarized as follows:

1) Correlation Analysis:

- **Financial Literacy and Financial Behavior:** A moderate positive correlation ($r = 0.417$, $p < 0.001$) was found, indicating that higher financial literacy is associated with more positive financial behaviors.
- **Financial Literacy and Financial Well-Being:** The study found a moderate positive correlation ($r = 0.537$, $p < 0.001$), suggesting that higher financial literacy is linked to better financial well-being.
- **Financial Behavior and Financial Well-Being:** There is a moderate positive correlation ($r = 0.481$, $p < 0.001$), indicating that better financial behaviors are associated with higher financial well-being.

2) Regression Analysis:

- The regression analysis revealed that financial literacy and financial behavior together explain about 23.1% of the variance in financial well-being among elderly women in Mumbai.
- Significant Predictors: Both financial literacy and financial behavior are significant predictors of financial well-being:
- For every one-point increase in financial literacy, financial behavior is expected to increase by approximately 0.306 points.
- For every one-point increase in positive financial behavior, financial well-being is projected to increase by about 0.652 points.

7. IMPLICATIONS

The results highlight how crucial financial knowledge and positive financial actions are for the well-being of elderly women in Mumbai. Programs that focus on improving financial literacy and fostering good financial habits could greatly enhance the financial stability and overall quality of life for these women. It is essential for policymakers, community organizations, and practitioners to focus on initiatives that support elderly women by providing financial education and support networks.

Research Gap:

- **Limited Focus:** Existing studies may not have paid enough attention to the financial situations of elderly women living in big cities like Mumbai. This means there's not enough information about how these women manage their money in busy urban areas.
- **Not Enough Information:** We might not have enough research about how elderly women's behaviors with money affect their lives. For example, we don't know much about how their spending habits or saving habits impact their overall well-being.

- **Ignoring Different Factors:** Studies might not have looked at how things like age, gender, and how much money someone has all come together to affect how elderly women handle their money. So, we're missing out on understanding how these different things influence their financial situations.
- **Lack of Specific Help:** There might not be enough ideas about how to specifically help elderly women in cities like Mumbai with their money. So, we need more research to find ways to support them better.

8. CONCLUSION

In summary, this study investigated how financial knowledge, money habits, and feeling good about money are related for older women in Mumbai. Both looking at connections and using math to predict outcomes showed that there's a strong link between these factors. We found that knowing more about money and having positive money habits are connected to feeling better about finances among elderly women. Specifically, knowing more about money and having better money habits can predict about 23.1% of how satisfied elderly women feel about their finances. This underscores the significance of both understanding finances and adopting positive financial practices in enhancing the financial well-being of elderly women in Mumbai. It suggests that teaching them about money and encouraging smart money habits could help them feel more financially secure and happier. Policymakers, professionals, and community groups could use this information to support older women in Mumbai and help them become more financially independent and secure in their later years. We need to investigate more things that affect how elderly women feel about their money and come up with plans that fit their needs, especially in big cities like Mumbai.

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INFLUENCER MARKETING AND BRAND TRUST IN DIGITAL AGE

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ABSTRACT

Influencer marketing has revolutionized brand-consumer interactions in the digital age by leveraging social media personalities to foster trust and engagement through perceived authenticity and credibility. Now-a-days, we see that consumers tend to demand genuine product or service endorsement over a well-polished advertisement. This results in making micro-influencers even more prominent than celebrities in Product Marketing.

Influencers being a part of common public, become an easy link between the brands and customers. This approach also helps the brand to cut down on the cost by avoiding creation of premium advertisement which are relatively costlier as compared to influencer-marketing. For brands, this paradigm shift offers opportunities to humanize messaging, enhance purchase intentions and achieve cost-effective reach in niche markets.

This leads us to a conclusion that a nuanced, balanced approach, urging brands to prioritize relational authenticity over transactional gains.

Keywords: Influencers, marketing, brands, consumers, digital age, advertisements, product cost, celebrities, cost-effective

INTRODUCTION

Influencer marketing has revolutionized brand - customer interactions in the digital age by leveraging social media personalities to foster trust and engagement through perceived authenticity and credibility. Marketing has always been a prominent tool responsible for the improvement in sales, marketing is nothing but “the process by which companies engage customers, build strong customer relationships, and create customer value in order to capture value from customers in return”. This process has been around for ages but as we now move to this modern age which is majorly tech driven. In this new era there has been improvements made regarding marketing adapting new digital techniques to reach wider range of audience and grab more customer attention.

Earlier instead of modern marketing techniques and targeting every specific individual they tried ‘MMS’ MASS MARKETING METHOD. ‘English pottery makers Josiah Wedgewood (1730–1795) and Matthew Boulton (1728–1809) were the pioneers of modern mass marketing methods. Wedgewood introduced direct mail, travelling salesmen and catalogues in the eighteenth century. This was useful in the start but sooner it was realised that this is good for targeting large group of audience, but this also had some major drawbacks such as:-

- 1.) Increasing expenses for travelling.
- 2.) Not able to reach target audience.
- 3.) Literacy issue.
- 4.) Difficulty in understanding customer demands.
- 5.) Focusing on just one segment of people

As decades past we started coming up with new methods which were more efficient than the previous one. Eventually brands also started realising that they will have to come with new marketing ideas so that they try to connect with people more easily and this will help them know about their targeted audience. In the early 2000’s fashion models globally got a boom as slowly but steadily everyone started to use ‘INTERNET’ and in this time only there was a shift in the modelling industry as companies started trusting in fashion models more to promote their brand and their product.

● Digital Marketing

When it comes to understanding today’s market and reaching the right audience digital marketing is at the heart of it all. Digital Marketing acts as an umbrella type of marketing that leverages technology such as social media, search engines & emails to reach audiences in new and modern ways.

There are different segments in digital marketing and the latest and one of the most efficient is “INFLUENCER MARKETING”.

● **Influencer Marketing**

In today's world it works really well as it is an updated marketing model and even for small brands it is really beneficial as this idea helps the brands to promote their product at a low cost and helps them to improve bond creation with their customers. These brands reach out to influencers and do brand – collaborations.

Companies often provide three types of Brands – Collaborations:

● **BARTER COLLAB**

In this, the brand and the influencer deals in a way where the brand sends the influencer their products to promote online and after promotion, they are allowed to keep the products to themselves.

● **PAID COLLAB**

In this, the brands give the influencer their product to promote it online but here the influencers are also paid to do this promotion. This is the most beneficial because in this money is also involved so the influencers try to give their best while the whole marketing process.

● **REIMBURSEMENT COLLAB**

In this, the influencers must buy the specific products to review and then promote it on their account and the brand promises to reimburse the expense afterwards. This collab completely works in company's favour.

- If we have to see it from a brand's perspective, then it completely depends on what the brand actually wants from the influencer i.e

If the brand is new in the market and the funds are limited the brand should choose "BARTER COLLAB" as it involves less money and it has its own pros & cons. This helps the brand to have increased audience reach as it allows the brands to create more buzz in the market with lower cost.

If the brand is already established and have decent funds, then they can afford "PAID COLLAB" as it works in the brands favour.

This helps to maintain professionalism and control over the complete deal. Paid collaborations help brands to organise campaigns across platforms with consistent visuals, messaging and timelines.

According to statista.com, "In 2020 the global marketing market value stood at nearly 10 billion USD and is estimated to reach over 30 billion USD in 2025". Now as 2025 comes to an end if we see the market it is expected to be around 32 billion USD.

Industry verticals — Beauty, Fashion, F&B, Gaming etc.

- Beauty & personal care remain top spending verticals for influencer collaborations. (vertical fact)
- Fashion brands balance macro celebrity launches with micro creator styling content. (vertical tactic)
- Food & Beverage uses creators for local restaurant discovery, product samplings and UGC recipes. (vertical tactic)
- Gaming and tech lean heavily on streamers and long-form demos (Twitch/YouTube). (vertical fact)

ROI, KPIs & measurement

- Influencer marketing average ROI benchmark: ~\$4–\$6 returned per \$1 spent across different analyses (commonly reported \$5.78).
- Many brands see **better content performance** from influencer content when repurposed for paid ads vs brand creative.

Influencer tiers & engagement

- Micro-influencers (10K–100K) often deliver the **highest engagement rates** vs macro/mega creators.
- Nano-influencers (<10K) have the best engagement per follower in many niche.
- Macro & celebrity influencers scale reach but usually show **lower engagement %** than smaller creators.
- Median follower counts for Instagram creators used in brand campaigns often sit near **10K–50K** for micro programs.
- Engagement rates vary by vertical — fitness, sport and beauty often show higher average engagement.
- Influencers with multi-platform followings command premiums vs single-platform creators.

Key Report Takeaways:

- By influencer type, micro creators held 40% of the influencer marketing market share in 2024, while nano creators are forecast to expand at a 36% CAGR through 2030.
- By social media channel, Instagram led with a 30% revenue share in 2024; TikTok is projected to grow at a 38% CAGR to 2030.
- By application, campaign-management suites accounted for a 35% share of the influencer marketing market size in 2024, and compliance tools are advancing at a 35% CAGR through 2030.
- By end user, retail and e-commerce commanded 28% of the influencer marketing market size in 2024, whereas gaming and entertainment are forecast to grow at a 34% CAGR to 2030.
- By geography, North America contributed the largest 35% share, while Asia-Pacific is set to record the highest 35% CAGR during 2025-2030.

(Source: <https://www.mordorintelligence.com/industry-reports/influencer-marketing-market>)

According to MarketingLTB.com, Global industry size & budgets

- Global influencer-marketing market size (2025 projection): ~US\$32B–33B.
- Year-over-year growth (2024→2025) projected at ~30–36% for the global market.
- ~86% of brands will use influencer marketing in major markets by 2025.
- 71% of marketers planned to increase influencer budgets in 2025
- ~60% of businesses run influencer programs in-house; ~40% use agencies.
- Brands working with creators typically deploy 5–30 influencers per campaign depending on goals.

CONCLUSION

According to this analysis we can say that “INFLUENCER MARKETING” is arguably a very prominent section in the whole MARKETING sector as it is very efficient for the companies and is also beneficial for the influencers as they also get a chance to present themselves and utilize their marketing skills for the betterment of the brand. Since the idea of influencer marketing has come in market it has worked as a ‘masterstroke’ as it has so many advantages and the whole concept of it is also rational. It works for both the parties as it provides temporary jobs to new faces and eventually it also helps the brand to grow.

In this new emerging market trends this concept stays relevant as it helps the brands to create a good bond with the audience by promoting their products through Influencer Marketing as the influencer is one of us so it is easier to build the customer’s trust. When these brands gain customers trust it is much easier for them to increase sales and also have a huge market share.

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Fox, S. (1984). Empowerment as a catalyst for change: an example for the food industry. *Supply Chain Management*, 2(3), 29–33.

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- **Unpublished dissertation/ paper:**

Uddin, K. (2000). A Study of Corporate Governance in a Developing Country: A Case of Bangladesh (Unpublished Dissertation). Lingnan University, Hong Kong.

- **Article in newspaper:**

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- **Website of any institution:**

Central Bank of India (2005). *Income Recognition Norms Definition of NPA*. Retrieved August 10, 2005, from <http://www.centralbankofindia.co.in/home/index1.htm>, viewed on

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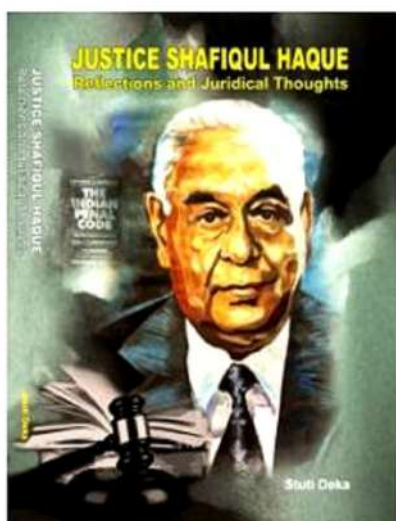


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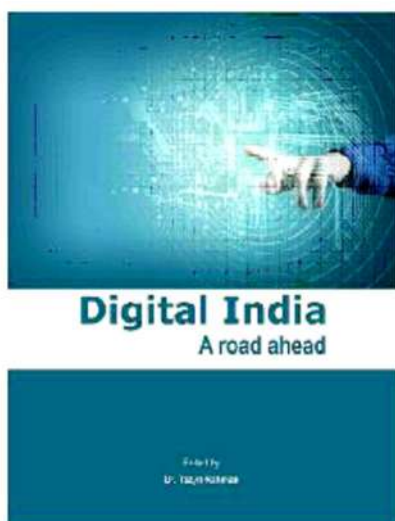
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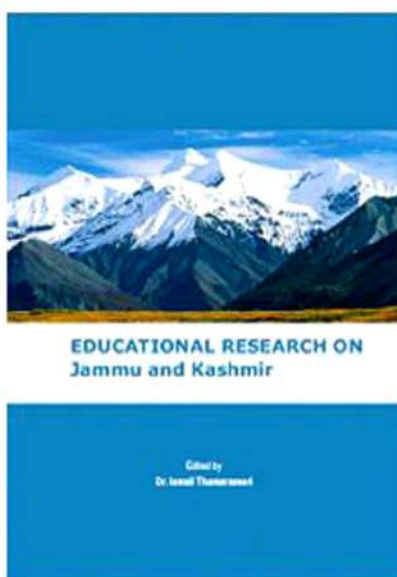
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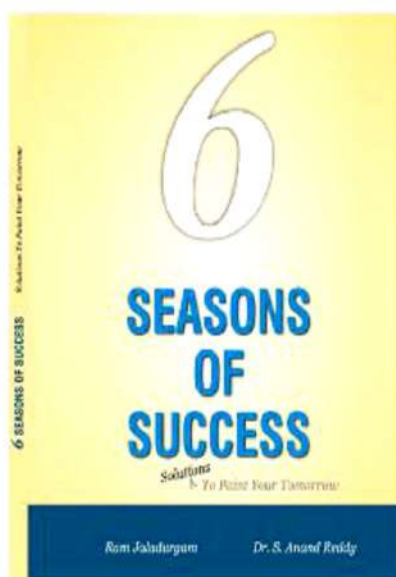
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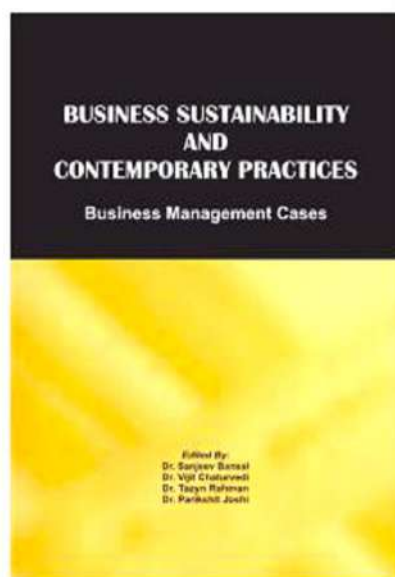
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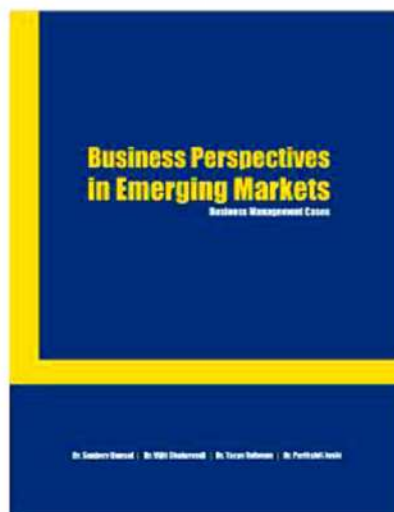
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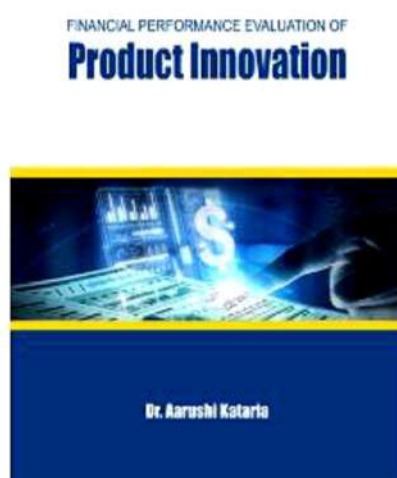
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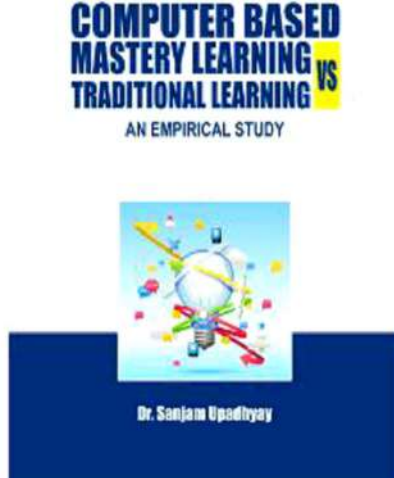
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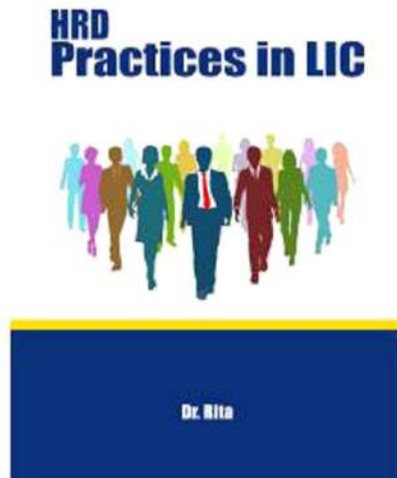
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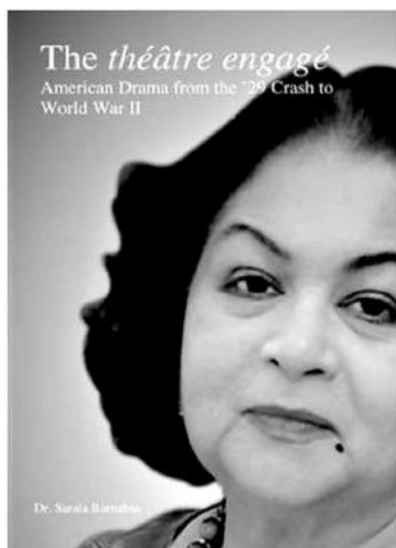
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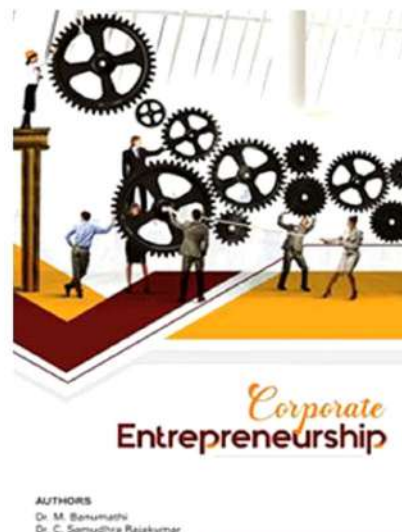
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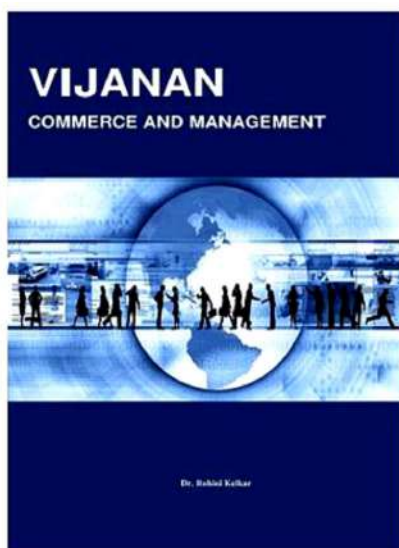
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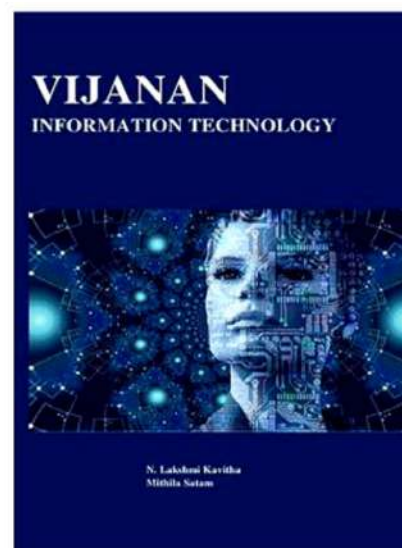
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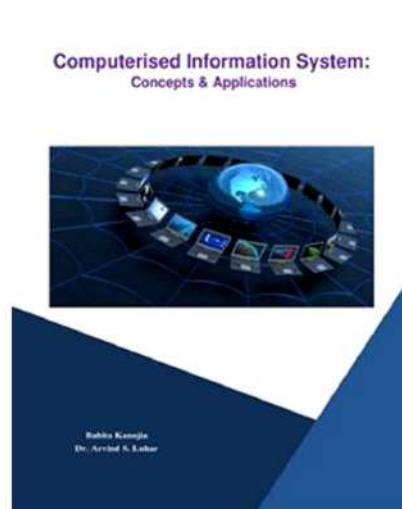
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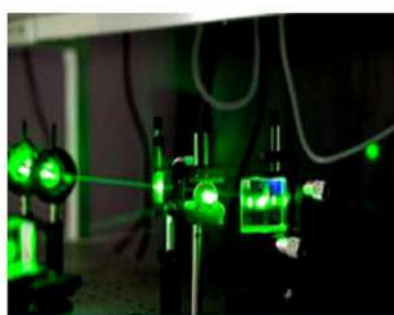


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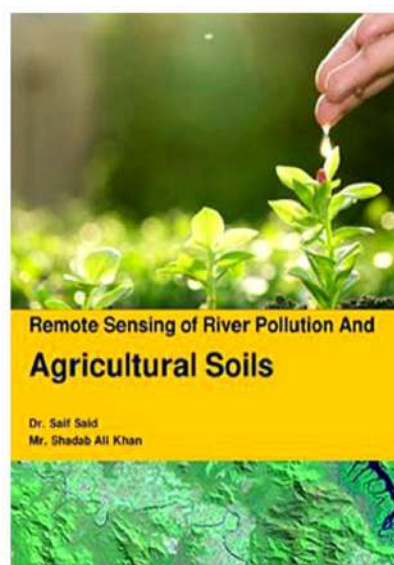
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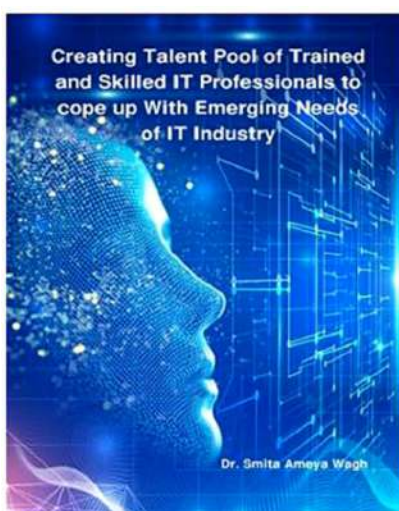
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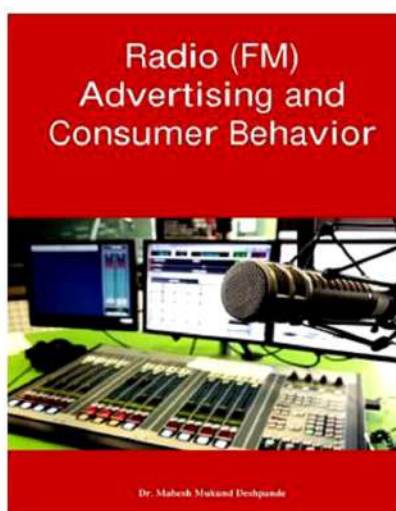
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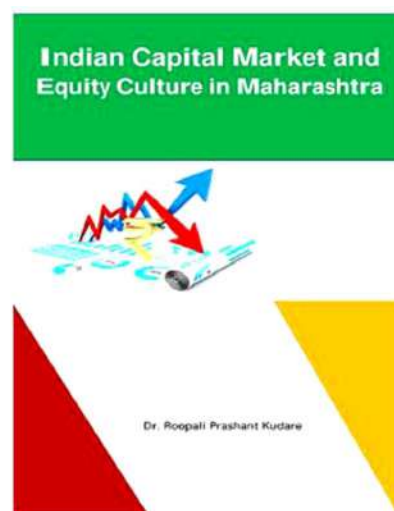
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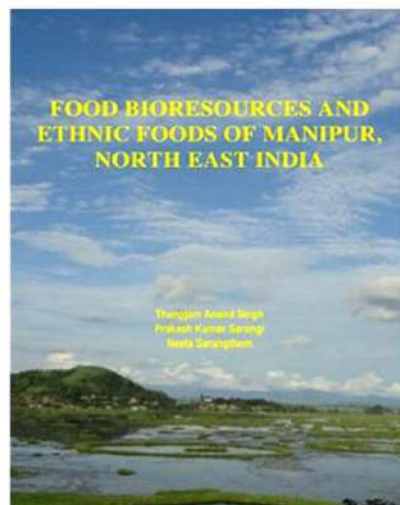
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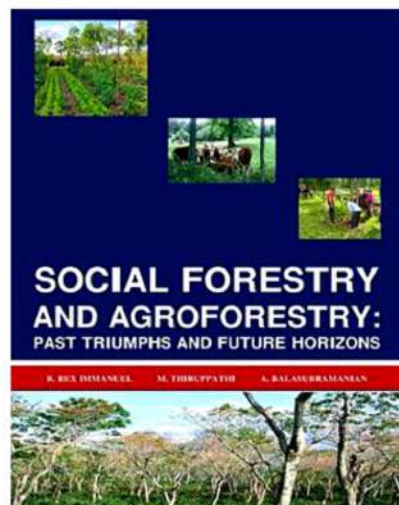
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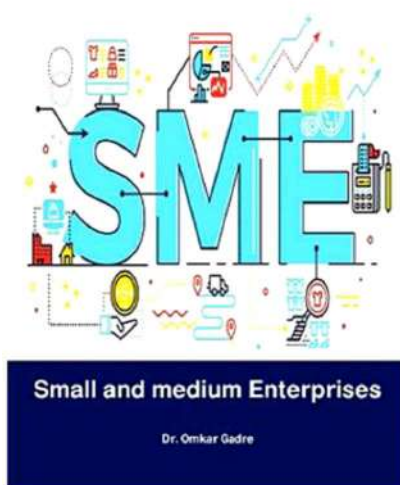
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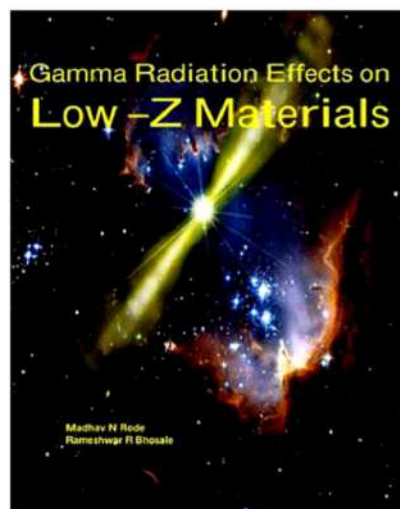
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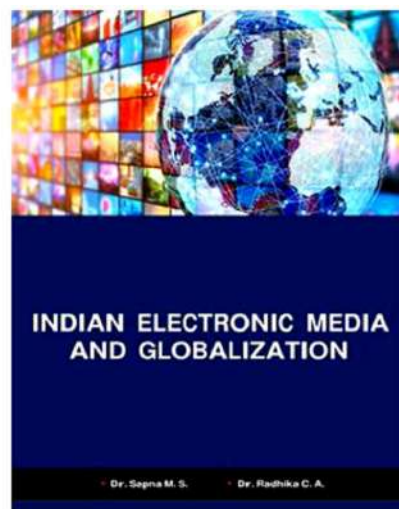
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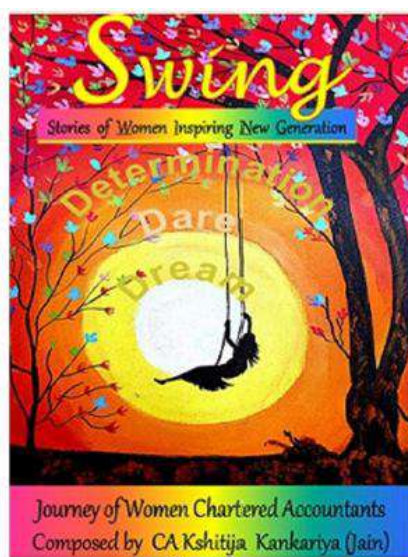
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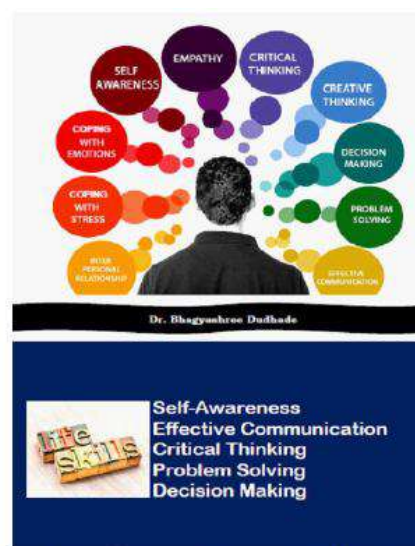
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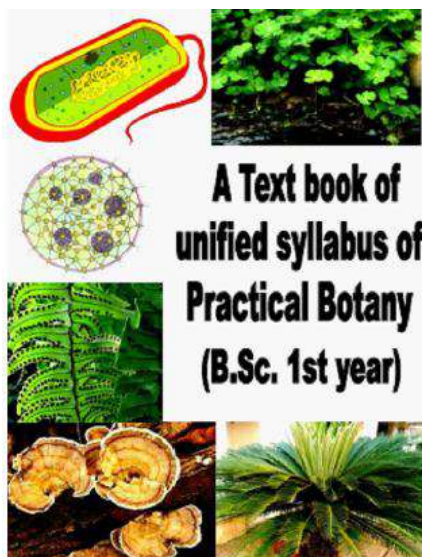
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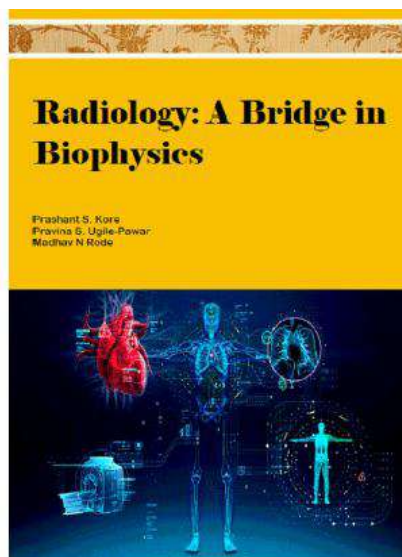
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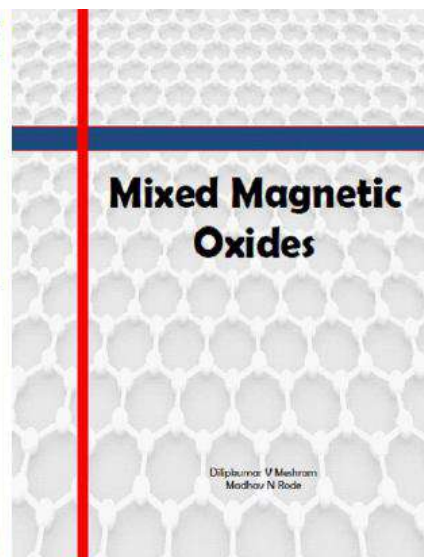
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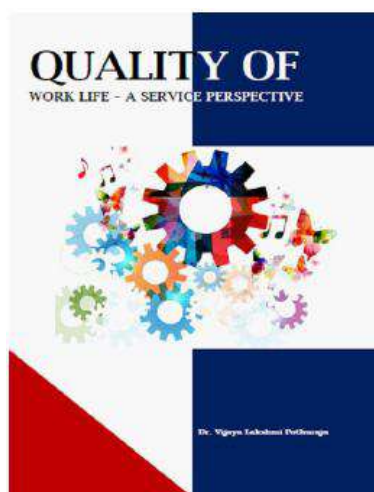


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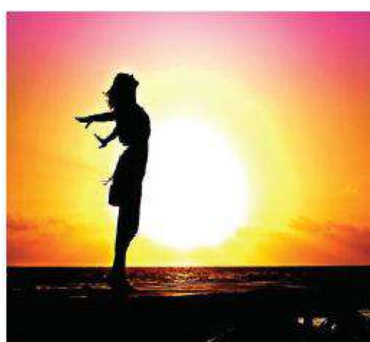
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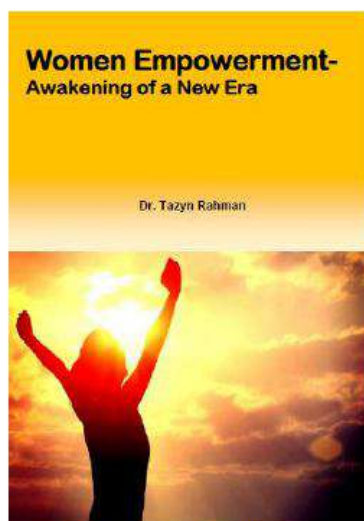


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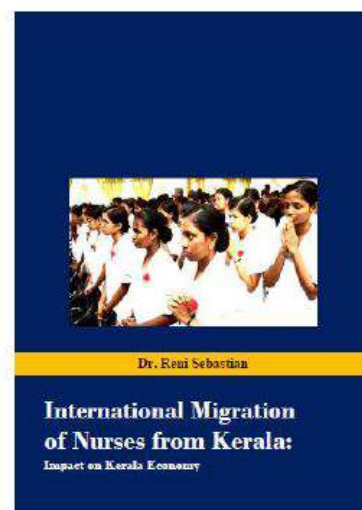


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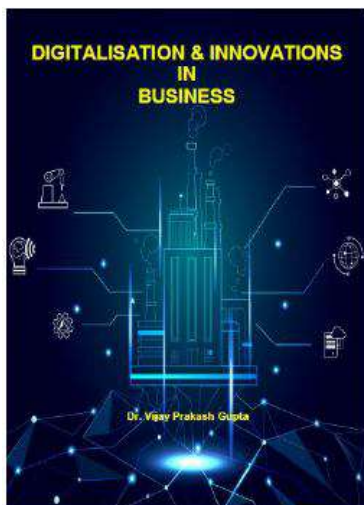


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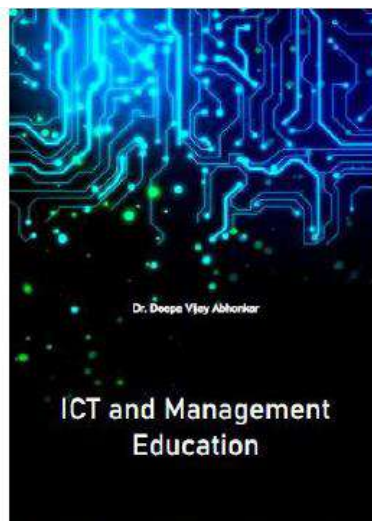
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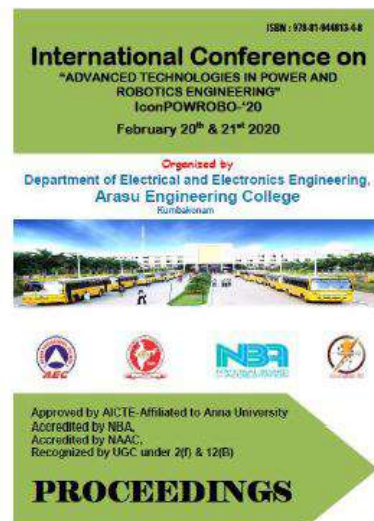
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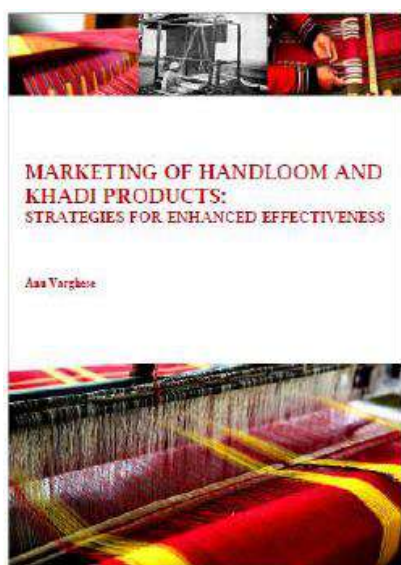
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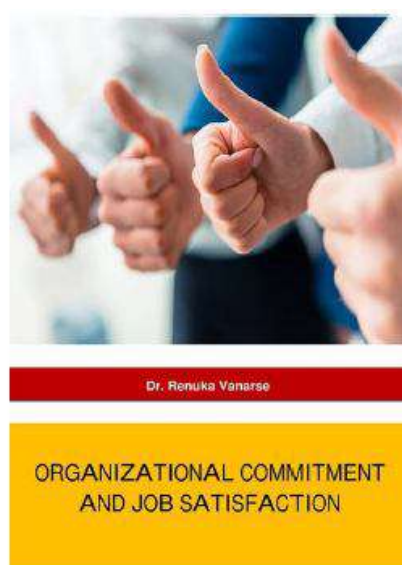
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