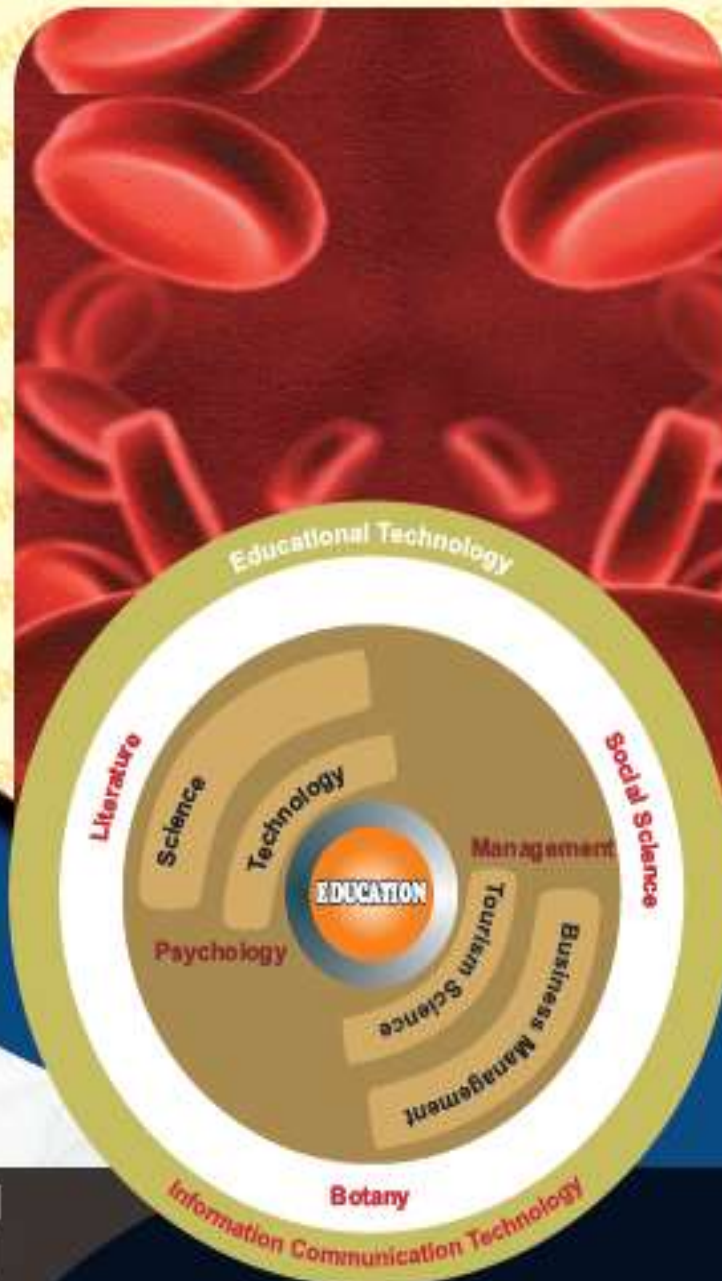




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**SPECIAL ISSUE ON A ROAD MAP OF VIKSIT  
BHARAT @ 2047: REDEFINING INDIA'S ECONOMY  
AS A GLOBAL BENCHMARK**

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## A COMPREHENSIVE REVIEW ON MARAMBAL PADA AND ITS MANGROVE BIODIVERSITY

**Manisha Patil & Prof (Dr.) Manisha Kulkarni**

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### Abstract

*Marambal Pada, located in the Palghar district of Maharashtra, is an important area identified for its rich biodiversity, particularly its mangrove ecosystems. Mangroves are one of vital coastal environments that play important role in conserving biodiversity, protecting coastlines, and mitigating climate change. This review explores the significance of Marambal Pada's mangrove biodiversity, its ecological role, and ongoing conservation efforts aimed at preserving this unique habitat. It also delves into the socio-economic and ecological benefits derived from mangroves and their vulnerability to threats like urbanization, pollution, and climate change. The paper concludes with recommendations for strengthening preservation initiatives and promoting sustainable ecotourism in the area.*

**Keywords:** Mangrove, Biodiversity, Marambal Pada, Ecosystem.

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### Introduction

Marambal Pada, located in the Palghar district of Maharashtra, near Mumbai, is a critical coastal ecosystem known for its vivacious mangrove biodiversity. Mangroves, which are coastal forests of salt-tolerant trees, provide a range of ecological, economic, and social benefits. These ecosystems play a vital role in mitigating climate change, protecting coastlines from erosion, providing breeding grounds for marine life, and subsidiary local economies. Marambal Pada's mangrove forests not only offer significant ecological services but also serve as an educational and eco-tourism hub for understanding coastal biodiversity and conservation efforts.

Marambal Pada is home to a Mangrove Biodiversity Information Centre developed by the Mangrove Foundation. This center aims to teach visitors about the significance of mangroves and the rich biodiversity they support. The center features interactive displays, including a 3D lenticular display showcasing underwater marine life, providing an immersive experience for visitors.

The surrounding area is characterized by mangrove forests that play a crucial role in coastal protection, biodiversity conservation, and carbon sequestration. The Mangrove Foundation has undertaken several initiatives to endorse ecotourism and raise alertness about mangrove conservation in this region.

In addition to the Mangrove Biodiversity Information Centre, the Mangrove Foundation has developed other ecotourism infrastructure, such as the Mangrove Park at Gorai, Mumbai. This park features an elevated boardwalk with glass flooring, allowing visitors to walk above the mangrove forest, and an interactive interpretation center utilizing virtual reality technology to enhance the educational experience.

These efforts aim to foster a deeper understanding of mangrove ecosystems and their status, thereby endorsing conservation and sustainable use of these vital coastal habitats. Mangroves are incredibly important ecosystems with a range of environmental, ecological, and socio-economic benefits. Here is a deeper dive into their significance:

### Review of literature

Marambal Pada is situated along the western coast of India, where seawater meets freshwater, creating an ideal environment for mangrove forests. These forests thrive in the intertidal zone, where they face regular tidal fluctuations and saline water. The region's mangrove ecosystem plays a vital role in:

1. **Coastal Protection:** Mangroves act as a natural barrier against coastal erosion and storm surges. Their complex root systems trap sediments, which help stabilize shorelines and prevent soil loss, thus protecting coastal communities from the impact of high tides and storms.
2. **Biodiversity Support:** The mangrove ecosystem at Marambhal Pada is home to a wide variability of plant and animal species. The dense, saline environment of the mangroves serves as a crucial environment for juvenile fish, crabs, mollusks, and many other marine species.
3. **Climate Change Mitigation:** Mangroves are highly efficient carbon sinks. They store large amounts of carbon in both their above-ground biomass and in the soil. This ability to sequester carbon helps mitigate climate change by reducing atmospheric CO<sub>2</sub> levels.

**Water Filtration:** The roots of mangrove trees filter sediments and pollutants, thereby cultivating water quality and preventing the eutrophication of nearby marine homes, such as coral reefs and seagrass beds.

### Research Gap

The main challenges facing Marambal Pada's mangrove ecosystem include:

1. **Urbanization and Development:** Rapid urban development around Mumbai and its surrounding areas puts pressure on mangrove forests. Coastal land reclamation for infrastructure and industry leads to habitat loss.
2. **Pollution:** Coastal pollution, including plastic waste, sewage, and oil spills, affects the health of mangrove ecosystems and the marine species that depend on them.
3. **Climate Change:** Rising sea levels and changing weather patterns threaten the stability of mangrove forests. Mangrove species may struggle to adapt to these rapidly changing environmental conditions.
4. **Overharvesting:** Unsustainable collection of wood and other resources from mangrove forests can degrade these ecosystems if not properly managed.
5. **Awareness:** For protection and conservation of mangroves and biodiversity, programs like sustainable farming education and fishermen awareness can be done.

To address these challenges, it is crucial to integrate conservation efforts with sustainable development practices, increase community involvement in mangrove restoration, and continue educating the public about the importance of mangroves for ecological and socio-economic well-being.

### Objective and Study of Area

The mangrove biodiversity at Marambal Pada includes a diversity of plant and animal species that contribute to the ecological complexity of the ecosystem. Some of the prominent mangrove species found here include:

1. **Rhizophora (Red Mangrove):** Known for its distinctive prop roots, this species thrives in the intertidal zone and plays an important role in stabilizing the soil.
2. **Avicennia (Black Mangrove):** Characterized by its aerial roots (pneumatophores), this species is highly tolerant to saline water and plays a critical role in oxygen exchange in the waterlogged soil.

3. **Laguncularia (White Mangrove):** Found in areas with slightly less salinity, this species has small, white flowers and plays a role in stabilizing the sediment and supporting other species.
4. **Sonneratia:** Known for its large, showy flowers, Sonneratia species thrive in tidal environments and are important for nutrient cycling.

Beyond the plant species, Marambal Pada supports a rich array of fauna. Key animals that benefit from the mangrove ecosystem include:

- **Marine Life:** Juvenile fish species like mullets, groupers, and snapper find refuge in the mangroves, using them as nursery grounds before migrating to open waters. Additionally, crabs, shrimp, and mollusks rely on the mangrove mudflats for food and shelter.
- **Birds:** The mangrove ecosystem is also a vigorous habitat for several bird species, including waders, shorebirds, and migratory birds. Species like the Western Reef Heron, sandpipers, and kingfishers use mangrove forests for nesting and feeding.
- **Invertebrates:** The rich detritus in mangrove forests supports a diverse community of invertebrates, including mudskippers, mangrove crabs, and various mollusks, which are vital components of the food web.

Mangroves in Marambal Pada provide a extensive range of ecological services:

1. **Nutrient Cycling:** Mangrove ecosystems contribute to nutrient cycling by breaking down organic material in the water and soil, creating a productive environment for marine species. This supports local fisheries and helps maintain ecosystem balance.
2. **Sediment Trapping:** The dense root systems of mangroves trap sediments, preventing soil erosion and stabilizing the coast. This helps mitigate the impact of tidal waves and protects the integrity of coastal landscapes.
3. **Carbon Sequestration:** Mangroves are one of the most efficient carbon sinks on the planet. They store carbon in their biomass and in the waterlogged soil, where the lack of oxygen slows decomposition. This makes mangroves critical for combating climate change.
4. **Flood Mitigation:** The root structures of mangroves absorb excess water during high tides and storms, reducing the impact of flooding on coastal communities.

The mangrove forests of Marambal Pada contribute to the livelihood and economy of local communities in several ways:

1. **Fishing:** Mangrove ecosystems support local fisheries by providing a habitat for fish and shellfish during their early stages of life. The region's fishing community relies on these rich marine resources for their livelihood.
2. **Eco-Tourism:** Marambal Pada has become an emerging destination for eco-tourism providing different activities like Boat safari, Mangrove trail and bird watching. Boat safari is provided with limited time slots as 8.00 AM to 9.30AM and 4.00 PM to 5.30 PM so that flora and fauna should not be disturb. The Mangrove Biodiversity Information Centre located in the area educates visitors on the importance of mangroves, their role in coastal protection, and the diverse species they support. The educational programs and nature trails promote environmental awareness while providing a source of income for local communities.
3. **Cultural Practices:** Local societies use mangrove resources sustainably for firewood, traditional medicines, and building materials. However, overharvesting, and unmanageable practices need to be addressed to prevent degradation of the ecosystem.

Despite their importance, the mangrove forests of Marambal Pada face significant threats from urbanization, pollution, and climate change. Conservation initiatives are crucial for protecting these ecosystems and ensuring their long-term viability. Some key conservation efforts include:

1. **Mangrove Restoration:** Restoration projects, including replanting and afforestation programs, aim to reverse the degradation of mangrove habitats. These efforts are supported by local governments, NGOs, and community organizations.
2. **Sustainable Fishing Practices:** Promoting sustainable fishing practices and reducing overfishing is essential for maintaining the health of marine life dependent on the mangrove ecosystem.
3. **Protected Area Status:** Marambal Pada's mangrove forests have been designated as protected areas to prevent illegal deforestation and land-use changes. This helps safeguard the ecosystem from unregulated development.
4. **Public Awareness:** The Mangrove Biodiversity Information Centre plays a key role in raising awareness about the importance of mangroves. Educational programs and eco-tourism initiatives promote conservation efforts and encourage responsible resource use.

### Conclusion

The findings of this review demonstrate the ecological and biological significance of Marambal Pada as a biodiversity hotspot, emphasizing the need for preservation efforts to sustain its biodiversity. Generally waste dumping is the biggest threat to mangroves ecosystem hence to avoid that tourist actions like throwing waste, etc. should be restricted and the area around the mangroves must be kept clean and well maintained. Marambal Pada's mangrove forests are an invaluable natural resource, providing essential ecological services, supporting biodiversity, and contributing to the livelihoods of local communities. The region's mangrove ecosystem offers numerous benefits, including coastal protection, climate change mitigation, and enhanced biodiversity. By strengthening legal protections, promoting sustainable practices, and fostering community involvement, Marambal Pada's mangrove biodiversity can be preserved for future generations. Government of Maharashtra taken great initiative to protect and promote the growth for mangroves ecosystem in the form of Mangrove and Marine Biodiversity Information center, Marambal Pada.

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## PARENTAL STRUGGLES IN CHOOSING THE RIGHT PRIMARY EDUCATION BOARD AND ITS IMPACT

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### Abstract

*Choosing a primary education board in India is a critical decision influenced by various institutional, educational, and socio-economic factors. This study examines the key determinants guiding parental choices among CBSE, ICSE, IB, State Boards, and public schools while evaluating their impact on student academic achievement and future prospects. It assesses parental satisfaction concerning curriculum, extracurricular activities, and career opportunities, alongside the influence of household income and parental education levels on board selection.*

*Findings reveal that curriculum quality, board reputation, career prospects, and financial considerations play a crucial role in decision-making. Household income and parental education strongly correlate with specific board preferences, while societal pressures also impact choices. The study highlights disparities in access to quality education, raising concerns about equity and affordability. Policy recommendations emphasize fee regulation, curriculum standardization, and inclusive education policies to ensure equal opportunities. By providing insights into parental decision-making and satisfaction, the research aims to support educators, policymakers, and parents in making informed educational choices.*

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**Keywords:** - Equity and inclusion, Career opportunities, Policy interventions, Curriculum, Education

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### Introduction

The selection of an education board plays a crucial role in shaping students' academic foundations, skill development, and future opportunities, directly impacting India's vision of Viksit Bharat @2047, which emphasizes education and skilling as pivotal drivers of national progress. As India aspires to become a developed nation by 2047, it is imperative to provide an education system that nurtures critical thinking, creativity, and global competencies. Choosing the right education board—whether CBSE, ICSE, IB, State Boards, or Public Schools—significantly influences students' access to quality education, extracurricular activities, and skill-building opportunities. However, the high cost of education, particularly in private and international boards, poses challenges for middle and lower-income families, impacting access to quality education. Understanding these dynamics is crucial for designing inclusive educational policies that align with India's vision of Viksit Bharat @2047, which emphasizes education and skilling as pillars of national development.

The roots of Indian education can be traced back to the ancient Gurukul system, where learning was holistic and personalized, with a focus on the guru-shishya (teacher-student) relationship. However, the introduction of the modern school system in the 1830s by Lord Macaulay marked a shift towards Westernized education, emphasizing classroom-based learning and "modern" subjects like science and mathematics. Post-independence, India's constitution enshrined the Right to Education, aiming to provide free and compulsory education for all children aged 6 to 14. This led to the establishment of various educational boards, each with its own curriculum and approach, adding to the diversity and complexity of the system.

The selection of a primary education board is a crucial decision for parents to shape their child's academic journey and future prospects. This decision is influenced by a complex interplay of socio-economic factors, educational aspirations, and institutional structures. The Indian education system offers a diverse landscape of primary education boards, each with its own curriculum, pedagogy, and assessment methods. The major boards include:

- State Boards: Affiliated with respective state governments, catering to a large proportion of students and often perceived as affordable.
- Central Board of Secondary Education (CBSE): A national board known for its standardized curriculum and alignment with national-level competitive examinations.
- Indian Certificate of Secondary Education (ICSE): Emphasizing a comprehensive curriculum with a focus on language development and analytical skills.
- International Baccalaureate (IB) and IGCSE: Offering internationally recognized curricula with a focus on holistic development and global perspectives.
- The Indian education system is a complex landscape shaped by its rich history, diverse curricula, and a multitude of regulatory frameworks. This complexity creates both opportunities and challenges for parents, educators, and policymakers alike.

Education is one of the most crucial decisions parents make for their children, shaping their academic journey, career prospects, and overall development. In India, choosing the right primary education board has become increasingly challenging due to the vast differences in curriculum, teaching methodologies, and future opportunities offered by various boards such as CBSE, ICSE, IB, IGCSE, and State Boards. However, this choice is not solely based on academic preferences—it is also deeply influenced by financial constraints, social expectations, and institutional policies.

One of the biggest hurdles parents face is the fee structure associated with different boards and schools. While State Board schools offer relatively affordable education, they are witnessing a decline in enrolment as parents lean towards CBSE, ICSE, and international boards that promise a competitive edge. The fees for CBSE and ICSE schools range from ₹50,000 to ₹2,00,000 per year in private institutions, whereas IB and IGCSE schools can charge anywhere between ₹3,00,000 to ₹10,00,000 annually, making them accessible only to high-income families. This widening gap in affordability forces many parents to stretch their finances, take loans, or settle for schools that may not align with their child's long-term academic needs.

Adding to this struggle, many prestigious schools have stringent admission criteria that go beyond a child's capabilities—they assess parental income, educational qualifications, and even social status. This creates an invisible barrier for middle-class and lower-income families, making quality education a privilege rather than a right. The emphasis on English-medium education further marginalizes regional language schools, leading to the closure of many Gujarati, Hindi, and other vernacular-medium institutions. At a societal level, the preference for elite boards over regional and government schools exacerbates educational inequality, making it harder for children from modest backgrounds to compete on an equal footing.

This paper explores the financial burden, societal pressures, and systemic challenges parents face in selecting the right education board. It also examines the long-term impact on students and the broader consequences for society. There is an urgent need to address these disparities and work towards an inclusive education system where every child, regardless of financial background, has access to quality learning opportunities.

### Problem Statement

Parents in India face many challenges when it comes to navigating the primary education system. One major issue is the lack of clarity and transparency; understanding the differences in curricula, assessment methods, and future opportunities linked to each board can be quite complex and overwhelming. Financial constraints also play a significant role, as the varying fees across different boards limit access to certain educational options for many families. This financial strain is often worsened by peer and societal pressure, where the urge to meet social expectations can heavily influence parental decisions, sometimes leading them away from what might be best for their child's unique needs and interests. Additionally, parents often deal with an overload of information and conflicting advice from various sources, which adds to their confusion and anxiety. Together, these challenges make choosing the right educational board a daunting task for many parents in India.

### Review of Literature

1. A study by **Mukhopadhyay and Sarangapani (2018)** emphasizes that parents consider factors such as curriculum quality, reputation of the board, availability of extracurricular activities, and perceived future opportunities when selecting an education board. For instance, parents perceive the CBSE board as being aligned with national entrance examinations, while ICSE and international boards (IB, IGCSE) are viewed as offering holistic education and global exposure.
2. **Goyal and Pandey (2019)** argue that socio-economic status plays a crucial role. Parents with higher incomes and aspirations tend to favor international boards despite their high fees, whereas state boards are often chosen for affordability.
3. **Kumar and Mehta (2019)** discuss how the process contributes to increasing stress among parents, as they navigate peer pressure, societal expectations, and financial constraints. The disparity between education boards has also widened the gap in educational opportunities, particularly between urban and rural areas.
4. A report by **UNESCO (2020)** highlights that excessive focus on particular boards leads to societal inequality, where access to quality education becomes restricted to those who can afford premium boards like IB and IGCSE. This further perpetuates the divide in career opportunities for children from diverse socio-economic backgrounds.
5. **Mishra (2021)** highlights the long-term developmental impact of the chosen board. Students exposed to a balanced curriculum with extracurricular activities develop better social, emotional, and cognitive skills, as compared to those confined to academic rigors.
6. **Sharma (2022)** shows that parental anxiety is intensified due to conflicting advice from educational consultants, school marketing strategies, and social influences. This anxiety directly impacts family dynamics and decision-making processes, creating a ripple effect on student well-being.
7. **Jamatia (2023)** emphasizes that parental economic challenges significantly affect educational opportunities for children in India. Financial constraints, coupled with societal expectations, limit investment in education, impacting school choice and student performance. This highlights the need for financial assistance and awareness programs to ensure equal educational opportunities.
8. **Narayanan (2013)** explores school choice in rural North India, showing that parents prioritize school facilities and functionality. The study reveals that private schools are preferred when

local government schools are perceived as lower quality, influencing parental decisions and educational outcomes

9. **Kumar and Korla (2024)** investigate parental involvement in primary education in Himachal Pradesh, revealing that active engagement with teachers and Parent-Teacher Associations positively influences student achievement. The study highlights cultural and social factors affecting parental participation.
10. **Gill, Narwana, and Choudhury (2023)** examine household expenditure on compulsory education in Punjab, showing that private schools impose financial burdens, especially on marginalized groups. The study calls for regulation to address socio-economic disparities.

### Research Gap

Despite extensive literature on parental choices in education and the impact of socio-economic factors on school selection in India, several gaps remain unaddressed concerning the selection of specific education boards such as CBSE, ICSE, IB, State Boards, and Public Schools. While studies highlight general factors influencing school choice, such as educational quality, socio-economic status, and parental involvement (Narayanan, 2013; Bussell, 1998), they do not specifically examine how these determinants vary across different education boards. Additionally, existing research (Dutta, 2014; Gill et al., 2023) underscores the role of household income and parental education in influencing school enrollment but lacks a focused analysis on how these factors impact the choice of a particular education board. Furthermore, parental satisfaction regarding curriculum quality, extracurricular activities, and perceived future opportunities is underexplored, particularly in the context of comparing different boards (Bussell, 2000; Harma 2009).

Moreover, while international boards (IB, IGCSE) are increasingly perceived as offering holistic education and global exposure (Jamatia, 2023), there is limited empirical evidence on whether these perceptions translate into higher parental satisfaction compared to national boards like CBSE and ICSE. Additionally, the impact of cultural and social factors, especially in rural versus urban settings, remains insufficiently explored (Kumar & Korla, 2024). Most studies also do not address the evolving expectations of parents influenced by globalization and digital learning platforms, which may significantly shape board selection decisions today.

Therefore, this research aims to fill these gaps by systematically analyzing the determinants of education board selection, assessing the role of parental education and income, and evaluating parental satisfaction with curriculum quality, extracurricular activities, and perceived future opportunities across different education boards in India. This approach will provide a comprehensive understanding of parental decision-making in contemporary educational contexts, guiding policymakers and educational institutions to tailor their offerings more effectively.

### Research Methodology

#### Research Design

The study follows a **descriptive and analytical research design**, utilizing primary data collected through a structured survey. The research examines the preferences, satisfaction levels, and challenges faced by parents while selecting a primary education board for their children.

#### Research Objectives

1. Identify the key determinants influencing parents selection of an education board (CBSE, ICSE, IB, State Board, Public Schools, etc.).
2. Assess the impact of household income on board selection.

3. Evaluate parental satisfaction with the selected education board regarding curriculum, extracurricular activities, and future opportunities.

### Research Methodology

- **Primary Data:** Collected through Google Forms using a structured questionnaire.
- **Secondary Data:** Literature reviews, government reports, educational board websites, and previous studies on parental decision-making in education.

### Sampling Method

- **Population:** Parents of children studying in primary schools in Mumbai.
- **Sampling Technique:** Stratified random sampling to ensure representation across different socio-economic classes and education boards.
- **Sample Size:** 100 parents from Mumbai suburbs, were questioned and their response was further analysed.
- **For testing hypothesis, Kruskal-Wallis Test and chi square test were used. SPSS tool was used for data analysis.**

### Data Analysis:

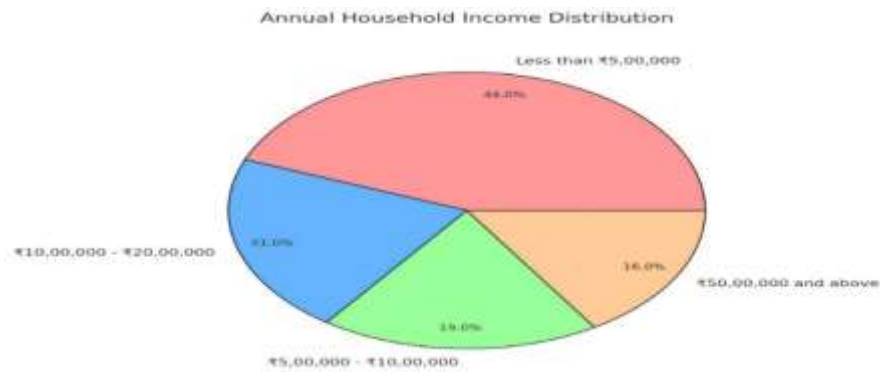
Parents in India face a complex decision when selecting an education board for their children. The choice is influenced by several academic, financial, and social factors:

1. **Curriculum and Academic Rigor** – CBSE and ICSE are preferred for their structured syllabus, while IB and IGCSE focus on international pedagogy. State Boards vary in quality, influencing perceptions.
2. **School Reputation and Quality** – Parents consider faculty qualifications, infrastructure, extracurricular activities, and past student success.
3. **Fee Structure and Affordability** – IB and IGCSE schools charge ₹3–10 lakh annually, making them accessible to high-income families, whereas State Board schools are more affordable.
4. **Parental Education and Occupation** – Educated and high-income parents often prefer academically rigorous or globally recognized boards.
5. **Proximity and Accessibility** – Parents prioritize nearby schools to reduce travel time and ensure child safety.
6. **Cultural and Religious Values** – Some families choose schools aligning with their cultural or religious beliefs.
7. **Language of Instruction** – English-medium schools are preferred for better career prospects, leading to the decline of regional language institutions.
8. **Future Mobility** – Families with transferable jobs opt for nationally/internationally recognized boards like CBSE, IB, or IGCSE for easier transitions.

These factors collectively shape parental decisions, contributing to the evolving educational landscape and increasing disparities in access to quality education.

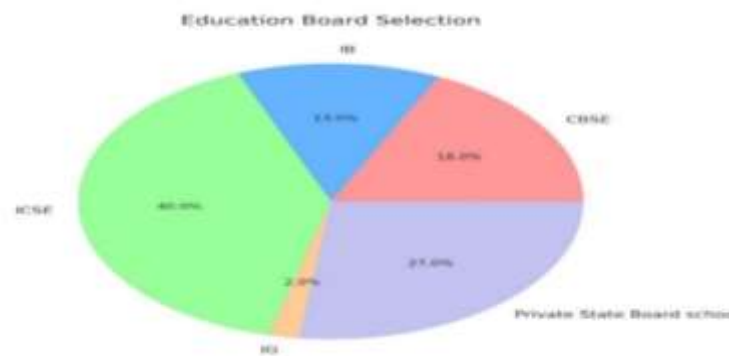
### Primary data collection and interpretations:

Through structured questionnaire, data was collected from 100 respondents residing in Mumbai suburbs and following are the responses of respondents on different basic questions.



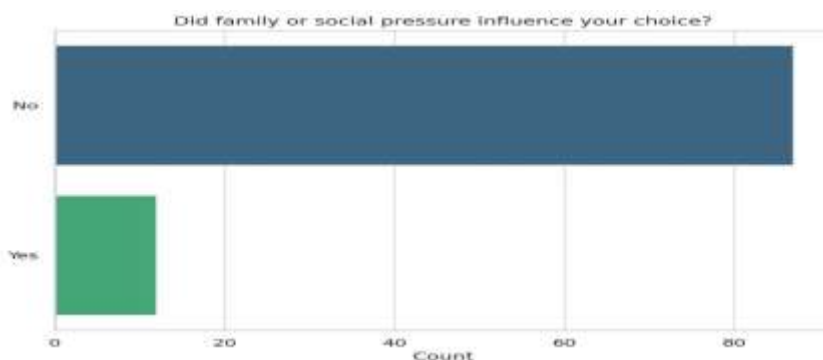
(Figure 1: Household Income Distribution)

This pie chart shows the annual household income distribution, where the largest segment (44%) earns less than ₹5,00,000, and the smallest (16%) earns ₹20,00,000 and above. It highlights the income diversity among families.



(Figure 2: Education Board selection)

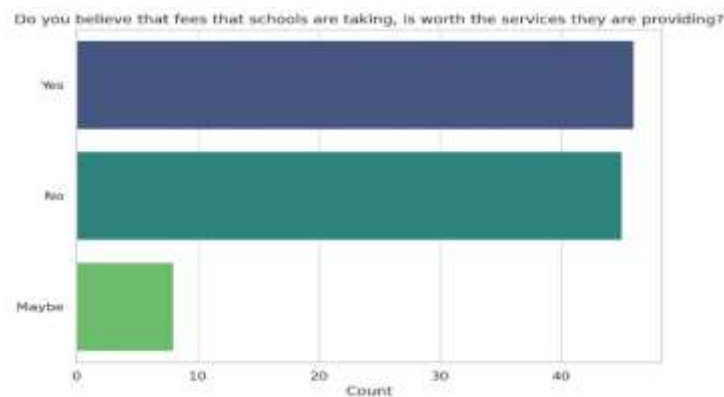
This pie chart shows the distribution of education board selection, where ICSE is the most preferred (40%) and IG the least (2%), and reflecting varying popularity of different boards.



(Figure 3: influence of family or society on choosing board)

This bar chart shows that most parents (a significant majority) were not influenced by family or social pressure when choosing an education board, while a smaller portion admitted to external influence.





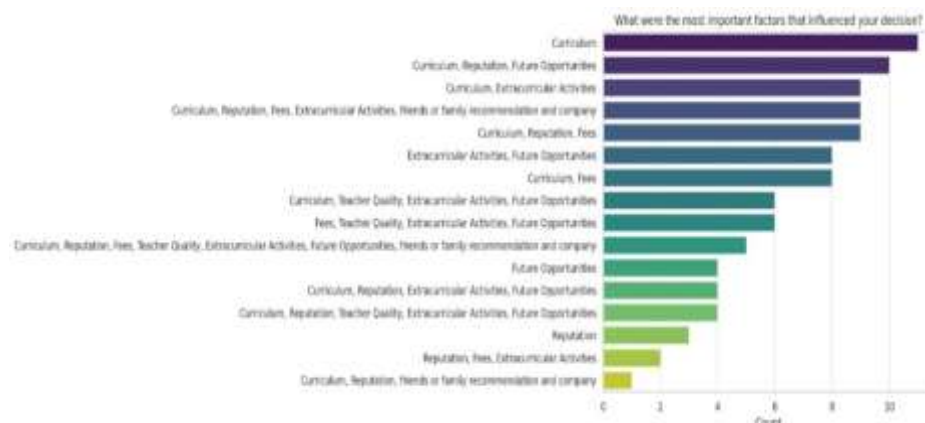
**(Figure 4: Parental Perception on School Fees vs. Service Quality)**

This bar chart shows mixed opinions on whether school fees are justified by the services provided, with a near-equal split between "Yes" and "No" responses and fewer people unsure ("Maybe").



**(Figure 5: Impact of Chosen Education Board on finances of the Families)**

This bar chart shows that while many families didn't face financial challenges due to their chosen education board, a significant number did experience some burden or uncertainty.



**(Figure 6: Factors influencing decision while choosing board)**

This chart shows that "Curriculum" was the most influential factor in decision-making, often combined with factors like reputation, extracurricular activities, and future opportunities. Factors like "Reputation" and "Friends or family recommendation" had relatively lower influence on their own.

### Testing of hypothesis:

#### Hypothesis 1

(H<sub>0</sub>): Household income does not significantly influence the choice of a primary education board.

(H<sub>1</sub>): Household income significantly influences the choice of a primary education board

To test this hypothesis two variables are considered i.e. income and choice of board and its influence is measured using Chi-Square Test.

#### Frequencies

Income group (1- lowest income group  
whereas 4 – highest income group)

	Observed N	Expected N	Residual
1	44	24.8	19.3
2	33	24.8	8.3
3	8	24.8	-17.8
4	15	24.8	-9.8
Total	100		

Board (1- private state board, 2-CBSE, 3-ICSE, 4- IB, 5-IG)

	Observed N	Expected N	Residual
1	28	19.8	8.2
2	24	19.8	4.2
3	33	19.8	13.2
4	12	20	-8.8
5	3	19.8	-16.8
Total	100		

#### Test Statistics

	Income	Board
Chi-Square	34.293 <sup>a</sup>	31.253 <sup>b</sup>
df	3	4
Asymp. Sig.	.000	.000

Based on chi square value, since p value is less than .5, We reject null hypothesis and accept alternative hypothesis.

#### Hypothesis 2

(H<sub>0</sub>): There is no significant relationship between parental satisfaction for their child's performance and overall growth with the chosen education board

(H<sub>1</sub>): There is significant relationship between parental satisfaction for their child's performance and overall growth with the chosen education board.



**Rankings between boards and satisfaction level.**

	<b>Board</b>	<b>N</b>	<b>Mean Rank</b>
<b>The chosen board or school has helped your child develop essential skills such as critical thinking, problem-solving, and communication</b>	<b>1</b>	<b>28</b>	<b>34.02</b>
	<b>2</b>	<b>24</b>	<b>67.00</b>
	<b>3</b>	<b>33</b>	<b>54.32</b>
	<b>4</b>	<b>12</b>	<b>40.23</b>
	<b>5</b>	<b>3</b>	<b>51.50</b>
	<b>Total</b>	<b>100</b>	
<b>The chosen board or school provided adequate opportunities for your child's overall development compared with fees that you have paid</b>	<b>1</b>	<b>28</b>	<b>45.54</b>
	<b>2</b>	<b>24</b>	<b>54.27</b>
	<b>3</b>	<b>33</b>	<b>50.11</b>
	<b>4</b>	<b>12</b>	<b>49.05</b>
	<b>5</b>	<b>3</b>	<b>59.83</b>
	<b>Total</b>	<b>100</b>	
<b>Do you believe the chosen board will help your child in higher education and career prospects when you compare with other board students and its fees</b>	<b>1</b>	<b>28</b>	<b>40.21</b>
	<b>2</b>	<b>24</b>	<b>69.35</b>
	<b>3</b>	<b>33</b>	<b>46.30</b>
	<b>4</b>	<b>12</b>	<b>41.45</b>
	<b>5</b>	<b>3</b>	<b>58.50</b>
	<b>Total</b>	<b>100</b>	
<b>The chosen board has provided adequate opportunities for my child's emotional and societal development.</b>	<b>1</b>	<b>28</b>	<b>46.91</b>
	<b>2</b>	<b>24</b>	<b>59.90</b>
	<b>3</b>	<b>33</b>	<b>46.32</b>
	<b>4</b>	<b>12</b>	<b>46.41</b>
	<b>5</b>	<b>3</b>	<b>53.33</b>
	<b>Total</b>	<b>100</b>	
<b>How satisfied are you with your child's academic performance in the chosen board</b>	<b>1</b>	<b>28</b>	<b>56.11</b>
	<b>2</b>	<b>24</b>	<b>56.94</b>
	<b>3</b>	<b>33</b>	<b>42.82</b>
	<b>4</b>	<b>12</b>	<b>39.50</b>
	<b>5</b>	<b>3</b>	<b>55.00</b>
	<b>Total</b>	<b>100</b>	

**Kruskal-Wallis Test on level of satisfaction**

	[ The chosen board or school has helped your child develop essential skills such as critical thinking, problem-solving, and communication]	[ The chosen board or school provided adequate opportunities for your child's overall development compared with fees that you have paid]	[Do you believe the chosen board will help your child in higher education and career prospects when you compare with other board students and its fees?]	[The chosen board has provided adequate opportunities for my child's emotional and societal development.]	[How satisfied are you with your child's academic performance in the chosen board.]
Chi-Square	25.551	2.409	20.426	5.261	9.206
Df	4	4	4	4	4
Asymp. Sig.	.000	.661	.000	.262	.056

Based on Kruskal-Wallis Test, we reject null hypothesis. And ranking suggests that overall parents who choose CBSE Board are more satisfied with their child's development.

### Conclusion

This study underscores the multifaceted nature of parental decision-making when selecting an education board, driven by factors such as curriculum quality, reputation, career prospects, and financial feasibility. While CBSE and ICSE are favoured for their structured syllabus and academic rigor, IB and IGCSE cater to high-income families seeking global exposure, with State Boards remaining an affordable alternative. Statistical analysis confirms a significant correlation between household income and board selection, with higher-income and more educated families opting for premium boards. Parental satisfaction varies, with CBSE excelling in academics, IB and IGCSE in holistic education, and concerns over high fees persisting. Financial strain and societal expectations also influence choices, exacerbating educational inequality. Additionally, most parents support government intervention to cap school fees and report paying donations, highlighting transparency issues in admissions. Parents further advocate for emphasizing practical learning, incorporating life skills and mental health education, and prioritizing student-teacher ratios. These findings stress the need for policy reforms, standardized fee structures, and greater inclusivity in primary education.

### Limitations of the study

- **Geographical Scope:** The study is limited to a Mumbai suburb, and the findings may not be generalizable to the entire country due to diverse socio-economic and cultural contexts across India.
- **Sample Bias:** The sample might be biased towards a particular board or may not disclose true facts about income and school fees.
- **Subjectivity:** Parental perceptions and satisfaction are subjective and may not always accurately reflect the actual impact of the chosen board on student development.

Suggestions & Recommendation:

To ensure equitable access to quality education, policymakers should implement standardized fee structures and regulate donation practices to enhance transparency. Schools must focus on reducing exam pressure, integrating practical learning, and incorporating life skills and mental health education. Additionally, improving student-teacher ratios and ensuring affordability through financial aid or subsidies can help bridge educational disparities. Parents should prioritize holistic development over societal pressures, while schools must balance academic rigor with well-rounded growth opportunities. These measures will foster an inclusive, student-centric education system that benefits all socio-economic groups.

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**VIKSIT BHARAT 2047: RETHINKING IDENTITY POLITICS AND REGIONALISM****Veena Kenchi**

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**Abstract**

*India's vision for Viksit Bharat 2047 aims for economic progress and social inclusion, but regional political dynamics pose challenges. The Sons of the Soil ideology in Maharashtra and Assam has influenced migration, employment, and economic disparities. In Maharashtra, political movements advocating for Marathi-speaking workers have led to tensions with migrant communities. In Assam, historical conflicts over immigration and land rights have shaped exclusionary policies. While these movements seek to protect local identities, they also contribute to economic imbalances and social unrest.*

*To address these issues, initiatives like the Aspirational Districts Programme (ADP) and Skill India Mission promote equitable development. ADP improves education, healthcare, and infrastructure in underdeveloped regions, while Skill India enhances employability across states. However, political interference and resistance to labor mobility hinder their effectiveness.*

*Balancing regional aspirations with national integration requires strengthening cooperative federalism, investing in inclusive economic programs, and fostering inter-state collaboration. Addressing economic disparities and ensuring social cohesion are essential for sustainable development, ultimately realizing the vision of Viksit Bharat 2047.*

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**Keywords-** *Inclusive Development, Regional Politics, Sons of the Soil, Economic Disparities.*

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**Research Objectives-**

- Analyze the role of regional political movements in shaping economic and social development, particularly in Maharashtra and Assam.
- Examine the impact of the Sons of the Soil ideology on employment, migration patterns, and regional disparities in resource allocation.
- Assess the effectiveness of national initiatives such as the Aspirational Districts Programme (ADP) and Skill India Mission in addressing regional imbalances.
- Investigate socio-political conflicts arising from regional identity politics and their implications for national integration.
- Recommend policy measures to balance regional aspirations with national objectives, ensuring sustainable and inclusive growth

**Research Methodology-**

The research employs secondary data sources, including government reports, scholarly articles, and empirical studies, to provide an evidence-based analysis of regional disparities and their implications for India's long-term development goals.

**Introduction**

Regional political movements have played a crucial role in shaping India's socio-economic development. While they have advanced local interests, they have also fostered exclusionary practices that challenge national unity. The Sons of the Soil ideology, emphasizing native populations in employment and governance, is particularly evident in Maharashtra and Assam.

In Maharashtra, parties like Shiv Sena and MNS have pushed for job reservations for Marathi speakers, leading to discrimination against migrants from Uttar Pradesh and Bihar, disrupting urban labor

markets. In Assam, concerns over illegal immigration from Bangladesh have driven restrictive citizenship and land policies, marginalizing Bengali-speaking communities. The Assam Movement (1979–1985) led to the National Register of Citizens (NRC), further deepening socio-economic exclusion.

This paper examines the impact of regional politics on inclusive development, particularly in employment, resource distribution, and economic policies. It evaluates national initiatives like the Aspirational Districts Programme (ADP) and Skill India Mission in addressing regional disparities. Finally, it recommends policy measures to strengthen cooperative federalism, promote equitable economic growth, and enhance social cohesion, aligning with the vision of Viksit Bharat 2047.

### **Regional Politics and Inclusive Social Development**

India's federal structure allows states significant autonomy to shape policies addressing their socio-economic needs. This decentralization has empowered regional political parties to advocate for local issues like employment, cultural preservation, and economic development. While strengthening grassroots governance, it has also led to political tensions over resource distribution, migration, and employment policies.

States with strong regional identities, such as Maharashtra and Assam, have seen the rise of political parties prioritizing native populations over migrants. Sons of the Soil movements have influenced policies that favor local communities in employment and resource allocation, often reinforcing socio-economic divisions. In Maharashtra, parties like Shiv Sena and MNS have pushed for job reservations for Marathi speakers, citing threats from migration. Similarly, Assam's concerns over illegal immigration from Bangladesh have shaped restrictive policies like the National Register of Citizens (NRC), exacerbating social and economic exclusions.

While these movements address local grievances, they can also deepen divisions and hinder national cohesion. Achieving Viksit Bharat 2047 requires balancing regionalism with national integration. Strengthening cooperative federalism and implementing inclusive governance frameworks will be essential to ensuring equity, social integration, and sustainable economic growth across all states.

### **The Sons of the Soil Concept and Its Socio-Economic Impact**

The Sons of the Soil concept, first introduced by political scientist Myron Weiner, describes the resistance of native populations to the influx of migrants to preserve their economic and political dominance. This ideology has significantly influenced India's social and economic landscape, particularly in Maharashtra and Assam.

**Maharashtra: Job Reservations and Migrant Exclusion-** In Maharashtra, the Sons of the Soil ideology has been strongly promoted by regional parties advocating for job reservations for Marathi speakers. While this has increased employment opportunities for locals in some sectors, it has also posed challenges for industries reliant on migrant labor. Sectors such as construction, manufacturing, and low-skilled services, which depend heavily on migrant workers, have often faced labor shortages due to exclusionary hiring practices. Additionally, migrants in urban centers like Mumbai and Pune face challenges in accessing housing, healthcare, and education, further exacerbating their marginalization.

**Assam: Identity Politics and Citizenship Challenges-** Assam's Sons of the Soil movement has manifested in concerns over illegal immigration, leading to the Assam Movement and the subsequent Assam Accord (1985), which set a cut-off date for granting Indian citizenship to migrants. However, conflicts over land ownership and the NRC have intensified tensions, creating socio-political instability. The implementation of the NRC has left many residents in legal limbo, with fears of statelessness and

deportation. Additionally, land disputes between indigenous Assamese and migrant communities continue to hinder economic growth, discouraging investments and infrastructure development.

Both Maharashtra and Assam exemplify how Sons of the Soil policies, while addressing local concerns, contribute to economic disparities and social divisions. Exclusionary employment practices in Maharashtra hinder labor mobility, while identity-based citizenship policies in Assam fuel uncertainty and unrest. To achieve Viksit Bharat 2047, policymakers must strike a balance between protecting regional identities and fostering national integration. Policies that promote economic inclusion, equitable resource distribution, and cooperative governance are essential to mitigating regional tensions and ensuring sustainable development.

**Developmental Disparities-** India's economic trajectory over the past few decades has been marked by rapid industrialization and urban expansion. However, this growth has not been uniform across states, leading to stark regional imbalances in economic development and social progress. While some states have emerged as economic powerhouses, others continue to grapple with high poverty rates, poor infrastructure, and limited employment opportunities. These disparities have far-reaching consequences, contributing to economic exclusion, social fragmentation, and political instability.

**The Socio-Political Consequences of Developmental Disparities-** The growing economic and infrastructural imbalances between different regions of India have led to significant socio-political consequences, affecting national stability and social cohesion. The key challenges include:

1. **Economic Exclusion-** Regional disparities in employment opportunities and infrastructure contribute to economic exclusion, particularly for populations migrating from underdeveloped states. Migrants seeking jobs in industrial hubs such as Maharashtra and Karnataka often face discrimination in labor markets due to local hiring preferences. Informal sector employment dominates, with limited access to social security, formal contracts, and legal protections.
2. **Social Fragmentation-** The persistence of economic inequalities has intensified regional identity politics, fueling social fragmentation. In Maharashtra, tensions between local Marathi populations and North Indian migrants have led to sporadic violence and economic boycotts. Similarly, in Assam, linguistic and ethnic conflicts over land and resource allocation continue to divide communities. Such identity-based movements foster a climate of exclusion, undermining the principles of national unity and cooperative governance.
3. **Political Instability and Governance Challenges-** Developmental imbalances create governance difficulties, leading to demands for increased state autonomy and special financial packages. For instance, states such as Bihar and Odisha frequently seek special category status due to their economic disadvantages compared to industrialized regions. At the same time, political movements advocating for regional rights—such as the Bodoland movement in Assam or the Telangana agitation—have resulted in administrative reconfigurations, at times weakening national policy consistency.

Addressing these challenges requires a nuanced approach, ensuring that economically weaker states receive targeted interventions while industrialized regions remain open to labor mobility and economic integration.

According to NITI Aayog, regional disparities continue to challenge India's economic and social development.

- Maharashtra, despite contributing 14.4% to India's GDP, faces severe intra-state inequalities. Rural regions like *Vidarbha* and *Marathwada* struggle with agrarian distress, recurrent



droughts, and high farmer suicide rates. The economic prosperity of Mumbai and Pune has not translated into rural development, deepening inequalities.

- Assam's literacy rate of 72.19% remains below the national average, limiting employment opportunities and economic mobility. Poor access to quality education in rural areas has led to high migration rates as youth seek better livelihoods elsewhere.
- Inter-state migration remains significant, with Maharashtra and Delhi as key destinations. However, restrictive policies driven by *Sons of the Soil* movements create barriers for migrants, limiting their employment opportunities and reducing the economic potential of host states reliant on their labor.

Despite national efforts to promote inclusive development, these imbalances persist, threatening economic stability and social cohesion. The widening divide between advanced and underdeveloped states leads to economic exclusion, social unrest, and governance challenges. Addressing these disparities is crucial for realizing *Viksit Bharat 2047*, ensuring balanced regional growth, equitable opportunities, and national unity.

**Economic Exclusion and Marginalization-** Regional disparities lead to the economic exclusion of large populations, particularly migrants from underdeveloped states. In metropolitan cities, industries often prioritize local workers due to political and social pressures, making it difficult for migrants from Bihar and Uttar Pradesh to secure stable jobs—especially in states like Maharashtra, where local hiring policies restrict opportunities. Beyond employment, many migrants work in the informal sector, leaving them without access to essential welfare programs such as health insurance, housing schemes, and food security benefits. This deepens poverty and socio-economic vulnerabilities, trapping migrants in cycles of marginalization. Additionally, underdeveloped states struggle to attract investments due to poor infrastructure, inadequate public services, and governance challenges. As a result, economic opportunities remain concentrated in a few states, driving large-scale migration and widening the regional divide. Addressing these disparities is essential for achieving balanced economic growth and fostering national cohesion.

**Social Fragmentation and Identity Politics-** Regional disparities have intensified social fragmentation, fueling identity-based politics in states like Maharashtra and Assam. Economic inequalities, combined with political rhetoric favoring local interests, have led to exclusionary policies that marginalize migrants and linguistic minorities. In Maharashtra, the *Sons of the Soil* movement has driven anti-migrant sentiments, with demands for preferential treatment of Marathi speakers. This has led to tensions between locals and North Indian migrants, affecting social cohesion in cities like Mumbai and Pune. Similarly, Assam has witnessed ethnic and linguistic conflicts over immigration from Bangladesh. The implementation of the National Register of Citizens (NRC) has deepened divisions, leaving thousands at risk of statelessness. Such fragmentation weakens national unity, disrupts economic activities, and deters investment. Overcoming these challenges requires fostering inclusive policies that promote social integration and economic collaboration.

**Political Instability and Governance Challenges-** Economic imbalances have also given rise to political instability, as underdeveloped states and marginalized communities increasingly demand greater financial allocations and special privileges. States such as Bihar and Odisha frequently advocate for special category status, citing their economic disadvantages and historical neglect. These demands, if not managed effectively, can create tensions between the central and state governments, impacting policy consistency and fiscal planning. Additionally, political movements centered around regional

grievances have led to periodic agitations and protests, disrupting governance and delaying economic reforms. For instance, Maharashtra has witnessed protests against migrant labor, while Assam has seen recurring unrest over citizenship and land rights. These conflicts divert attention from developmental priorities and create uncertainties that discourage private sector investments. Furthermore, governance challenges in underdeveloped states—such as corruption, bureaucratic inefficiencies, and inadequate law enforcement—reduce the effectiveness of government schemes aimed at bridging developmental gaps. Even well-intentioned initiatives, such as the Aspirational Districts Programme (ADP), often face hurdles in implementation due to weak administrative capacity.

**Bridging the Development Gap:** Addressing these regional imbalances requires a multi-pronged approach that combines economic decentralization, improved governance, and strengthened inter-state cooperation. Some key policy measures include:

1. Targeted Investments in Infrastructure and Industry
  - Developing Special Economic Zones (SEZs) and industrial corridors in underdeveloped states can create localized employment opportunities, reducing migration pressures.
  - Strengthening rural connectivity through better roads, railways, and digital infrastructure can enhance access to markets and services.
2. Expanding Access to Quality Education and Skill Development
  - Enhancing vocational training programs under Skill India to equip youth in backward regions with industry-relevant skills.
  - Strengthening digital education initiatives to bridge literacy and employment gaps in states like Assam and Bihar.
3. Promoting Inclusive Labor Policies
  - Implementing a national skill certification framework to standardize qualifications and facilitate labor mobility across states.
  - Encouraging industries to adopt merit-based hiring practices rather than region-based reservations.
4. Strengthening Cooperative Federalism
  - Encouraging regular dialogue between state and central governments to align developmental goals and policy measures.
  - Increasing fiscal devolution to underdeveloped states to ensure adequate funding for infrastructure and welfare programs.
5. Leveraging Technology for Governance Transparency
  - Expanding Direct Benefit Transfer (DBT) programs to ensure that financial aid reaches beneficiaries without bureaucratic delays.
  - Using AI-driven monitoring systems to track the implementation and impact of government schemes in real time.

By addressing these structural challenges, India can move towards a more balanced and inclusive growth model, ensuring that every state contributes to and benefits from the nation's progress. Reducing economic disparities and promoting equitable development is critical to realizing the vision of Viksit Bharat 2047, where regional diversity becomes a strength rather than a source of division.

**Examples of Inclusive Development Initiatives-** To address these disparities, the Indian government has launched several large-scale initiatives aimed at promoting regional inclusivity and balanced



economic growth. However, the effectiveness of these programs is often shaped by political, administrative, and social dynamics.

- Aspirational Districts Programme (ADP)- Launched by NITI Aayog in 2018, the Aspirational Districts Programme (ADP) aims to uplift 112 of India's most underdeveloped districts by focusing on health, education, agriculture, financial inclusion, and infrastructure. The program has led to a 15% increase in school enrollment in targeted districts, particularly in Assam, due to improved facilities and incentives. In Maharashtra, rural regions like Vidarbha and Marathwada have seen a decline in maternal mortality rates due to better healthcare access. However, ADP faces challenges such as bureaucratic delays, inefficient fund allocation, and shortages of teachers and healthcare professionals. Strengthening local governance and adopting a community-driven approach could improve implementation efficiency.
- Skill India Mission in Maharashtra- The Skill India Mission, launched in 2015, addresses India's skill gap by providing industry-relevant training. Maharashtra, a key industrial hub, has benefited significantly, with over 7 million individuals trained in sectors like manufacturing, IT, and construction. This has boosted workforce productivity and employment rates, particularly in Pune, Nagpur, and Nashik. However, regional hiring biases and Sons of the Soil policies restrict the participation of non-Marathi workers, discouraging cross-state labor mobility. To enhance inclusivity, a more flexible labor policy and an inter-state skill certification framework are necessary.
- Assam's Land Rights and Ethnic Conflicts- Assam has long struggled with land ownership conflicts, particularly between indigenous communities and migrants. The Assam Accord (1985) aimed to regulate citizenship and land rights, but disputes over the National Register of Citizens (NRC) have worsened tensions. Unclear land titles have led to frequent evictions and legal disputes, discouraging investment in agriculture and industry. Many residents remain in legal limbo, unable to access social welfare or economic opportunities. To address these challenges, balanced land reforms, government-facilitated conflict resolution, and community-based land-sharing models are essential.

Despite these initiatives, several structural challenges continue to impede inclusive development:

1. Identity Politics and Regional Protectionism- The persistence of regional identity politics, particularly in employment and land allocation, restricts labor mobility and economic integration. In states like Maharashtra and Assam, preferential hiring policies create economic inefficiencies, leading to labor shortages and underutilization of skilled workers.
2. Inadequate Education and Infrastructure- Many rural areas still lack access to quality education and basic infrastructure, limiting upward mobility. Poor digital connectivity and shortages of skilled teachers in underdeveloped districts restrict the effectiveness of government programs.
3. Barriers to Effective Policy Implementation- Government schemes such as ADP and Skill India are often hampered by political interference, bureaucratic inefficiencies, and funding delays. Enhancing governance transparency and local accountability mechanisms can improve their implementation.
4. Migration Conflicts and Socio-Economic Integration- Resistance to migrant labour has created barriers to economic integration, particularly in urban centres. Political narratives against migrants in Maharashtra and Assam have exacerbated tensions, limiting labor market flexibility and industrial productivity.

**Policy Recommendations for Achieving Viksit Bharat 2047**

A sustainable and inclusive development strategy for Viksit Bharat 2047 must address regional disparities while fostering national unity. The following policy measures are essential:

1. **Strengthening Cooperative Federalism-** Enhancing coordination between the central and state governments can improve policy effectiveness. Platforms such as the NITI Aayog Governing Council should be leveraged to ensure that regional aspirations align with national priorities.
2. **Expanding Social Welfare and Education Programs-** Increased investments in rural education, vocational training, and digital infrastructure are crucial to bridging socio-economic gaps. Strengthening initiatives like Skill India and expanding their accessibility across states can enhance workforce readiness.
3. **Encouraging Economic Decentralization-** Development efforts should extend beyond major metropolitan centres to smaller towns and rural areas. Expanding Special Economic Zones (SEZs) and industrial corridors can create localized employment opportunities, reducing migration pressures on urban centres.
4. **Balancing Regional Autonomy with National Integration-** Policies should protect local identities without restricting economic mobility. A more inclusive labor market, with national-level skill certifications, can facilitate workforce integration while addressing regional concerns.
5. **Leveraging Digital Technology for Governance-** Digital governance solutions—such as AI-driven monitoring systems, blockchain-based welfare distribution, and Direct Benefit Transfer (DBT) expansion—can enhance policy transparency and reduce leakages.

**Conclusion: A Roadmap for Inclusive Development in Viksit Bharat 2047**

India's regional politics will continue to shape its economic and social development. While acknowledging local aspirations is essential for effective governance, excessive regionalism can lead to economic inefficiencies, restricted labor mobility, and deepened social divisions. The impact of identity politics, resource distribution, and policy implementation at the state level significantly influences the country's trajectory toward inclusive development. Maharashtra's Sons of the Soil policies highlight how regional identity-based politics can empower local communities while simultaneously restricting economic participation. Such policies, designed to safeguard Marathi-speaking workers, have resulted in employment barriers for non-local laborers, limiting industrial expansion and innovation. Similarly, in Assam, historical disputes over land ownership and immigration have shaped exclusionary policies, as seen in the National Register of Citizens (NRC) debate, complicating social integration and economic stability.

To achieve Viksit Bharat 2047, India must adopt a balanced and sustainable development model that ensures equitable resource distribution, strengthens inter-state cooperation, and fosters national unity while respecting regional identities. Bridging regional disparities requires targeted policy interventions, such as increased financial allocations through the Finance Commission and expansion of initiatives like the Aspirational Districts Programme. Additionally, fostering inter-state collaboration is essential for creating a flexible labor market, reducing migration barriers, and promoting multilingual education for cultural integration. Economic decentralization must be prioritized by investing in Tier-2 and Tier-3 cities, expanding industrial corridors, and promoting rural entrepreneurship through initiatives like Skill India and Startup India. Enhanced governance transparency is equally crucial. Digital governance solutions—such as blockchain-based welfare distribution and AI-driven monitoring frameworks—can improve accountability and policy execution at the grassroots level. Ultimately, India's path to Viksit Bharat 2047 depends on a coordinated approach that harmonizes regional aspirations with national objectives. By emphasizing resource equity, inter-state collaboration, economic decentralization, and governance reforms, India can build a resilient, inclusive, and prosperous nation.

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## IMPACT OF GREEN HRM ON EMPLOYEES' BEHAVIOUR: A STUDY OF HIGHER EDUCATION INSTITUTIONS

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### **Abstract**

*With the increasing need for environmental awareness to combat environmental issues like climate change, pollution, ozone depletion, the organization to imbibe green practices through HRM department. This research has been conducted to examine the impact of Green Human Resource Management (GHRM) policies and practices on employees' behaviour. The behaviour is examined using two dimensions, in-role and extra-role. In-Role behaviour is exhibited as and when an employee is adhering to organizational HRM norms and extra-role is exhibited beyond it based on employee's personal involvement in green initiatives.*

*The Higher Education Institutions (HEI) should engage in not only practicing green behaviour but also percolating that green behaviour to the young students. This paper evaluates the impact of GHRM practices of the HEIs and its impact on staff's behaviour.*

**Key Words:** *Green HRM, Green Initiatives, Higher Education Institution, green value chain practices, In-Role Behaviour, Extra-Role Behaviour*

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### **INTRODUCTION**

Green Human Resource Management or Green HRM are the set of extended policies and practices of Human Resource Management (HRM) department of an organization which will support and stimulate sustainable use of resources and preserving and replenishing the natural environment.

GHRM is said to be a set of policies, practices, and systems that stimulate the green behavior of a company's employees in order to create an environmentally conscious, resource-efficient, and socially responsible organization. The HRM department, provide resources, guidance and support to the employees work towards adopting sustainable business practices.

Due to increased awareness about the consequences of environmental issues like climate change, inappropriate waste management, more and more organizations are adopting such practices. Also the advent of modern green technologies are there to help. The HRM department undertake green or sustainable initiatives right from process of recruitment while preparing the job description. While selecting the employees, the organization examines an individual's ability and understanding for sustainable practices. During onboarding, the employee are made aware about the organizational sustainable practices and goals. Time to time, the organization provides training on skills and awareness for green practices. Also, in some organization, sustainable initiatives are graded in the performance appraisal system.

The Green HRM provides an ecosystem for sustainable business practices by providing information on environmental impact of value chain of the organization, providing information for appropriate use of resources like ways of reusing and recycling and reducing wastage and encouraging employees for determining innovative means for reduced environmental impact.

### **RESEARCH PROBLEM**

Due to some burning environmental issues, the organisations need to take up initiatives for sensitizing the employees and taking steps to minimize negative impacts of business practices on the environment using modern green technology. GHRM if implemented can compel employees to exhibit green

behaviour within the periphery of their job as well as beyond it . The staff of HEIs if practice GHRM can save adverse environmental impact but also educate and sensitize students towards sustainable development of the society.

### **STATEMENT OF OBJECTIVE**

This research has been undertaken to achieve the following objectives:

- To study the relevance of Green Human Resource Management in today's environmental scenario
- To determine the Green HRM practices which can be adopted in higher education Institutions (HEI)
- To examine the extend to which Green HRM is practiced in HEI in Mumbai
- To study the impact on behaviour of HEI staff due to Green HRM initiatives taken .

### **RESEARCH METHODOLOGY**

This is a qualitative research using empirical technique to identify the impact of Green HRM on the employee's behavior related to adhering to green code of conduct and beyond it.

The sources of data collection are both primary and secondary. The secondary sources are mostly information websites and research articles and theses. Primary data is collected through sample survey technique. The questionnaire comprises of 20 closed ended questions. The sample units are the employees working in HEI. The sample size is 70.

The primary data collected is represented using tables. The hypotheses are tested using chi square technique.

### **LIMITATION**

The limitations of this research can input for research topic for further researches. This research has been conducted only for HEI institutions, and it has not drawn any comparison with other industries practices. The research is conducted within short time span and have just examined impact on employee behavior.

### **HYPOTHESES**

1. H<sub>1</sub>: There is a significant impact of GHRM practices on in-role Green Behavior of the employees
2. H<sub>2</sub>: There is a significant impact of GHRM practices on extra-role Green Behavior of the employees

### **REVIEW OF LITERATURE**

According to the research conducted the term Green HRM or Environmental HRM came under scanner in 2000s. It was considered to be an amalgamation of organisation's sustainable practices with its HRM practices.

According to Fernandez and Rio (2019), Green HRM are the practices of HRM for enhancing the organization's overall environmental sustainability orientation across all its functions. It includes green recruitment and selection, education and training, performance appraisal, employee empowerment and engagement and recognition systems. The research also emphasizes that GHRM is a bottom-up process that means, the success of HRM environmental initiatives depends upon the involvement of employees and initiatives and innovations by the employees at bottom most level. The researchers also highlighted the importance of green communication which includes communication of green policies, platforms for knowledge sharing and use of channels like newsletters and blogs for sharing goals based on environmental priorities.

In a study by Masood (2018) which was conducted to find the relevance of Green HRM and the challenges in implementing it. The researcher discussed some initiative which can be taken by HRM department like paperless office, energy conservation measures, usage of software for reduced toner and ink consumption (green printing), awareness and measures for water, paper, energy saving, recycling techniques and Green Recompense for rewarding individuals exhibiting environmentally conscious behavior and bringing in innovative practices. But there are some challenges in implementing these initiatives like time and resistance for change to new practices, incorporating such temperament right from recruitment, developing green structures is cost intensive and may not be equally effective due to poor rate of return initially.

In words of Lakshmi Varma (2021), if University promotes implementation of GHRM in institutions, the environmental management system (EMS) will be implemented with full support of staff more easily. This is also the guideline for the institutions by National Assessment and Accreditation Council (NAAC). The Universities and HEIs have large premises consuming large amount of resources like water and electricity. Along with classrooms facilities like convenience stores, play grounds, canteen, hostels are provided in the campus. Hundreds of teachers employed here can be converted into Green Agents by setting examples to other stakeholders through their environmental friendly working style. Some of the practices can be:

- Green Recruitment : online publication of ads and accepting resume and credentials in soft form
- Green Training and Development : Includes training on waste management, car-pooling, recycling, reducing paper use, excluding plastic from campus, energy conservation etc.
- Green Employee Relations: Conducting team activities related to maintaining garden, cleaning campus, energy and water conservation initiatives etc.
- Green Performance Management: Employees who are able to perform well at the same time using innovative eco-friendly practices while working should be suitable rewarded during appraisal of performance.

According to the research, undertaking green initiatives superficially to fulfill NAAC requirement will not yield sustainable results. GHRM can imbibe environmental consciousness amongst staff of HEI leading to sustained eco-friendly campus.

Sharma and Gupta (2019) have detailed the model for GHRM by bringing focus on HCL Technologies. They highlighted that employees engagement increases in the organizations where the employers are socially and environmentally responsible. The organizations which invest in social and environmental initiative enjoy better reputation. The organizations today tend to hire individuals which have skills, mindset and behaviour for environmental betterment initiatives. Such employees may help in implementing GHRM more conveniently.

Karande and Bihade (2018) in their research studied various GHRM practices in MNCs in Pune region with their impact on the organization and its employees. Practices like online advertisement and online application acceptance, green recruitment and selection, green orientation, green learning and development, green performance management, green discipline management. Like health and safety manager, they have introduced health, safety and environment manager. The outcome these companies have experienced are a healthy workplace, better morale, preserved environment, reduced costs, reduced government intervention and enhanced goodwill.

In his research, Aboramadan (2022), explained the consequences of GHRM on in-role, extra-role and green initiative work behavior (GIWB) and also discussed Green Work Engagement (GWE). According



to him, the HEIs have to rethink and revisit their mission, revitalizing and recognizing the evolving needs and challenges of environmental management concerns as they can play a dominant role to channelize society through research and education. GHRM ensures teachers, researchers and staff of the institutions exhibit green behaviors. Based on this research impact of GHRM on employees can be determined by studying employees in-role, extra-role and GIWB green behavior.

In-Role Green behavior includes the environmental friendly behavior of the employees as an integral part of their job profile and performance assessment. Extra-Role Green behavior includes voluntary green behaviors much beyond the formal duties of an employee and which may not be recognized in his/her performance assessment.

According to the research GHRM directly generates GIWB because of better environmental knowledge, undertaking green training and coaching for necessary skills, green performance assessment leading to incentives. Also if organizations have more commitment towards the environment, so becomes the behaviour of the employees so as to show respect for organizational culture and values.

### PRIMARY DATA & ITS INTERPRETATION

The primary data was collected using questionnaire comprising of three parts

#### A. Institutional practices and policies under Green HRM (7 questions)

STATEMENT	NO	YES
Is Environmental consciousness considered while conducting selection process of employees?	No 39	Yes 31
Does your institution organizes awareness programs on environmental concerns and their impact? (like climate change, depleting natural resources, natural disasters etc.)	No 32	Yes 38
Are processes like salary disbursement, attendance, leave application etc. are conducted using paperless procedures?	No 36	Yes 34
Does your performance appraisal includes parameters related to your environmental initiatives?	No 50	Yes 20
Have you been instructed to avoid wasting electricity, water etc. while in college?	No 6	Yes 64
Has your college taken measures to reduce the use of plastic (non-reusable) in routine activities?	No 12	Yes 58
Do you think your college has adopted many eco-friendly practices and facilities as per NAAC guidelines?	No 10	Yes 60

*Table 1: Significant number of institutions do not consider environmental knowledge as a parameter for employee selection and performance appraisal. In rest of the areas institutions are able to apply successfully the green practices*

#### B. Impact of GHRM practices and policies on In-role Green Behaviour of employees (7 questions)

QUESTION	ALWAYS	SOMETIMES	NEVER
Do you switch off computer & other equipment after finishing your work?	60	10	0
Do you use re-usable mugs instead of disposable cups in college?	38	32	0
Do you use emails or other online messaging tools rather than paper for sending message to your peer group?	42	26	2

Do you avoid using air conditioner when being alone in the cabin/ staffroom	46	14	10
Do you think online processes are more convenient than offline?	34	16	10
Do you follow waste segregation in your campus?	44	22	4
Do you keep all the documents in soft form?	38	32	0

Table 2: Apart from usage of electricity when can be avoided and ease of using technology, in most of the areas green practices are adopted by employees.

C. Impact of GHRM practices and policies on Extra-role Green Behaviour of employees (6 questions)

QUESTIONS	YES	NO, NOT A PART OF MY PROFILE
Do you guide students for having eco-friendly behavior?	62	8
Do you like to bring innovation in your work to make it more environment friendly?	44	26
Do you get involved in creating green landscape in your campus?	40	30
Do you use energy saving mechanism on your computer at college?	48	22
Do you suggest students to use natural light and ventilation?	50	20
Do you discuss environmental issues with students during casual discussions?	56	14

Table 3: It is seen that though in most of the areas the employees exhibit green behaviour even beyond their jobs, but the areas like green innovation, green landscaping and use of natural resources are relatively less

### DATA ANALYSIS

The primary data collected visibly showed the impact of GHRM policies and practices on in-role and extra-role behaviours of the employees. To prove it statistically,  $\chi^2$  test is applied for testing hypothesis.

1.  $H_0$ : There is no significant impact of GHRM practices on in-role Green Behavior of the employees

$H_1$ : There is a significant impact of GHRM practices on in-role Green Behavior of the employees

GHRM SCORE					
		0-3	4-6	7-9	Total
In Roll Score	0-5	4	0	0	4
	6-10	0	24	14	38
	10-14	0	0	28	28
Total		4	24	42	70
	Fo	Fe	Fo-Fe	$x=\text{Sqr}(Fo-Fe)$	x/fe



	4	0.2285714286	3.771428571	14.22367347	62.22857143
	0	2.171428571	-2.171428571	4.715102041	2.171428571
	0	1.6	-1.6	2.56	1.6
	0	1.371428571	-1.371428571	1.880816327	1.371428571
	24	13.02857143	10.97142857	120.3722449	9.239097744
	0	9.6	-9.6	92.16	9.6
	0	2.4	-2.4	5.76	2.4
	14	22.8	-8.8	77.44	3.396491228
	28	16.8	11.2	125.44	7.466666667
					<b>99.47368421</b>

Table 4: The table value of  $\chi^2$  is 9.488 at degree of freedom 4 while the calculated values is 99.47 which is significantly high, hence we reject null hypothesis

2.  $H_0$ : There is no significant impact of GHRM practices on extra-role Green Behavior of the employees

$H_1$ : There is a significant impact of GHRM practices on extra-role Green Behavior of the employees

GHRM SCORE					
		0-3	4-6	7-9	Total
Extra Roll Score	0-2	4	0	0	4
	3-4	0	22	2	24
	5-6	0	14	28	42
Total		4	36	30	70
	Fo	Fe	Fo-Fe	$x=\text{Sqr}(Fo-Fe)$	$x/fe$
	4	0.2285714286	3.771428571	14.22367347	62.22857143
	0	1.371428571	-1.371428571	1.880816327	1.371428571
	0	2.4	-2.4	5.76	2.4
	0	2.057142857	-2.057142857	4.231836735	2.057142857
	22	12.34285714	9.657142857	93.26040816	7.555820106
	14	21.6	-7.6	57.76	2.674074074
	0	1.714285714	-1.714285714	2.93877551	1.714285714
	2	10.28571429	-8.285714286	68.65306122	6.674603175
	28	18	10	100	5.555555556

					<b>92.23148148</b>
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Table 5: The table value of  $\chi^2$  is 9.488 at degree of freedom 4 while the calculated values is 99.47 which is significantly high, hence we reject null hypothesis

## CONCLUSION

1. By examining secondary data it is found that general GHRM practices are involving recruitment, selection, performance appraisal and general code of conduct for green behavior
2. Generally the employees green behavior can be analysed on the basis of his/her in-role and extra-role behavior.
3. By looking at the trend appearing in primary data is that the institutions which do not include environmental parameters in selection and performance appraisal process, the employees exhibit less green innovative attitude and involvement in green landscaping.
4. There is a significant positive relation between employees on the job green behavior and institutional green HRM practices.
5. There is a significant positive relation between employees off the job green behavior and institutional green HRM practices.

## RECOMMENDATION

- Institutions can include environmental consciousness parameter in selection process and performance appraisal so that employees show interest in exhibiting environmentally conscious behavior
- More training and workshops can guide employees to adopt more green practices.
- Giving time to employees for involving in green activities can make their attitude positive towards environment-based initiatives.

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## BRIDGING THE DIGITAL DIVIDE: AN INVESTIGATION OF E-LEARNING PLATFORMS OF VIKSIT BHARAT

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### Abstract

*This research paper highlights the platform which are initiated by the Viksit Bharat for enhancing the learning among the individuals. Many individuals are far away from getting knowledge as physical presence creates obstacle for them due to many reasons. E-Learning platforms emerged as a boon for the learners who want to get education. This research paper focuses on various E-Learning platforms provided by the government of India. The data is collected through questionnaire as a means of primary collection. It focuses that education is now not a hurdle to the learners. Viksit Bharat has a vision for being progressed by its 100<sup>th</sup> Independence. This study emphasises the different E-Learning platforms available for the individuals to enhance its educational level. At its own space an individual can learn and develop its own skills. The study focuses on the awareness of the platforms been made available. The method adopted is Descriptive as well as empirical type of research method.*

**Keywords:** *Viksit Bharat, E-Learning, Education, Awareness.*

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### INTRODUCTION:

The word Viksit Bharat refers to Developed India when it will be completing its 100 years of Independence where education takes the centre stage. It is view to the education system of 2047 that fosters inclusive growth and makes them ready for all challenges and opportunities uprising in the 21<sup>st</sup> century. This mission aims to build a \$10 trillion economy which will consist of world class infrastructure sustainable agriculture growth, inclusive social development and technological advancement. The key priority is required to fill the gap by providing internet access, device and digital training to all. The Viksit Bharat aims for the following –

It needs to achieve 100% gross enrolment ratio along with the literacy rate through accessible options been made available for learning.

It aims to provide and to give importance to the specially challenged children where learning is addressed with empathy and support.

A view of Viksit Bharat focuses on Life long learning. Where individuals will be upgrading their skills to the changing scenario.

Viksit Bharat needs to restore the curriculum for enabling critical thinking, problem solving etc.

Viksit Bharat 2047 vision to remove the disparities in the educational paths, which are based on gender, background, and socio-economic status. It focuses on uplifting the scholarship schemes and residential hostels and thus could bridge the gap for the underprivileged group.

Its vision to align with vocational training with the emerging trends for the industries and the growing technologies.

E-Learning platforms of Viksit Bharat consist of various digital initiatives taken in the educational sector. Which aims at enhancing education, skill development and innovation across the globe. These platforms are designed in such a way that it provides access to quality education and training to all those who were deprived from the knowledge space.

E-Learning is the use of digital device and internet for learning. It comes with lots of advantages and disadvantages.

#### **ADVANTAGES OF E-LEARNING PLATFORMS:**

It allows the students to use the platforms as per their convenience and time.

It permits the students to get access of large contents.

The cost of space , infrastructure and maintenance don't add up in e-learning for a learner.

It attains flexibility as the learner can learn at its own space.

Study notes and materials are provided so that the doubts are cleared.

E-Learning facilitates in achieving the individual goals.

E-Learning enhance quick learning as compared to classroom method.

Demo lectures are provided to understand the expert personnel and its teaching style.

#### **DISADVANTAGES OF E-LEARNING PLATFORMS:**

There are chances of technical glitches at times.

Students may not identify their educational needs, weaknesses as there is no direct interaction with the students and the teachers.

Students login for the lecture only for the purpose of completing their attendance .

There is balance between intellectual skills learning and community skill development.

Online learning is not well suited for all the individuals as others do well in the classroom learning.

There is no means of interest developed for studying online for those who are not dedicated towards their education.

#### **VARIOUS E-LEARNING PLATFORMS:**

##### **1. SWAYAM (Study Webs of Active Learning for Young Aspiring Minds) –**

The motto of SWAYAM is “Shikshit Bharat , Unnat Bharat” which was launched on 9<sup>th</sup> July 2017. It was launched by our former President of India Shri Pranab Mukherjee. It is an initiative taken by the Indian Government to offer free and open courses that are also in online mode. The courses offered at SAWAYAM are from class 9<sup>th</sup> up to the post-graduation level. Where the students benefit from getting access from anywhere at any time of the day. Courses at SWAYAM are free of cost to the students and learners, but those who want to get a certificate need to take a test on the specified topic at a specified date of the exam. Ten National Coordinators are appointed to look after the delivery of the content, i.e., whether the content is justifiable. The coordinators include AICTE, NPTEL, UGC , NCRT , CEC , NIOS , IGNOU , IIMB , NITTTR and INI. These bodies see that the students benefit from the best quality of knowledge. According to the Union Minister of State of Education 112 universities have opted for providing online courses through the portal of SWAYAM till June 2022. As per the data of December 2022, it provides 2150 total courses at this platform. As if for now the total courses provided is 14750 with ongoing enrolment of 36.5 lakhs plus.

**Table 1: Statistics of SWAYAM**

YEAR	SEMESTER	COURSE ENROLLMENT	EXAM REGISTRATION	CERTIFICATIONS
2024	JANUARY	3825231	885483	549066
2024	JULY	4020432	1010698	589040

From the above data, the growth of SWAYAM could be seen. The number of students are growing for every semester held.

**OBJECTIVES :**

Bridging the gap for those students who have not been part of the digital knowledge.  
Offering a wide range of e-learning platforms with interactive sessions at levels of education.  
Delivering of high quality content through the use of multimedia sources.  
To create opportunities as well to have grievance forms.

**2. NATIONAL DIGITAL LIBRARY OF INDIA :**

National Digital Library of India also known as NDLI was developed by Indian Institute of Technology, Kharagpur. NDLI is sponsored by Ministry of Education and Government of India. It is leading a step ahead in imparting knowledge through NMEICT i.e. National Mission in Education through Information and Communication Technology. NDLI platform provides a wide range of e-learning resources which are educationally accessible to all. It has a large repository from all over the world which is useful to all demographics. NDLI contains 115+ million contents in 452+ languages. Where the learners can pursue the knowledge in their own language.

**Table 2: Growth of Ndli Year Wise**

	2017	2018	2019	2020	2021
Total number of contents hosted by NDLI website	6423499	161691515	27814879	48184251	64651364
Growth rate	332.50%	152.06%	71.78%	73.23%	34.17%

From the above Table, it could be suggested that the growth rate was observed in the year 2017 at 332.50% and later in the coming years it started to decline till 2021 which was about 34.17%.

**OBJECTIVE:**

Its objective is to promote digital education where it is accessible to all educators around the corner. It collects and collates metadata from various national and international digital libraries.

**3.E-PATHSHALA :**

MHRD under the guidance of National Mission on Education Through ICT had initiated the formation of E-PG Pathshala. It provides an e-interactive session in 70+ subjects which is developed by the subject experts around the Indian Universities and also Research and Development Institutions. Each subject is backed with a team which consists of principal investigator, paper coordinators, content writers, content reviewers, language editors along with the multimedia team. It provides the following

<b>20,000 + E-texts</b>
<b>19,000 + videos</b>
<b>3,200 + experts</b>

The web portal and mobile app of E-Pathshala was launched during National Conference on ICT in School Education on 7<sup>th</sup> November, 2015. It also provides services like Adhyayan [E-Books]: it provides 700+ e-books for post graduate courses.

**OBJECTIVES :**

To develop E-content in all 70+ subjects at PG level. This done through the help of expertise in the subject from universities and colleges.

Make e-content available to students as well as peers as a part of imparting education through formal and informal routes.

To promote the usage of e-content among the students and peers for better knowledge.

**4. DIKSHA (DIGITAL INFRASTRUCTURE FOR KNOWLEDGE SHARING):** It is considered as a store house for large number of e-books and e-contents. It was launched on 5<sup>th</sup> September 2017 by the Hon'ble Vice President of India Shri M Venkaiah Naidu . It is an initiative carried out by the Ministry of Education along with Government of India. This digital platform is well suited and designed for the use of Teachers, Students and Parents. It provides large curriculum related learning resources in connection with various subjects and grades.

It is stated that DIKSHA has 1.76 crore of users as of for 20<sup>th</sup> Feb 2025. It provides around 21,487 of the courses for which 18.10 crore enrolment is observed. It has 3.68 Lakhs of E-Content with 7,284 of Textbooks. As a part of Atma Nirbhar Bharat Programme , DIKSHA is considered as “ONE NATION , ONE DIGITAL PLATFORM” specifically for school education . Its mission is to impart education through the digital platform for students to cope with the going on century. DIKSHA aims to provide a holistic learning beyond traditional methods of learning. It enables the students to get acquainted with skills which are required for personal development as well as academic point of view.

#### **REVIEW OF LITERATURE :**

1. Prof Rakesh, Prof Varsha Tanu and Prof Kumar Ashutosh in their research paper titled “ TOURISM CLUB AND VIKSIT BHARAT 2047- EXPLORING EMPLOYABILITY AND SUSTAINABLE DEVELOPMENT IN HIGHER EDUCATION” incorporates various initiatives take by Government of India. As a part of Azadi ka Amrit Mahotsav the Government of India gave term of “Education for All”. It also promoted Yuva Tourism club which would generate employment in the areas of tourism. The authors also have highlighted the success stories accompanied with the case studies.

2. Radhika Bhardwaj, Dr. Sona Dixit states that the by 2047 India would become a developed country on the mark of its 100<sup>th</sup> Independence. The article explores the rising change in the women empowerment which is also known as NARI SHAKTI. This change is reflected in the social as well cultural essence of India. The concept of Viksit Bharat also focuses on the Education sector by not only solving the problems prevailing but also for its development. It also focuses on various knowledge expansion platforms like NPTEL, N-LIST Programme, Global Initiative of Academic Network [GIAN] etc.

3. Maya Devi (2019), in her article related to NDLI, showed the scenario of NDLI and also focused on how the learning resources are provided. The article emphasises on the scope of learning and the availability of the material.

4. Parama Das Majumdar (2017), in her article titled “Trends of Digital Reading Behaviour among students in Kolkata, West Bengal, India” has examined the behaviour of the students in terms of reading that also digitally. The study was divided in various parts like the students who had been using the internet for more than five years 48.75% and the ones who used the internet for one to five years counted to 42.5%. She found out that students had various other access of information and entertainment due to well-developed technology. It was found out that majority of the students use mobile phone to get the information available (reading) . as these students use of the internet so it became accessible to them. Author was of the view of opening digital library so that it is accessible to all the students.

#### **OBJECTIVE OF THE STUDY :**

To find out the experience of the users using E-Learning platforms.

To examine the purpose for which the E-Learning is used by the users.

To find out the awareness of E-Learning platforms among the users.

**HYPOTHESIS:**

H0- There are no different platforms that are used significantly for E-Learning.

H1- There are different platforms that are used significantly for E-Learning.

H0-there is no significant change in the experience of users using the E-Learning platforms.

H2- there is a significant change in the experience of users using the E-learning platforms.

H0- there is no significant purpose for using the E-learning platforms by the users.

H3- there is a significant purpose for using the E-Learning platforms by the users.

**RESEARCH METHODOLOGY :**

This research will consist of Descriptive as well as empirical method.

**DATA COLLECTION :**

Primary Data collection - primary data is the information collected first hand. For this research the primary data will be collected through a structured questionnaire.

Secondary Data collection - secondary data is the information that is already made available. For this research the data will be collected through

-Official websites

-Reports

-Journals

-Articles

-Websites

**LIMITATION :**

The study is specifically for the region of Mumbai.

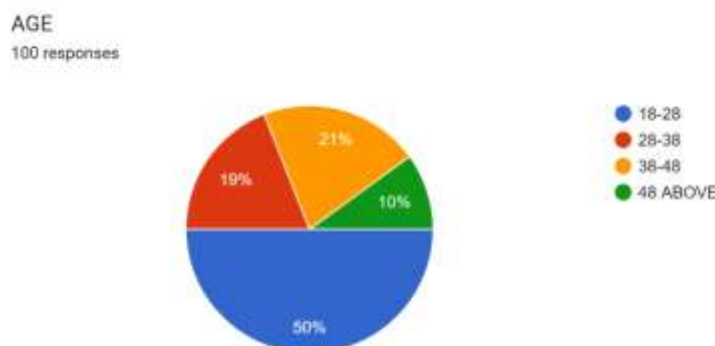
Time constraints.

Limited access to information.

**SAMPLE SIZE :** For the above mentioned research 100 respondents of Mumbai region are considered.

**SCOPE OF THE STUDY :**

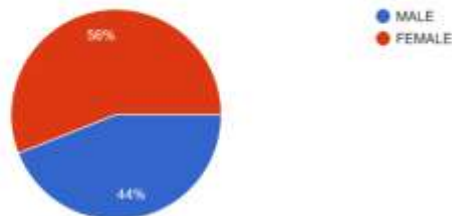
This study will examine the potential of different E-Learning platforms which will contribute to India's vision of becoming a developed nation. It will explore the platforms which become accessible to the rural education. These platforms provide flexibility to the teachers and a good learning experience to the students. Thus E-Learning have brought a vast change in imparting the education as compared to the traditional method.

**DATA ANALYSIS AND INTERPRETATION :**



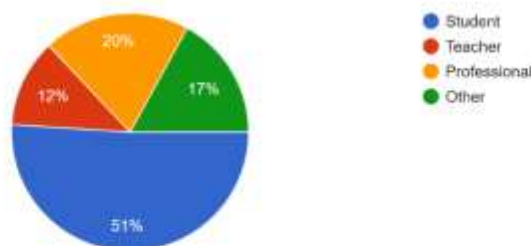
From the above pie chart it can be stated that 18-28 years of age are more preferring digital tools for their development which constitute 50% . 28-38 years of age are less likely use tools i.e 19%. Respondence above the age of 48 are very less to use digital tools.

GENDER  
100 responses



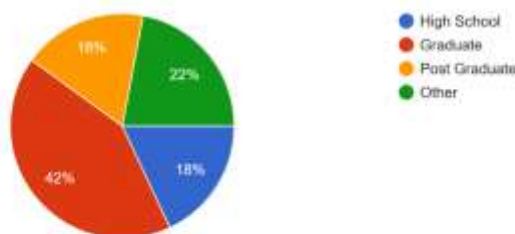
The responses from above states that male use more of digital tools as compare to womens. Males contribute to 56% while that of women is 44%.

WHAT IS YOUR OCCUPATION?  
100 responses



The survey finds out that the occupation level also impacts the usage of digital tools. Students are more using the tools for different purpose i.e 51%. While teachers are 12% and Professional usage is about 20%.

WHAT IS YOUR LEVEL OF EDUCATION?  
100 responses

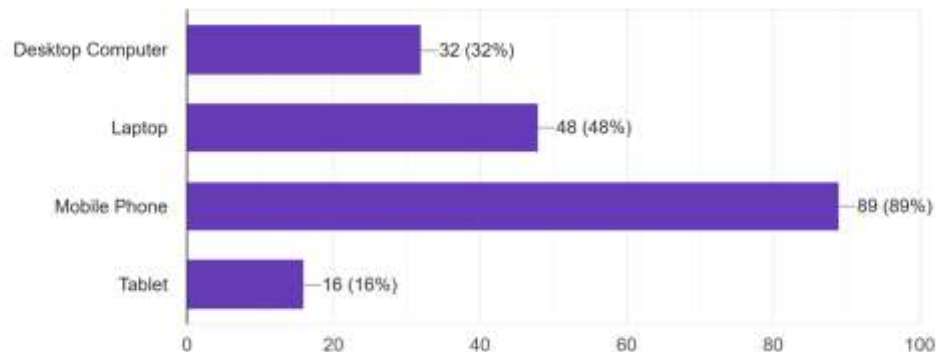


The above survey shows that e-learning platforms are most used by the graduates (42%). At this stage is is required for many other developments. While the High school contribute to 18% ,Post graduate 18% . Apart from the mentioned above others use this platforms is 22%.



## THROUGH WHICH MODE DO YOU ACCESS E-LEARNING PLATFORMS.

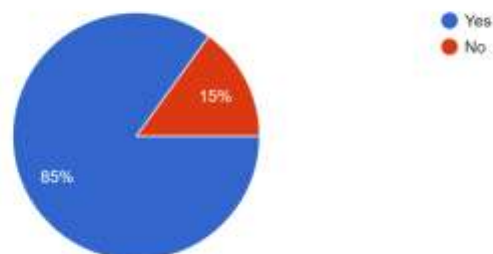
100 responses



To get access to any of the platforms different modes are required to get connected. 32% of the respondents state that they connected through their desktop computer while 48% get through their Laptops. As majority of the respondents get access through their mobile phones and a very few number get connected through their laptops.

## HAVE YOU USED ANY E-LEARNING PLATFORM BEFORE?

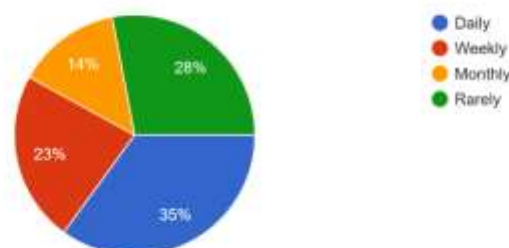
100 responses



The survey shows 85% of the respondents have used different E-Learning platforms while 15% have used minimal or not used at all.

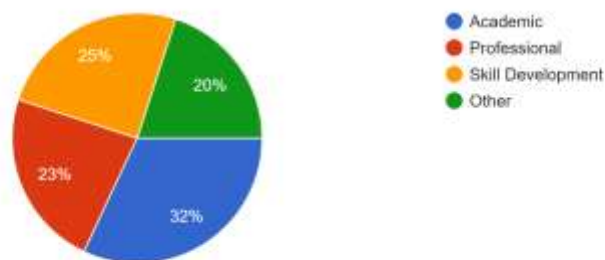
## HOW OFTEN DO YOU USE E-LEARNING PLATFORM?

100 responses



The respondents of 35% use daily the E-Learning platforms , 23% of them use weekly . A less percentage use monthly i.e 14%. 28% are those respondents who use rarely as and when required to them.

WHAT IS THE PURPOSE OF USING E-LEARNING PLATFORM?  
100 responses



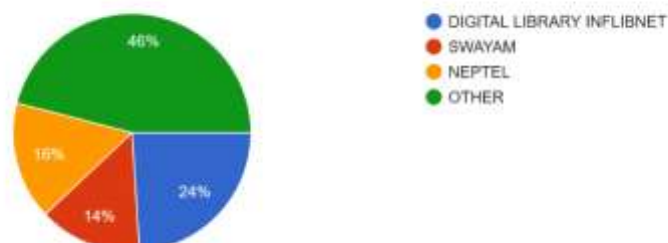
The respondents stated that they used the platform for different reasons like 32% of them use for Academic purpose , 23% of them use for professional work , 25% of them used for developing their skills and 20% of them use for other purpose apart of them mentioned above.

DO YOU THINK E-LEARNING PLATFORMS ARE EFFECTIVE IN ENHANCING LEARNING OUTCOMES?  
100 responses



99% of the respondents agreed that E-Learning platforms have benefitted them a lot in the area of their deficiency while a minor of them disagree with it.

WHICH PLATFORM DO YOU USE THE MOST?  
100 responses



14% of the respondents use SWAYAM platform , 16% of them use NEPTEL , 24% use Digital Library for their work. But majority of them use other platforms , apart of them mentioned above i.e 46%.

### CONCLUSION :

Thus it can be concluded that the above study had a great impact on the educational level of the individuals as per the vision of Viksit Bharat. Various E-Learning platforms are initiated by the Government of India enhancing the growth of education among the individuals. Thus the vision of Viksit Bharat can be achieved. People are flexible in getting and developing their skills which are ,most required in this changing world.

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## THE ROLE OF KNOWLEDGE PROCESS OUTSOURCING (KPO) IN DRIVING INNOVATION IN IT, HEALTHCARE, AND FINANCE

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### *Abstract*

Knowledge Process Outsourcing (KPO) contributes significantly to innovation in the service industry by offering specialized knowledge, cutting-edge analytics, and insights derived from research. This research investigates how KPO improves technological developments, efficiency, and service quality in sectors such as IT, Healthcare, and Finance. The study investigates the influence of KPO on innovation, emphasizing advantages including knowledge transfer, cost savings, and enhanced decision-making. Problems like data security threats and dependence on external providers, however, continue to be issues. The results indicate that in the dynamic global market, strategic KPO collaborations promote competitive advantage and sustained innovation.

**Keywords:** *KPO, Innovation, AI, efficiency, government policy*

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### **Introduction**

Knowledge Process Outsourcing (KPO) plays a crucial role in today's global economy by enabling business to access specialized expertise and improve operational efficiency. KPO deals with more complex and strategic functions such as healthcare, IT, research, legal services, and financial consulting. Indian companies are contributing nearly 70% to the world KPO industry. Several factors contribute to India's global leadership such as:

- ✚ Skilled Workforce - India has a large pool of highly skilled professionals in various fields, including IT, healthcare, engineering and finance.
- ✚ Cost Efficiency - As compared to western locations, the Indian market has very low cost.
- ✚ Technological Infrastructure - Computer hardware, Systems software, Communication and networking systems supports the efficient delivery of KPO services.

Global companies are outsourcing knowledge-intensive processes to countries like India, China and the Philippines.

### **Research Methodology**

A descriptive study based on secondary data will highlight the trends in select service sectors. The study will also touch upon the challenges, opportunities and government initiatives in the KPO sector.

### **Research Objectives include,**

- ✚ To examine the role of KPO in driving innovation in the service sector.
- ✚ To analyze how KPO influences service quality, efficiency, and technological advancements.
- ✚ To evaluate the challenges and opportunities that KPO brings to innovation.
- ✚ To assess the impact of KPO on business performance in the service industry.
- ✚ To highlight the role of government in the growth of KPO in India

### **Data Collection Methods**

The data is purely secondary from reference books, articles and websites on KPO's role in business innovation.

## Research Limitations

The dynamic nature of the service sector, which may affect long-term findings.

## Literature Review

- ✚ According to a study by **Gupta & Sharma (2020)**, IT companies use KPO for cloud computing, data analytics, cybersecurity, and software development. According to the survey, IT companies may concentrate on their core capabilities by outsourcing knowledge-intensive work, which increases productivity and spurs innovation. However, protecting intellectual property and data security continue to be major obstacles.
- ✚ AI-driven automation has improved software testing, predictive analytics, and technical support services, transforming IT KPO, claim **Singh & Patel (2021)**. There is now a greater need for specialized KPO companies providing AI-based services due to the combination of cloud-based solutions and machine learning.
- ✚ **Mehta & Rao's (2019)** article explores KPO's function in clinical research, medical transcription, healthcare analytics, and telemedicine. According to the report, healthcare providers can cut expenses while still providing patients with high-quality care through outsourcing. Strict control is necessary, nonetheless, due to legislative obstacles and concerns about patient data confidentiality (HIPAA compliance).
- ✚ A study by **Brown et al. (2022)** talks about how big data and AI are becoming more and more important in healthcare KPO. According to the report, hospitals and insurance companies may improve medical decision-making by processing vast volumes of patient data, disease prediction models, and customized treatment plans with the aid of KPO organizations that specialize in healthcare analytics.
- ✚ According to a study by **Kumar & Jain (2020)**, KPO companies are frequently used for investment research, financial modeling, risk assessment, and compliance monitoring. Financial organizations gain from affordable analytical assistance, but issues like data security and regulatory compliance necessitate ongoing oversight.
- ✚ According to **Desai & Kapoor (2021)**, FinTech advancements such as blockchain, AI-driven risk assessment, and automated financial reporting have reshaped financial KPO. The study suggests that firms offering AI-powered financial solutions are seeing rapid growth, but cybersecurity remains a major concern.

## Challenges of the KPO Industry

### 1. Talent Shortage and Skill Gaps

Finding and keeping specialized personnel is a significant challenge, and the requirement for ongoing training and upskilling drives up operating expenses. KPO services demand highly qualified professionals with knowledge in fields such as finance, law, healthcare, and analytics.

### 2. Data Security and Confidentiality Risks

KPO companies are susceptible to cybersecurity risks, data breaches, and intellectual property theft because they handle sensitive client data. Robust security measures are necessary to ensure compliance with international data protection regulations.

### 3. High Operational Costs

In contrast to BPOs, which concentrate on repetitive operations, KPO companies need highly skilled workers and cutting-edge technology, which raises the expense of infrastructure, training, and compensation.

#### **4. Cultural and Communication Barriers**

Due to language, cultural, and business practice variations, KPO companies frequently deal with clients from other nations, which can lead to miscommunications and inefficiencies.

#### **5. Rapid Technological Changes**

AI, automation, and machine learning are causing many KPO services to change. To be competitive, businesses must constantly invest in new technologies, which puts further burden on their finances.

#### **6. Stringent Compliance and Regulatory Issues**

KPO companies have to adhere to a variety of rules in many industries and nations. It can be difficult to navigate legal complexity, particularly in the areas of finance, healthcare, and intellectual property legislation.

#### **7. Client Dependency and Market Competition**

Many KPO firms have limited clientele, and thus are susceptible to changes in demand and contract terminations. Pricing and service quality are also under strain due to growing competition from emerging markets.

### **Opportunities in the KPO Industry**

#### **1. Growing Demand for Specialized Services**

There is a huge need for KPO services since sectors including banking, healthcare, legal, IT, and research need highly qualified workers for intricate jobs like market research, financial analysis, and legal process outsourcing.

#### **2. Advancements in AI & Automation**

KPO services are becoming more efficient with the integration of big data analytics, machine learning, and artificial intelligence (AI). Businesses may provide quicker and more precise answers by investing in these technologies, giving them a competitive advantage.

#### **3. Expansion into Emerging Markets**

Emerging nations like India, the Philippines, and Eastern Europe are developing into global KPO hubs, providing access to qualified personnel at reduced prices as corporations look for more affordable knowledge solutions.

#### **4. Rise of Data-Driven Decision-Making**

KPO companies that focus on data science, AI analytics, and strategic consulting have opportunities as a result of the increased use of business intelligence and predictive analytics.



#### **5. Remote Work & Global Collaboration**

Following the pandemic, KPO companies are now able to interact globally because to remote work and digital transformation, which has decreased regional restrictions and increased their service reach.

### **Impact of KPOs on select Service Sector**

#### **IT Industry**

Knowledge Process Outsourcing (KPO) is undergoing ground breaking transformation in IT industry by enhancing efficiency, reducing costs, and fostering innovation.

-  By leveraging KPO services, IT companies can focus on their core competencies while outsourcing knowledge-intensive processes to specialized firms.
-  One of the key benefits of KPOs in the IT sector is the acceleration of research and development. KPO firms provide expertise in emerging technologies such as artificial intelligence, blockchain, and cloud computing, enabling IT companies to stay competitive in a rapidly evolving market.

- ✚ Additionally, KPOs facilitate a more agile operational structure by offering flexible and scalable solutions tailored to industry demands.
- ✚ By outsourcing specialized IT services to KPOs, companies can significantly reduce overhead costs associated with in-house development and training. This financial efficiency allows businesses to allocate resources towards innovation and customer-centric solutions.
- ✚ KPOs play a vital role in data-driven decision-making. With access to high-quality data analytics and business intelligence, IT companies can make informed strategic decisions, enhance operational efficiency, and improve customer experience.

### Healthcare Industry

Knowledge Process Outsourcing (KPO) is transforming the healthcare industry by enabling data-driven decision-making.

- ✚ KPOs use AI and machine learning to analyse large healthcare datasets, leading to early disease detection and predictive analytics for better patient outcomes.
- ✚ Data-driven insights from EHRs help optimize treatment plans, reduce redundant tests, and streamline workflows.
- ✚ AI-powered analytics help in staff scheduling, inventory management (for medicines & equipment), and cost optimization.
- ✚ KPOs analyse insurance claims data to detect fraudulent claims and reduce financial losses.
- ✚ AI-based pattern recognition in KPO-driven analytics helps identify potential side effects of drugs faster.
- ✚ KPOs process epidemiological data to track and predict disease outbreaks (e.g., COVID-19, influenza).
- ✚ Governments and health agencies use KPO-driven insights for policy-making, vaccination programs, and resource allocation.

With advancements in AI, blockchain, and digital twin simulations, KPOs will further transform clinical R&D by:

- ✚ Predictive clinical trials using AI simulations
- ✚ Decentralized trials through remote patient monitoring
- ✚ Automated regulatory compliance via blockchain for secure data sharing

### Finance Industry

Knowledge Process Outsourcing (KPOs) has revolutionized the finance industry by providing highly specialized financial analysis and consulting services to banks, investment firms, asset managers, and corporations. With expertise in big data, AI-driven analytics, and financial modelling, KPOs help organizations make informed decisions, optimize investment strategies, and improve risk management.

- ✚ KPOs assist investment firms in analyzing market trends, financial statements, and macroeconomic data to provide accurate stock, bond, and commodity valuations.
- ✚ KPOs provide in-depth due diligence, risk assessment, and synergy analysis for M&A transactions.
- ✚ Predictive analytics help banks and financial institutions assess loan default risks and optimize lending strategies.
- ✚ AI-driven financial models help wealth managers create diversified portfolios based on client risk profiles.
- ✚ AI-driven tax planning models ensure efficient tax structuring and regulatory adherence.



- AI-powered forensic analysis helps detect financial fraud, money laundering, and insider trading activities.

The integration of AI, blockchain, and predictive analytics will further enhance the role of KPOs in finance by:

- Automating financial analysis & forecasting for better decision-making
- Providing real-time risk assessment & fraud detection using AI
- Optimizing investment portfolios with AI-powered robo-advisors
- Enhancing regulatory compliance through blockchain-based audit trails

### **Growth of the KPO Industry in India & Its effects on the economy**

India has emerged as a global leader in Knowledge Process Outsourcing (KPO) due to its highly skilled workforce, cost advantages, and advanced technological capabilities. The industry has grown exponentially over the last two decades, with an increasing demand for high-value knowledge-based services across various sectors like finance, healthcare, legal, IT, and R & D.

#### **Key Growth Statistics**

- The Indian KPO industry is projected to grow at a CAGR of 15-18%, driven by increasing global demand. India accounts for over 70% of the global KPO market share, making it the largest KPO hub worldwide.
- The sector contributes significantly to India's GDP, generating billions in revenue and employment. The KPO industry employs over 500,000 professionals and is expected to add 1 million+ jobs by 2030. It has created high-paying jobs in finance, healthcare, legal research, data science, and analytics.
- Upskilling programs and partnerships with universities have enhanced India's knowledge economy. KPO exports contribute over \$20 billion to India's economy annually.
- MNCs from the US, UK, EU, and APAC are investing heavily in Indian KPO centers. The government's 100% FDI allowance in IT & KPO has further boosted investments.
- Indian KPO firms are at the forefront of AI, blockchain, and big data analytics, supporting global R&D initiatives. The rise of AI-driven KPO solutions is helping businesses achieve faster decision-making and automation.

#### **Government Initiatives Supporting KPO Growth**

- The Digital India initiative has improved internet penetration, AI adoption, and cybersecurity, enhancing KPO operations.
- SEZ (Special Economic Zones) benefits offer tax incentives & relaxed regulations for KPO firms.
- India's AI Strategy (2021) initiatives are driving AI-powered knowledge services in areas of finance, healthcare, and legal KPOs.
- NASSCOM (National Association of Software & Service Companies) works with the government to support the IT & KPO sectors. Government-backed incubators are supporting deep-tech KPO startups.
- Make in India & Startup India Initiatives boost entrepreneurship & attract investments in tech-driven sectors like KPO. It helps KPO startups access funding & mentorship & thereby promotes India as a global innovation hub for knowledge-based services.
- Simplified compliance regulations improve ease of doing business for KPO firms.

- ✚ The Skill India Mission focuses on AI, data science, finance, and research training. It has aided in creating a highly skilled workforce for financial analysis, medical research, and legal KPOs. It also encourages collaborations between universities & KPO firms.

India ranks among the top outsourcing destinations due to its business-friendly policies. Trade agreements with the US, UK, EU, and ASEAN boost KPO exports

### Conclusion

The rise of Knowledge Process Outsourcing (KPO) has significantly influenced innovation in service sector industries such as IT, healthcare, and finance. By leveraging specialized expertise, advanced analytics, and process optimization, KPOs have enabled businesses to enhance efficiency, reduce costs, and focus on core competencies.

The advantages of KPOs in promoting innovation and competitive advantage are indisputable, even in the face of obstacles like data security issues and dependency hazards. Furthermore, there is a great deal of room for advancement given the government's strong backing and the programs created to assist KPOs in overcoming obstacles. KPOs will continue to play a crucial role in facilitating change as companies adapt to a digital and globalized environment, pushing the frontiers of innovation in the service sector.

### Scope for future research

For future research, other researchers can explore:

- ✚ **Emerging Technologies in KPO** – AI, blockchain, and automation's impact on KPO efficiency and workforce.
- ✚ **Industry-Specific Expansion** – KPO's role in legal outsourcing, pharmaceuticals, and engineering services.
- ✚ **Comparative Analysis** – Performance of KPO across countries and the influence of cultural/regulatory factors.
- ✚ **Human Capital & Skill Development** – Training needs, remote work challenges, and evolving job roles in KPO.
- ✚ **Policy & Governance** – Government incentives, data security, and ethical concerns in high-value outsourcing.
- ✚ **Economic & Social Impact** – KPO's role in employment, economic growth, and sustainability.

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## THE ROLE OF STATISTICS IN LOGISTICS FOR VIKSIT BHARAT

**Ravi Kumar Pal**

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### *Abstract*

*As India advances towards the vision of Viksit Bharat, the integration of statistical methods into logistics will be crucial for economic progress. Utilizing statistical tools enhances data-driven decision-making, optimization, and operational efficiency, ensuring seamless transportation of goods and services. This study examines the various statistical techniques employed in logistics, including descriptive and inferential statistics, regression analysis, and predictive modeling. It explores their applications in demand forecasting, inventory control, transportation management, and supply chain optimization to support India's development. Additionally, the paper discusses challenges and emerging trends in applying statistics to logistics in the context of a developed India.*

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### **Introduction**

A well-structured logistics framework is essential for national growth and economic sustainability. In alignment with the Viksit Bharat initiative, the application of statistical methodologies in logistics is key to optimizing supply chain operations, minimizing costs, and ensuring timely deliveries. Statistical tools enable businesses to evaluate historical trends, predict future demands, regulate inventory, and enhance transportation planning. This paper delves into the significance of statistics in logistics, emphasizing its role in India's journey towards becoming a developed nation.

### **Objectives**

The primary aims of this research paper are:

1. To analyze the contribution of statistical methods in streamlining logistics operations for Viksit Bharat.
2. To examine the impact of statistical tools on demand forecasting and inventory control in India's economic expansion.
3. To assess the efficiency of statistical models in transportation and route planning for India's growing infrastructure.
4. To identify challenges associated with the adoption of statistical approaches in Indian logistics.
5. To explore future advancements and technological developments in the application of statistics in India's logistics sector.

**Application of Statistics in Logistics** Statistical techniques play a vital role in improving precision, efficiency, and reliability across various logistics functions, ensuring alignment with the vision of Viksit Bharat. The following are key areas where statistics is applied:

1. **Demand Forecasting**

For a rapidly expanding economy, accurate demand forecasting is essential to maintain inventory levels and ensure the availability of critical goods. Statistical methods such as time series analysis, exponential smoothing, and regression models assist in predicting future demand based on historical data. These techniques help prevent supply chain disruptions and facilitate seamless distribution across urban and rural regions.

2. **Inventory Management**

Efficient inventory control, driven by statistical analysis, supports initiatives such as Make in India and Atmanirbhar Bharat. Techniques like Economic Order Quantity (EOQ), Just-in-Time (JIT) inventory, and ABC classification enable businesses to maintain optimal stock levels.

Probability distributions, including Poisson and normal distributions, assist in estimating demand variability and safety stock requirements, ensuring continuous production and supply.

3. **Transportation and Route Optimization**

Optimized transportation networks are essential for realizing the Viksit Bharat vision. Statistical models aid in refining transportation routes, minimizing fuel consumption, and enhancing delivery efficiency. Methods such as linear programming, Monte Carlo simulations, and statistical sampling facilitate the design of cost-effective logistics frameworks, supporting India's Smart Cities and infrastructure expansion programs.

4. **Quality Control in Logistics**

Maintaining high-quality logistics services is crucial for India's global trade competitiveness. Statistical Process Control (SPC) and Six Sigma methodologies employ data analysis to monitor performance, identify defects, and enhance process efficiency, thus improving the global reach of products manufactured in India.

5. **Supply Chain Optimization**

Statistical tools empower supply chain managers to evaluate supplier performance, warehouse efficiency, and distribution effectiveness. Techniques such as correlation analysis and cluster analysis support supplier segmentation and pattern identification, enhancing supply chain operations. This is particularly beneficial for India's burgeoning e-commerce and manufacturing sectors.

**Statistical Techniques Utilized in Logistics** Various statistical techniques support data analysis and decision-making, thereby contributing to India's economic growth:

1. **Descriptive Statistics**

Descriptive statistics summarize logistics data using measures like mean, median, mode, standard deviation, and variance. These insights help policymakers and businesses make informed decisions to strengthen India's logistics sector.

2. **Inferential Statistics**

Inferential statistical techniques enable decision-makers to draw conclusions from sample data. Methods such as hypothesis testing, confidence intervals, and chi-square tests aid in national-level logistics planning and strategic decision-making.

3. **Regression Analysis**

Regression models establish relationships between variables and assist in making predictions. In logistics, regression techniques facilitate demand forecasting, cost estimation, and analysis of factors influencing delivery times, contributing to India's logistics modernization.

4. **Predictive Analytics**

Predictive analytics leverages historical data and machine learning to forecast future trends. These models enhance risk management, mitigate supply chain disruptions, and optimize inventory planning, supporting India's ambitious economic goals.

**Challenges in Implementing Statistical Methods in Logistics** Despite its advantages, the integration of statistical methods in India's logistics industry faces several obstacles:

1. **Data Quality and Accessibility:** Inaccurate or incomplete data may lead to flawed conclusions, impacting supply chain efficiency.
2. **Complexity of Statistical Models:** Advanced models require skilled professionals for interpretation and implementation.

3. **Technological Integration:** Many Indian enterprises struggle with incorporating statistical tools into their existing logistics software.
4. **Financial Constraints:** Investments in statistical tools necessitate significant expenditures on software, training, and infrastructure.

**Future Trends in Statistical Applications in Logistics** Technological advancements are expected to enhance the role of statistics in India's logistics sector. Emerging trends include:

1. **Big Data Analytics:** Leveraging big data methodologies to process large datasets and uncover insights, supporting India's digital economy.
2. **Artificial Intelligence and Machine Learning:** AI-driven analytics will refine decision-making by providing real-time insights and automating logistics processes for a self-sufficient India.
3. **Blockchain Technology:** Enhancing data security and transparency in logistics operations, benefiting India's trade and export sectors.
4. **IoT and Real-Time Analytics:** The Internet of Things (IoT) facilitates real-time tracking and monitoring of goods, generating instantaneous statistical insights crucial for India's logistics efficiency.

### Conclusion

The application of statistical methods in logistics will be instrumental in achieving the vision of Viksit Bharat. By leveraging statistical tools, India can enhance inventory management, improve demand forecasting, optimize transportation efficiency, and streamline supply chain operations. However, challenges such as data accuracy, model complexity, and integration hurdles must be addressed to maximize the benefits. As technological innovations continue, the role of statistics in India's logistics sector will evolve, fostering a more advanced and efficient logistics framework that supports national development.

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**Abstract**

*The dream of Viksit Bharat (Developed India) is proposed to be fulfilled by the year 2047. This vision encompasses the holistic development of the nation, ensuring progress for each and every citizen. A key factor in achieving this goal is the contribution of India's demography*

*A demographic dividend describes the potential for economic growth that arises when the population of working-age individuals exceeds that of dependents, largely due to longer life expectancies and lower fertility rates. This change in demographics offers a distinct chance for rapid economic and social advancement, provided it is complemented by strategic policies in education, skill development, healthcare, and employment.*

*This study explores one of the key factors influencing demographic dividend—education, with an explicit focus on elementary education, dropout rates among boys and girls, and its broader societal impact. The rationale for selecting this topic lies in the fact that primary education serves as the foundational and crucial step toward harnessing the benefits of a demographic dividend.*

**Key words:** Education, Teachers, Quality, drop outs, development

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**Review of literature**

The author reviewed literature on elementary education in India, covering legal and historical aspects. It covered constitutional provisions and policies, these works provide a solid foundation for understanding the complexities and challenges in the Indian education system.

1. **Durga Das Basu - Introduction to the Constitution of India (26th Edition, 2022, Lexis Nexis Publication)** The authors have reviewed the work of this Book. It provides an in-depth analysis of the Indian Constitution, tracing its historical evolution, key principles, and interpretations by the judiciary. The book provides clarity and comprehensiveness of Basu's analysis hence the authors have referred to it .
2. **J Krishnamurti - On Education (2014, Sudarshan Graphics)** This book work on education challenges traditional pedagogical approaches and emphasizes holistic learning. He advocates for a learning process that nurtures curiosity, creativity, and self-awareness rather than rote memorization. The book argues for an education system free from authoritarian structures, promoting an environment where students can explore knowledge organically. Krishnamurti's ideas are particularly relevant in discussions on alternative education and child-centric learning models.
3. **S K Paneer Selvam and K Pandian - Achievement Factors in Education (2012, Navyug Books International)** The authors examined various determinants of academic success, including socio-economic background, teacher effectiveness, curriculum design, and student motivation. The book speaks about Teaching competency and Job satisfaction..
4. **Gautam Amit – Emerging Issues and Challenges in Education (2018, Writers Choice)** Th authors explored Gautam Amit's book about contemporary challenges facing the education sector, including environmental education and policy reforms. It discusses role of ICT in open distant learning. The book provides a critical analysis of ethical issues in any kind of research



and measures to address emerging challenges. This work is useful for education researchers seeking to understand modern trends and challenges in education.

5. **Mane M S – Right to Education (2015, Chandralok Prakashan)** This book examines the Right to Education Act in India, its objectives, challenges in implementing it, and its effect on minorities. The author evaluated the effectiveness of the Act in ensuring universal education and identifies gaps in policy execution.
6. **Ghosh Suresh - History of Education in India (2016, Rawat Publications)** This book traces the composition of vedic school and challenges faced in ancient times to the present. Ghosh highlights the impact of colonial policies, post-independence reforms, and contemporary educational trends. The book provides a history on how historical events have shaped modern educational policies and practices.

### Research Gap

Some key research gaps in elementary education in India:

- Implementation: There is a gap between the Law and actual implementation of RTE Act particularly in rural and tribal areas
- Quality education- Research is required to identify the quality of education provided to children under RTE Act
- Consistency in education- Research is required to know about the factors responsible for admission as well as dropouts among Children from marginalised background
- Digital access- studies are required to identify resources such as infrastructure and digital resources affect students from this category

### Objectives

**Objectives of research are:**

1. To evaluate the Implementation of Educational Policies formed by government
2. Analysing factors influencing quality of education and Skills among students
3. Identifying barriers to elementary education
4. To study the reasons for dropouts rates of children in various states and conditions influencing them.
5. To evaluate the different government schemes like mid-day meals and scholarships in improving education among children

### Introduction

**Education is the most powerful weapon we can use to change the world-Nelson Mandela**

Estimates regarding the duration of Homo sapiens on Earth vary between 30,000 and 200,000 years. The exact timeframe remains uncertain. What is clear is that the brains of our ancestors, Homo sapiens, are identical to ours today. We are fundamentally the same as those early humans, lacking any additional neurons or superior neural connections. However, the methods we use to think—our concepts, hypotheses, theories, and models—have significantly advanced. Skills such as drawing, writing, and critical thinking have all been developed, often through considerable effort, and this knowledge has been transmitted across generations. The sole reason for our improved abilities in thinking and accomplishing tasks now is the accumulation of knowledge and the transmission of ideas and information through education from one generation to the next. Education stands as a distinctive investment for both the present and the future. It serves as the foundation for a nation's advancement.



In contemporary society, education is the most reliable and effective means to foster growth and development in every aspect of human endeavor.

In India, the right to free and compulsory education is enshrined in Part III of the Constitution as a fundamental right, reflecting an inherent and essential aspect of human dignity. Prior to 2002, the responsibility of ensuring early childhood care and education for all children up to the age of six rested with the State under the Directive Principles of State Policy (DPSP) in Part IV of the Constitution.

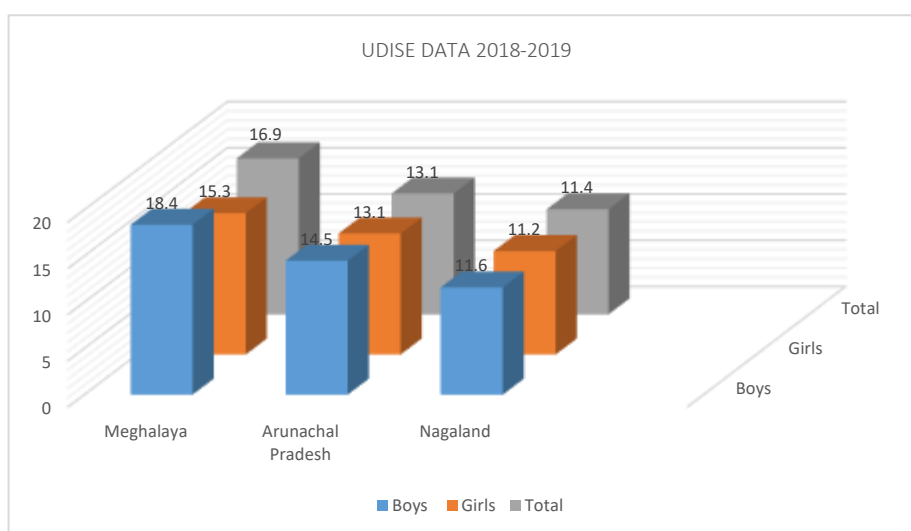
After the case of **Mohini Jain v. State of Karnataka (1992)**, the Supreme Court held that the **right to education is a fundamental right under Article 21 (Right to Life) of the Indian Constitution** and emphasized that the state has a duty to provide education to all and that education is essential for the exercise of other fundamental rights.

Again in **Unni Krishnan v. State of Andhra Pradesh (1993)**, the Supreme court reaffirmed that **Education up to the age of 14 is a fundamental right** under Article 21, aligning with Article 45 of the Directive Principles of State Policy. It laid the groundwork for **Article 21A**, which was later added to the Constitution by the 86th Amendment (2002), making free and compulsory education under Article 21-A in Part III, thereby extending its coverage from six years to fourteen years of age

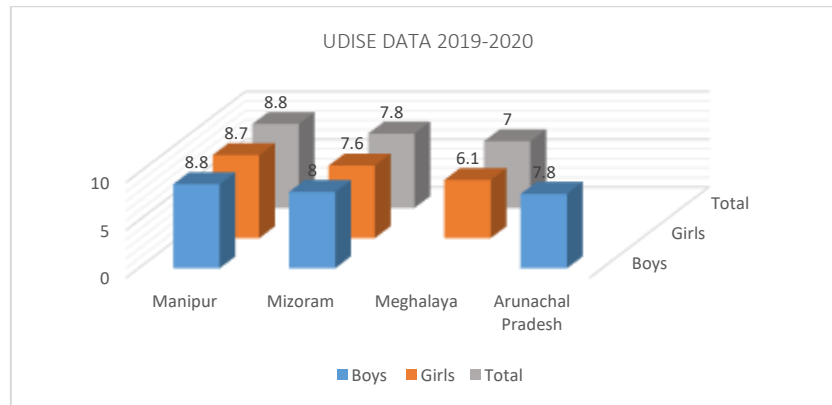
To implement the mandate of Article 21-A effectively, the Union Legislature enacted the Right of Children to Free and Compulsory Education Act, 2009, reinforcing the commitment to universal primary education.

#### UDISE DATE 2018-2023

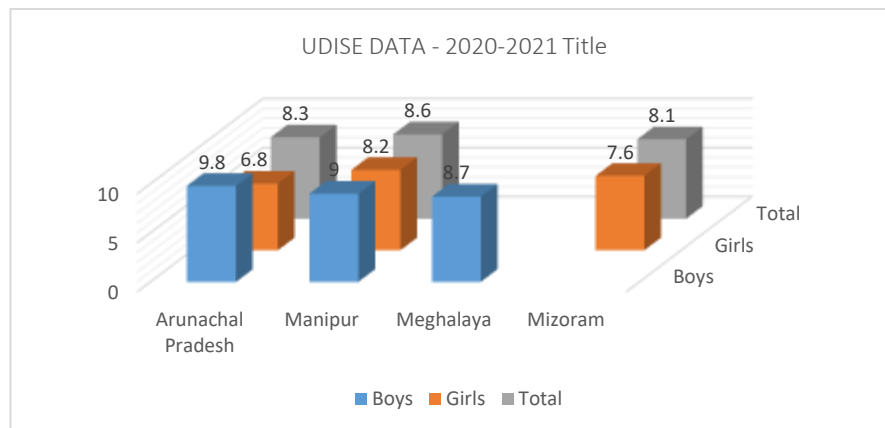
Sr. No.	Year	Boys	Percentage	Girls	Percentage	Total	Percentage
1	2018 - 2019	Meghalaya	18.4%	Meghalaya	15.3%	Meghalaya	16.9
2		Arunachal Pradesh	14.5%	Arunachal Pradesh	13.1%	Arunachal Pradesh	13.1
3		Nagaland	11.6%	Nagaland	11.2%	Nagaland	11.4



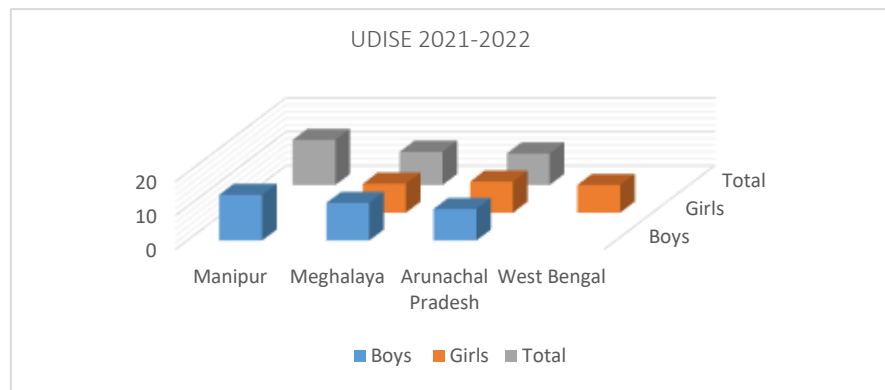
<b>2019-2020</b>					
<b>Name of the State</b>	<b>Boys</b>	<b>Name of the State</b>	<b>Girls</b>	<b>Name of the State</b>	<b>Total</b>
Manipur	8.8	Manipur	8.7	Manipur	8.8
Mizoram	8.0	Mizoram	7.6	Mizoram	7.8
Arunachal Pradesh	7.8	Meghalaya	6.1	Meghalaya	7.0



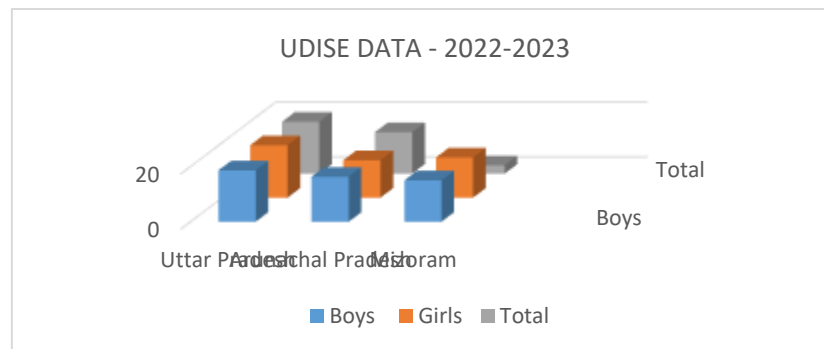
<b>2020-2021</b>	<b>Boys</b>	<b>Girls</b>	<b>Total</b>
Arunachal Pradesh	9.8	6.8	8.3
Manipur	9.0	8.2	8.6
Meghalaya	8.7		
Mizoram		7.6	8.1



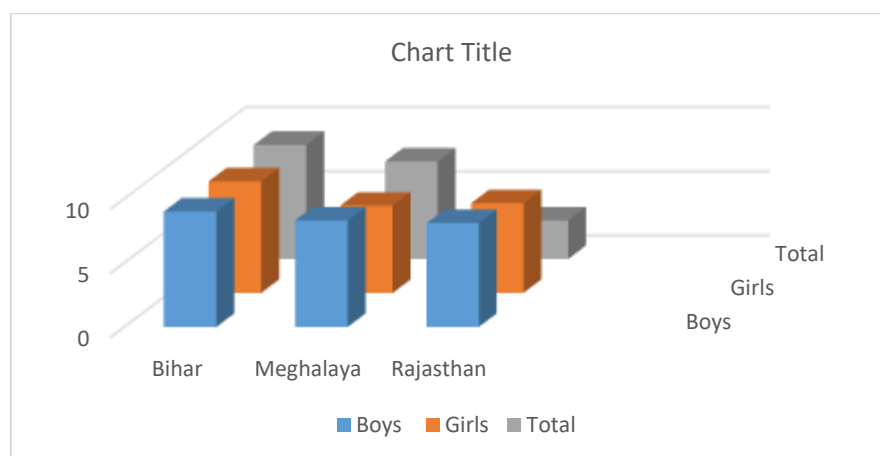
<b>2021-2022</b>	<b>Boys</b>	<b>Girls</b>	<b>Total</b>
Manipur	13.5		13.3
Meghalaya	11.1	8.6	9.8
Arunachal Pradesh	9.3	9.2	9.3
West Bengal		8.2	



2022-2023	Boys	Girls	Total
Uttar Pradesh	18.6	19.0	18.8
Arunachal Pradesh	16.3	13.6	15.0
Mizoram	15.0	14.6	14.8



2023-2024	Boys	Girls	Total
Bihar	9.0	8.7	8.9
Meghalaya	8.3	6.8	7.5
Rajasthan	8.1	7.0	7.6



**Analysis of Data –**

The Ministry of education publishes the UDISE (Unified District Information System for Education) Report on its website, which contains comprehensive, state-wise information about schools in India, the Ministry of Education's official website offers a range of educational statistics and reports. These resources provide detailed data on various aspects of school education across different states.

As per the data given by Ministry of Education in the UDISE Report 2023-24 India has one of largest school education systems in the world, comprising approximately 14.72 lakh schools, over 98 lakh teachers, and nearly 24.8 crore students. The quality of primary education serves as a fundamental pillar of any civil society, ensuring stability, progress, and social harmony. However, this research paper focuses on the dropout rate in primary education. The authors have analysed data from three states with the highest dropout rates.

In 2018-19, Meghalaya recorded the highest dropout rate in India for primary education, with 18.4% for boys and 15.3% for girls. In 2019-20, Manipur took this position, 8.8% for boys and 8.7% for girls. The following year, in 2020-21, the highest dropout rates were shared between two states—Arunachal Pradesh had the highest percentage for boys viz., 9.8%, while Manipur recorded the highest percentage for girls viz., 8.2%. In 2021-22, a slight reversal occurred, with Manipur reporting the highest dropout rate 13.5% for boys and Arunachal Pradesh 9.2% for girls. Subsequently, in 2022-23, Uttar Pradesh recorded the highest dropout rates for both boys 18.6% and girls 19.0%. However, in 2023-24, Bihar surpassed Uttar Pradesh, taking the lead in primary education dropouts for boys 9.0% and girls 8.7%.

**Conclusion and suggestions**

As mentioned in above statistics, we can find multiple challenges responsible for the higher drop out rates including:

- Economic Factors which include Poverty, Income Inequality, Access to Resources
- Social and Cultural Factors including Traditions & Beliefs, Education & Literacy, Discrimination, Family & Community Influence,
- School-Related Issues including Quality of Education, Teacher Shortages, Bullying & Peer Pressure and School Infrastructure
- Health-Related Issues including Malnutrition & Hunger, Diseases & Pandemics, Mental Health Problems, Limited Healthcare Access
- Migration & Displacement including Forced Displacement, Economic Migration.

To address these issues, a holistic approach focusing on teacher training, digital education, vocational skills, and community participation is essential

Education plays a vital role in shaping responsible citizens who contribute to society through civic engagement and ethical behaviour. To bring reforms in education, **some significant recommendations are:**

**1. Financial Assistance:** Providing financial support like scholarships and grants to under privileged students can advance educational access. Reducing the tuition fees to such students families can provide sponsored education. Rewarding students and teachers for their academic endeavors and progress can be help in improving the level of education.

**2. Improving School Infrastructure** by way of establishing educational institutes in remote and isolated regions, elevation of facilities to ensure proper drinking water, electricity, and hygiene in schools, also by making available educational materials likes books, computers, and lab tools for effective learning, and also increasing digital platform to support e-learning of students.

3. **Enhancing Teaching Performance** by recruiting competent teachers, managing student-teacher ratios, and retaining modern-day teaching techniques such as employing student-centric methods instead of traditional rote learning methods which is less beneficial in today's competitive world

4. **Embracing gender diversity** by encouraging girls education, forming protected learning surroundings, challenging hindrances by challenging gender norms that prevent girls from going to school, and accommodating flexible learning opportunities in school hours or remote education for girls who encounter social constraints.

5. **Harnessing technology** in education by employing digital tutorial room that combines the use of smartboards and online resources and at the same time filling the technology gap to assure access for students in rural and indigent regions.

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<https://www.unesco.org/en/right-education>

**CHALLENGES IN DATA PROTECTION IN HEALTHCARE INDUSTRY****Dr. Vaibhav Ashar***Faculty and HOD, Department of Finance, KES' Shroff College of Arts and Commerce**Email- vaibhav@kessc.edu.in. Mob- 9819154548***Dr. Saurabh Kotal***Co- Author, Faculty, Department of Finance, KES' Shroff College of Arts and Commerce**Email Address: kessaurabh8@gmail.com. Mob- 9356454276*

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**Abstract**

*Protecting sensitive patient information and ensuring compliance with applicable laws, such as the upcoming Personal Data Protection Bill, are essential objectives of data protection in the healthcare industry. Patient trust can be damaged and safety compromised by cyberattacks and data leaks. Procedures for effective data protection aid in averting these incidents. By focusing on data security, healthcare organizations may better serve the public and encourage individuals to share their health information for better treatment and results. The purpose of the study is to evaluate the challenges in data protection in the healthcare industry. The technique used in the study is one sample t-test. The findings of the study indicated that Patient Data Sensitivity, Ransomware Attack, Outdated IT Systems, Third-Party Risk, Large Attack Surface, Emerging Technologies, Insufficient Security Budget, Cloud Security, overlapping roles, Compliance with Regulations, Inadequate Encryption, Data Retention and Disposal are the challenges in data protection in the healthcare industry*

**Keywords:** *Healthcare, Artificial Intelligence, Data Protection, One Sample t-test.*

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**Introduction:**

The global healthcare industry is accustomed to change. For the foreseeable future, the clinical, operational, and business models—as well as the overall state of the economy—are clearly undergoing an enormous and significant change due to the digitisation of health and patient data. The shift in healthcare is being driven by various factors such as "ageing populations, changes in lifestyle, the proliferation of mobile devices and software applications, novel treatments," and a focus on quality and value of care. Evidence-based medicine, as opposed to subjective clinical judgements, is driving this shift and offers opportunities to "improve clinical decision-making, healthcare delivery, management, and policy-making, monitoring adverse events, surveillance of disease, and treatment optimisation for diseases affecting multiple organ systems" (Burghard, 2012, Fernandes, et al. 2012).

**Data Protection Challenges in Healthcare Industry**

Artificial Intelligence (AI) has emerged as a revolutionary force across numerous sectors in the era of rapid digital change, revolutionising data-driven innovation and decision-making. The crucial problem of data protection, which is essential to the ethical use of AI and regulatory compliance, is at the centre of this evolution. The combination of AI technology and strict data privacy regulations, like the General Data Protection Regulation (GDPR) in Europe and similar frameworks around the world, highlights the urgent need for all-encompassing and flexible approaches to protect people's right to privacy while promoting technological advancement. The plethora of AI applications—ranging from self-driving cars to personalised healthcare diagnostics—requires a sophisticated grasp of how data protection laws can be successfully incorporated into AI development cycles (Yanamala, et al. 2023).

**Enhancing Data Security and Patient Trust**

The sensitive nature of personal health information and the growing reliance on digital technology provide several issues for data protection in the healthcare sector. The risk of data breaches and

cyberattacks is a significant issue since healthcare organisations are often targets because of the importance of health data. The healthcare industry has seen a notable increase in cyberattacks, with ransomware being a common concern, according to the Healthcare Information and Management Systems Society (HIMSS) (HIMSS, 2020). Healthcare providers also often have trouble complying with privacy regulations, such as the Health Insurance Portability and Accountability Act (HIPAA) in the US and the General Data Protection Regulation (GDPR) in Europe. Adhering to these regulations' stringent security requirements can be challenging, especially for smaller companies with limited funding (Davis et al., 2020). An additional obstacle is the extensive utilisation of antiquated and susceptible to intrusion legacy systems. To guarantee improved data security, these systems must be updated, which may be costly and disruptive (Kumar & Wadhwa, 2021).

Moreover, there are dangers associated with data interchangeability and security as a result of the growing sharing of healthcare data among various platforms and third parties. Consent management for data sharing can be challenging, particularly in settings with many providers. This can lead to worries about sensitive patient data being misused or accessed without authorisation (Shenoy & Appel, 2021). These difficulties have been made worse by the COVID-19 epidemic and the rise of telemedicine, since remote consultations raise the risk of cyberattacks (Taneja, 2021).

This research is remarkable because it addresses important data protection issues that the healthcare sector faces, which is necessary to protect patient privacy and guarantee regulatory compliance. The study intends to improve data security procedures by recognising these issues and providing workable solutions, thereby boosting patient safety and trust.

#### **Review of Literature:**

1. **Yanamala, A. K. Y., & Suryadevara, S. (2023)** examined current developments, patterns, and difficulties at the nexus of artificial intelligence (AI) and data security, with a particular emphasis on the effects of legal frameworks and technical improvements on privacy compliance and preservation. The study discovered that breakthroughs like federated learning and legal frameworks like GDPR have a big impact on AI privacy protection and regulatory compliance. Fairness and transparency in AI algorithms are two ethical factors that will greatly influence how AI-driven data governance develops in the future.
2. **Yanamala, A. K. Y., et al. (2023)** assessed how data protection laws, like the CCPA and GDPR, affect the advancement and application of AI technology while highlighting the opportunities and problems faced by AI practitioners. The study discovered that laws about data privacy, such as the CCPA and GDPR, presented opportunities as well as obstacles for AI innovation. In addition to guaranteeing legal obedience, following these laws promoted confidence and openness, which in turn supported AI's sustained development. Case studies provide useful tactics for striking a compromise between innovation and legal requirements.
3. **Yaqoob, I., et al. (2022)** investigated how major issues including data openness, traceability, privacy, and security could be resolved by utilising blockchain technology to transform healthcare data management systems. According to the report, blockchain technology has a lot to offer healthcare data management, including improved security, decentralized control, and transparency. It emphasized ongoing initiatives and case studies that show how blockchain technology may be applied in the healthcare industry.
4. **Lee, D., & Yoon, S. N. (2021)** evaluated the state of AI-based healthcare apps at the moment and their effects on hospital operations and patient care. According to the survey, prominent



hospitals were using AI-enabled tools to help with patient diagnosis and treatment, as well as to increase the effectiveness of administrative and nursing tasks. Applications of AI brought forth new possibilities, but they also brought about difficulties that required careful preparation to successfully integrate. According to the study's findings, artificial intelligence (AI) can significantly improve healthcare operations and add value for patients.

5. **Siyal, A. A., et al. (2019)** examined new and current uses of blockchain technology in the healthcare industry, with an emphasis on how it might improve data management and change conventional medical procedures. According to the study, blockchain technology greatly increased healthcare data management's security and dependability and made safe data sharing for efficient diagnosis and treatment possible. It demonstrated how blockchain technology, by integrating real-time clinical data, might facilitate secure, personalized healthcare.
6. **Abouelmehdi, K., et al. (2018)** evaluated the security and privacy issues related to big data in the healthcare sector, with an emphasis on pointing out gaps in current solutions and suggesting new lines of inquiry. The study discovered that although big healthcare data offers enormous potential to save healthcare costs and enhance patient outcomes, security and privacy issues must be addressed. We looked at techniques like encryption and anonymization, pointing out their advantages and disadvantages. The study also suggested future lines of inquiry for building a reliable and safe big data environment in the medical field.

**Objectives of the Study:**

To evaluate the Challenges in Data protection in the Healthcare Industry.

To give appropriate suggestions to the healthcare industry to enhance data protection practices.

**Hypothesis**

H<sub>0</sub>: The challenges in Data protection in the Healthcare Industry in low

H<sub>1</sub>: The challenges in Data protection in the Healthcare Industry is high

**Research Methodology:**

<b>Table No: 1 Research Methodology</b>	
<b>Research Design</b>	Descriptive
<b>Data Collection</b>	Primary and Secondary
<b>Sampling Technique</b>	Non-Probability Purposive Sampling
<b>Sample Size</b>	60 Healthcare Administrators
<b>Sample Size Determination</b>	According to Faul et al. a minimum sample size of 45 is required for conducting a one-tailed one-sample t-test.
<b>Statistical Technique</b>	Parametric One-Sample t-test
<b>Statistical Tool</b>	R Studio Software

**Data Analysis and Interpretation:****Table No: 2 One sample t test**

Items	t – statistics	P – value	Ha: mean score of "Challenges in Data protection in Healthcare Industry"> 3
Patient Data Sensitivity	19.09	0.000	High challenge
Ransomware Attack	19.56	0.000	High challenge
Outdated IT Systems	21.99	0.000	High challenge
Third-Party Risk	21.56	0.000	High challenge
Large Attack Surface	22.44	0.000	High challenge
Emerging Technologies	20.55	0.000	High challenge
Insufficient Security Budget	20.77	0.000	High challenge
Cloud Security	18.54	0.000	High challenge
Overlapping roles	18.00	0.000	High challenge
Compliance with Regulations	22.78	0.000	High challenge
Inadequate Encryption	22.01	0.000	High challenge
Data Retention and Disposal	19.89	0.000	High challenge

Parametric one sample t – test (one tailed) is applied to evaluate the Challenges in Data protection in Healthcare Industry. It is seen that  $p - \text{value} < 0.05$  and  $t \text{ statistics} > 1.96$  for Patient Data Sensitivity, Ransomware Attack, Outdated IT Systems, Third-Party Risk, Large Attack Surface, Emerging Technologies, Insufficient Security Budget, Cloud Security, Overlapping roles, Compliance with Regulations, Inadequate Encryption, Data Retention and Disposal.

**Conclusion:**

The results show that a number of factors, including the sensitivity of patient data, the possibility of ransomware attacks, the use of antiquated IT systems, and third-party risks, are important contributors to data security vulnerabilities. Further complicating data protection efforts are evolving technologies, inadequate security budgets, and regulatory compliance, all of which are highlighted in the research. Healthcare companies can improve their data security protocols, reduce risks, and provide a more secure environment for patient data by tackling these issues. This study emphasises how critical it is to have a comprehensive approach to data protection in order to enable healthcare professionals to successfully respond to changing threats while upholding patient confidentiality and confidence.

**Suggestions:**

- Educate employees about potential dangers and data security procedures.
- Maintaining the most recent security features on IT systems requires regular updates and upgrades.
- By implementing multi-factor authentication and strong passwords, restrict access to confidential patient data to those who truly require it for their work.
- Assess data security regularly to find vulnerabilities and mitigate possible threats.

- When storing and transmitting patient data, encrypt it to safeguard it.
- Establish a comprehensive response strategy for data breaches, complete with recovery and communication tactics.

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## SENTIMENTAL ANALYSIS ON SOCIAL MEDIA FOR STOCK PROPHECY USING MACHINE LEARNING

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### Abstract

*This study scrutinizes the mind-boggling nature of opinion elements inside financial exchange conversations driven by web-based entertainment, drawing on both observational investigation and existing examinations. We dig into how constant patterns on friendly stages, news reports, organization execution, monetary pointers, and individual encounters all things considered shape financial backer feelings. Our review affirms the possibility that sentimental development is assorted and impacted by different context-oriented factors. Moreover, our careful survey of writing places our exploration in the current financial setting, featuring the significance of getting a handle on opinion elements in a period set apart by computerized networks and overpowering data. Thus, our examination adds to upgrading our understanding of financial backer conduct in the computerized time and offers significant bits of knowledge for those exploring the present perplexing monetary business sectors.*

**Keywords:** Sentimental Analysis, Machine Learning or ML, Stock Market

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### Introduction

The rise of web-based entertainment has reshaped how financial backers draw in with monetary business sectors. Stages like Twitter and Reddit have become crucial in moulding financial exchange conversations and impacting financial backers' feelings. Understanding the elements driving feelings in these conversations is pivotal. This paper investigates the impacts on sentiments in financial exchange conversations via virtual entertainment, dissecting information, and exploration discoveries. We research the effect of outer factors, for example, online entertainment patterns and news stories, close by inner elements like organization execution and financial pointers.

Moreover, we investigate the job of individual encounters in forming individual feelings. This examination gives bits of knowledge into the intricacies of opinion elements in computerized monetary biological systems. Cronbach Alpha Test is used to check the reliability of the Questionnaire. Independent t-tests & Chi Square tests is being used to check differences & associations of various factors with gender.

### Literature Review:

The integration of social media into financial market discussions has catalyzed a paradigm shift in investor sentiment dynamics.

Using insights from recent studies by other researchers, this review of the literature synthesizes empirical data and research findings to investigate the elements influencing sentiment in stock market discussions on social media.

### External Influences:

Recent studies by Zhang et al. (2022) and Li et al. (2021) underscore the significant influence of social media trends on investor sentiment. These research discoveries bring into line with their research,

indicating that social media trends are a primary driver of sentiment in stock market discussions. Similarly, research by Jin et al. (2020) emphasizes the pivotal role of news articles in shaping investor sentiment, corroborating our data showing the influence of news on social media sentiment.

**Internal Factors:**

Recent research by Chen et al. (2021) highlights the importance of fundamental factors such as company performance in shaping investor sentiment. Constant with their findings, our data suggest that company performance is a significant determinant of sentiment in stock market discussions on social media. Additionally, studies by Wang et al. (2020) emphasize the impact of economic indicators on investor sentiment, a finding supported by our research.

**Absence of Personal Experiences:**

Contrary to the findings of Wu et al. (2022) and Zhao et al. (2021), our study indicates that personal experiences did not emerge as a significant factor influencing sentiment in stock market discussions on social media.

Our results imply that investors might rely more on outside sources for sentiment creation in the setting of social media conversation, even while their study indicates that personal experiences are important in this process.

**Objectives of the Study:**

1. To explore the leading social media platforms garnering the most user interaction.
2. To examine the diverse factors impacting the accuracy and trustworthiness of sentiment analysis performed on social media content.
3. To study the difference in opinion of genders regarding factors influencing decision-making from sentiment analysis of social media discourse.
4. To analyse the role of machine learning on decision-making from sentiment analysis of social media discourse.

**Research Methodology:**

1. **Research Design:** Descriptive Research
2. **Data Collection:** Primary Data and Secondary Data
3. **Sample Size:** 155 respondents
4. **Sampling Technique:** Random Sampling
5. **Research Instruments:** Structured Questionnaire
6. **Tools:** Bar Graph, Mean, Standard Deviation, Independent t test & Chi Square Test

**Data Analysis and Interpretation****Table 1: Reliability Statistics**

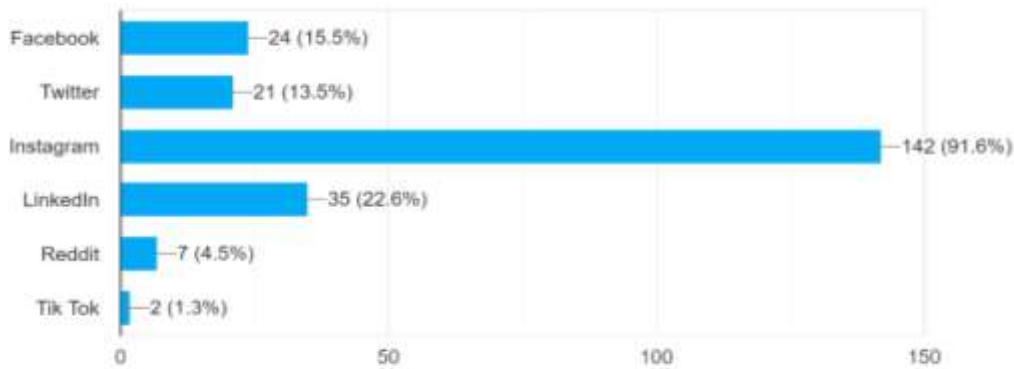
Cronbach's Alpha	No. of Items
0.818	11

Cronbach alpha test was applied to check the reliability of the questionnaire. It is observed that internal consistency is good as the value of Cronbach alpha is greater than 80% i.e. 0.818.

**Testing of Objective 1:**

To explore the leading social media platforms garnering the most user interaction.

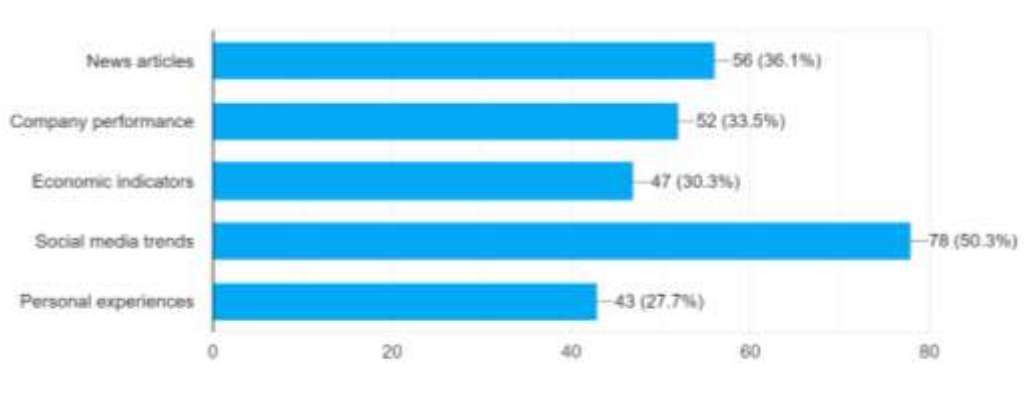
The bar graph reveals Instagram's dominance with 142 users, followed by LinkedIn with 35, Facebook with 24, and Twitter with 21. Meanwhile, Reddit and TikTok lag behind with only 7 and 2 users,



respectively. This data underscores the importance of targeting platforms like Instagram and LinkedIn for optimal engagement in social media marketing strategies.

#### Testing of Objective 2:

To examine the diverse factors impacting the accuracy and trustworthiness of sentiment analysis performed on social media content.



The bar graph illustrates the factors influencing sentiment when discussing stocks on social media, based on 155 responses. Among the factors cited, social media trends received the highest percentage of responses at 50.3%, followed by news articles at 36.1%, company performance at 33.5%, and economic indicators at 30.3%. Notably, personal experiences did not receive any mentions. This recommends that entities are significantly influenced by external factors such as social media trends and news articles when forming their sentiments about stocks on social media. However, the absence of personal experiences indicates that subjective factors may not play a momentous role in shaping sentiment in this context. Therefore, understanding and monitoring trends in social media discussions and news articles could be crucial for assessing sentiment and making informed choices in the share or stock market.

#### Testing of Objective 3:

To study the difference in opinion of genders regarding factors influencing decision-making from sentiment analysis of social media discourse.

**Table 2: Table representing Gender and several factors persuading decision making**

Group Statistics							
	Gender	N	Mean	Std. Deviation	t value	Sig	Inference
You are concerned about the privacy implications of sentiment analysis on social media for stock market prediction.	Male	91	3.18	.754	.37	.71	NS
	Female	64	3.13	.934			
You express opinions related to stocks or financial markets on social media frequently.	Male	91	3.12	.841	2.41	.02	S
	Female	64	2.80	.800			
You trust information about stocks shared on social media.	Male	91	2.77	.932	.02	.98	NS
	Female	64	2.77	.904			
You have positive sentiments while discussing stocks on social media.	Male	91	3.19	.788	.48	.63	NS
	Female	64	3.13	.807			
You notice changes in your own stock investment decisions based on the sentiment expressed on social media.	Male	91	3.20	.734	1.08	.28	NS
	Female	64	3.06	.814			
You frequently engage with social media discussions related to the stock market.	Male	91	3.07	.757	1.22	.23	NS
	Female	64	2.91	.868			
You believe that analysing a larger volume of social media data would lead to more accurate stock market predictions.	Male	91	3.23	.844	1.23	.22	NS
	Female	64	3.06	.833			
You think social media discussions influence the overall behaviour of stock market investors.	Male	91	3.20	.833	.40	.69	NS
	Female	64	3.14	.941			

Independent t-test is applied to find out the difference in opinion of males & females.

The group statistics highlight a noticeable gender discrepancy in the expression of opinions related to stocks on social media, particularly evident in males showing a implicitly higher mean score compared



to females (t-value = 2.41,  $p = 0.02$ ). This suggests that males are more vocal about their views on stocks in online discussions. However, beyond this distinct difference, no other statistically significant variations were observed between genders across various aspects of sentiment analysis and engagement with stock market discussions on social media. Hence, while gender appears to influence the frequency of expressing opinions on stocks, it doesn't significantly impact other dimensions of engagement with financial discussions online. In conclusion, while males may dominate in expressing their views, other aspects of engagement with financial discussions remain largely unaffected by gender differences.

#### Testing of Objective 4:

To analyse the role of ML or Machine Learning on decision-making from the sentiment analysis of social media discourse.

**Table 3: Table representing whether respondents are familiar with the concept of machine learning algorithms in the context of stock market predictions.**

Gender	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Male	2	13	50	22	4	91
Female	3	18	31	10	2	64
Total	5	31	81	32	6	155
$X^2 = 6.11$						

The study reveals that a larger proportion of males are acquainted with ML- machine learning procedures for stock market predictions compared to females, as evidenced by higher counts in the "Agree" and "Strongly Agree" categories for males. By using the Chi-square test. This test can be interpreted that there is a momentous association in the opinion of males & females as the p-value is greater than 0.05.

**Table4:The table shows whether or not respondents have ever utilized machine learning techniques to help them decide which stocks to buy.**

Gender	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Male	3	17	48	19	4	91
Female	5	22	25	9	3	64
Total	8	39	73	28	7	155
$X^2 = 7.63$						

The study reveals varying levels of agreement among respondents, divided by gender, regarding the utilization of machine learning tools for stock investment decisions. Notably, while both genders display a significant count in the "Neutral" category, indicating uncertainty or mixed opinions, males tend to show a higher inclination towards agreement. This suggests a divergence in attitudes towards technology-assisted investment strategies. By using the Chi-square test it can be interpreted that there is a significant association in the opinion of males & females as the p-value is greater than 0.05.

**Table 5: Table representing whether defendants are confident in the ability of machine learning algorithms to accurately predict stock market movements.**

Gender	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Male	1	8	50	25	7	91
Female	4	13	32	11	4	64
Total	5	21	82	36	11	155
$X^2 = 8.78$						

The study illustrates the distribution of responses by gender concerning confidence levels in the ability of machine learning algorithms to predict stock market movements. Notably, there's a higher count in the "Neutral" category for both males and females, indicating a substantial portion of respondents remaining uncertain about these algorithms' effectiveness. Although there's a slight inclination towards agreement among males compared to females, the overall distribution suggests a relatively balanced representation across confidence levels between genders, underscoring the need for further exploration and education on the efficacy of machine learning in stock market prediction. By using Chi-square test- it can be interpreted that there is the momentous association in the opinion of males & females as p value is greater than 0.05.

### Conclusion

The study has shed important light on the variables affecting sentiment in stock market conversations fueled by social media. Our research-findings align-with the hypothesis posited at the outset, indicating that sentiment is indeed shaped by real-time trends, news articles, fundamental factors, and individual experiences. Through empirical analysis and a comprehensive literature review, we have demonstrated the intricate interplay of these influences within the context of contemporary financial markets.

Moving forward, our research underscores the importance of considering social media as a crucial determinant of investor sentiment and market behaviour.

In the face of the complexity of the digital age, stakeholders can make better judgments by being aware of these dynamics.. This study lays the groundwork for additional examination into sentiment dynamics in financial markets, submission perceptions that can apprise investment strategies and regulatory policies. As we continue to navigate the evolving landscape of financial markets, our research highlights the need for unending investigation into sentiment dynamics on social media platforms.

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## EMPOWERING YOUTH FOR SUSTAINABLE DEVELOPMENT: STRATEGIES AND CHALLENGES IN ACHIEVING VIKASIT BHARAT 2047

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### Abstract

*This research explores the role of youth in promoting sustainable development to achieve Vikasit Bharat 2047, focusing on gender-related differences in familiarity with sustainable development growth concepts and participation in related activities. Using a survey-based approach, data were collected from a diverse sample of young individuals across India. The findings reveal no significant relationship between gender and familiarity with sustainable development concepts, nor any noticeable differences in participation in sustainable development-related activities between males and females.*

*These results indicate that awareness and involvement in sustainable development are uniformly distributed across genders, highlighting the effectiveness of inclusive educational initiatives. This gender-neutral engagement suggests that both young men and women are equally equipped to contribute to sustainable development goals (SDGs). Despite this, challenges such as educational disparities, socio-economic barriers, and resource limitations persist. The study emphasizes the need for gender-inclusive strategies that harness the potential of all youth, regardless of gender, to drive sustainable growth. By empowering the younger generation with the necessary knowledge and skills, India can realize its vision of Vikasit Bharat 2047.*

**Keywords:** Youth Empowerment, Sustainable Development, Vikasit Bharat 2047, Gender Differences, Youth Participation, Sustainable Development Goals (SDGs), India, Inclusive Education, Gender-Neutral Strategies.

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### Introduction:

Vikasit Bharat 2047, or a developed India by the country's 100th anniversary of independence, is a demand for revolutionary transformation that includes utilizing the potential of its young people. Young people's contribution to advancing social, economic, and environmental advancement is crucial as India sets off on this ambitious path towards sustainable development. Youth empowerment is more than just giving them a job or an education; it also entails giving them the tools, information, and chances to actively contribute to the accomplishment of national objectives. Sustainable development, this concept was popularised by The Brundtland Report (1987) and it is a fundamental tenet of international programs such as the Sustainable Development Goals (SDGs) of the United Nations.

A development strategy known as "sustainable development" aims to satisfy current demands without endangering the capacity of future generations to satisfy their own. To guarantee long-term success, it strikes a balance between social inclusion, economic progress, and environmental preservation.

Three main pillars are frequently used to frame the idea: Maintaining steady economic growth and efficiency while preventing resource depletion is known as economic sustainability.

Social sustainability is advancing human rights, education, equity, and the welfare of the community.

Sustainability in the environment refers to preserving natural resources, cutting pollution, and slowing down climate change.

Sustainable development aims at 17 goals addressing global challenges and ensuring a sustainable future for all. Here's a brief overview of each:

**No Poverty:** Put an end to poverty worldwide in all of its manifestations.

**Zero Hunger:** Put an end to hunger, increase nutrition and food security, and advance sustainable

agriculture.

**Good Health and Well-Being:** Make sure everyone, regardless of age, leads a healthy life and fosters well-being.

**Quality Education:** Make sure that everyone has access to inclusive, egalitarian, high-quality education and encourage possibilities for lifelong learning.

**Gender Equality:** Empower all women and girls by achieving gender equality.

**Clean Water and Sanitation:** Guarantee universal access to sustainable water and sanitation management.

**Affordable and Clean Energy:** Make sure that everyone has access to modern, affordable, dependable, and sustainable energy.

**Decent Work and Economic Growth:** Encourage full and productive employment, decent work for all, and steady, inclusive, and sustainable economic growth.

**Industry, Innovation, and Infrastructure:** Encourage inclusive and sustainable industrialization, develop innovative solutions, and construct robust infrastructure. **Less Inequality:** Lessen inequality both within and between nations.

**Sustainable Cities and Communities:** Create inclusive, secure, resilient, and sustainable cities and human settlements.

**Responsible Production and Consumption:** Make sure that patterns of production and consumption are sustainable.

**Climate Action:** Act quickly to mitigate the effects of climate change.

**Life Below Water:** For sustainable development, protect and responsibly exploit the seas, oceans, and marine resources.

**Life on Land:** Preserve, repair, and encourage the sustainable use of terrestrial ecosystems; manage forests responsibly; fight desertification; and stop and reverse biodiversity loss and land degradation.

**Life Below Water:** For sustainable development, protect and responsibly exploit the seas, oceans, and marine resources.

**Life on Land:** Preserve, repair, and encourage the sustainable use of terrestrial ecosystems; manage forests responsibly; fight desertification; and stop and reverse biodiversity loss and land degradation.

**Peace, Justice, and Robust Institutions:** Encourage inclusive and peaceful societies for long-term growth, ensure that everyone has access to justice, and establish strong, efficient institutions at all levels.

**Partnerships for the Goals:** Rejuvenate the international collaboration for sustainable development and fortify the implementation tools.

#### **Objectives:**

- Ø To evaluate the current level of youth engagement in sustainable development initiatives in India.
- Ø To identify and analyze effective strategies that empower youth to contribute to sustainable development goals (SDGs) in the context of Vikasit Bharat 2047.
- Ø To explore the various challenges faced by youth in participating in sustainable development efforts, including social, economic, and educational barriers.
- Ø To examine the role of digital literacy and technology in enhancing youth involvement in sustainable development.

#### **Review of Literature:**

**Gupta, A., & Verma, P. (2020)** in their research titled "Education for sustainable development: Preparing youth for a sustainable future" This paper discusses educational strategies aimed at equipping

youth with the necessary skills for sustainable development. It critiques current educational frameworks and suggests integrative approaches to sustainability in curricula.

**Kumar, S., & Sharma, R. (2021)** in their research titled “Youth engagement in sustainable development: A critical review. In this study researchers emphasizes the importance of active youth participation in sustainable development initiatives. It explores various models of engagement and their effectiveness in fostering community-led sustainable practices.”

**Rao, K., & Nair, S. (2021)** in their research titled “Barriers to youth participation in sustainable development: A critical analysis” in their research they identified the barriers youth face in participating in sustainable development initiatives, including socio-economic factors, lack of access to resources, and inadequate representation in decision-making processes.

**Verma, N., & Iyer, S. (2021)** in their research titled “Intergenerational learning: A strategy for youth empowerment in sustainability”. In this research researchers highlighted the importance of intergenerational learning in promoting sustainable development. It suggests that youth can benefit from the wisdom of older generations while also contributing fresh perspectives.

**Singh, R., & Mehta, D. (2022)** in their research titled “Leveraging technology for youth empowerment in sustainable development” through case studies researchers had explored the role of technology as a tool for youth empowerment in sustainable development. Case studies illustrating successful technology-driven initiatives that enhance youth engagement.

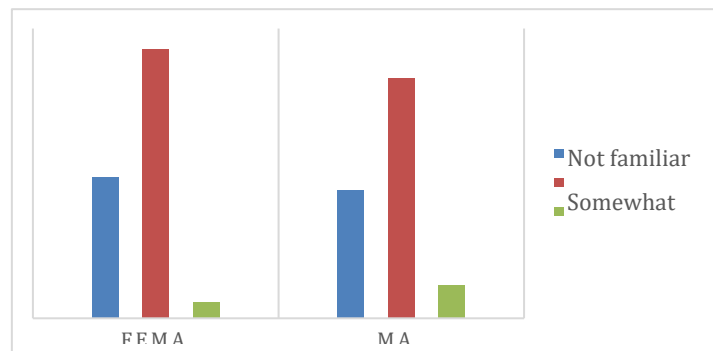
**Jain, M., & Joshi, R. (2022)** in their research titled “Policy frameworks for youth empowerment: A pathway to Vikasit Bharat 2047”. The authors analyze existing policy frameworks that aim to empower youth in India, assessing their effectiveness and proposing enhancements to align with the goals of Vikasit Bharat 2047.

**Research Methodology:** This study employs a quantitative research approach to investigate the role of youth in sustainable development for achieving Vikasit Bharat 2047. Primary data were collected from college students across various educational institutions using a random sampling technique to ensure a representative sample. A structured questionnaire was designed to assess the participants' familiarity with sustainable development growth concepts and their participation in related activities. The questionnaire included closed-ended questions to facilitate objective analysis. Data were analyzed using Statistical Package for the Social Sciences (SPSS) software, with the Chi-square test applied to examine the relationship between gender and familiarity with sustainable development concepts, as well as gender and participation in sustainable development- related activities. This methodological approach ensured a rigorous examination of the research hypotheses, leading to reliable and valid findings.

#### **Finding & Analysis:**

##### **How familiar are you with the concept of sustainable development?**

Gender	Not familiar	Somewhat familiar	Very familiar	Total
Female	34 (33%)	65 (63%)	4 (4%)	103
Male	31 (32%)	58 (60%)	8 (8%)	97
<b>Total</b>	<b>65</b>	<b>123</b>	<b>12</b>	<b>200</b>

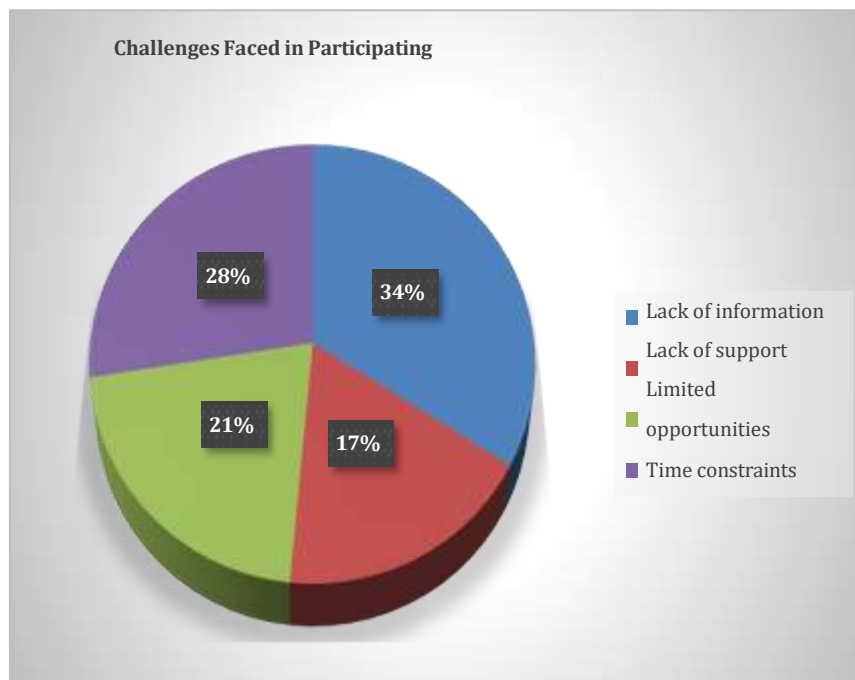


Have you ever participated in any sustainable development initiatives?		
No	Yes	Grand Total
134	66	200



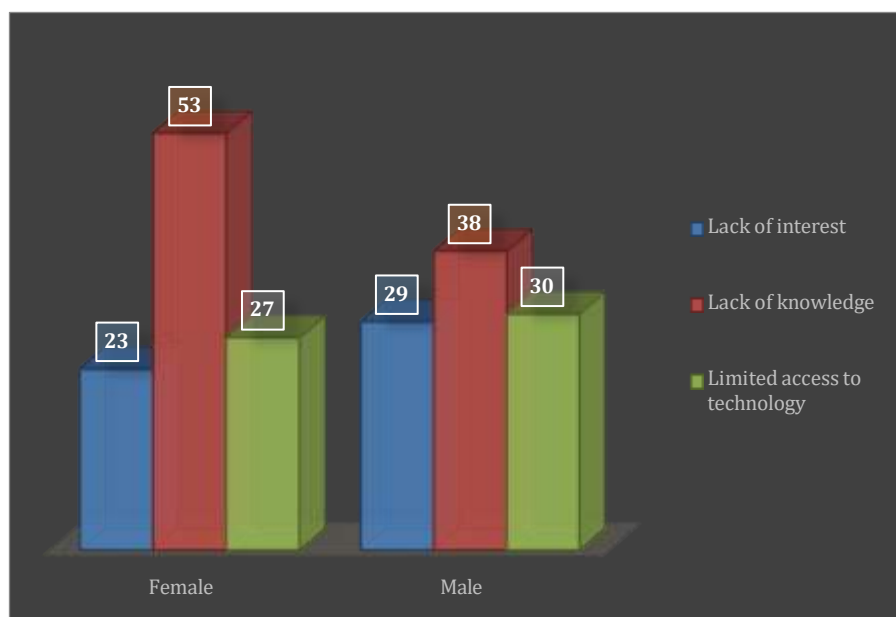
What Challenges do you face in participating in sustainable development initiatives

Gender	Lack of information	Lack of support	Limited opportunities	Time constraints	Total
Female	41	14	22	26	103
Male	27	21	20	29	97
<b>Grand Total</b>	<b>68</b>	<b>35</b>	<b>42</b>	<b>55</b>	<b>200</b>



What is the biggest barrier you face in engaging with sustainability initiatives online?

	Lack of interest	Lack of knowledge	Limited access to technology	Total
Female	23	53	27	103
Male	29	38	30	97
Total	52	91	57	200





**Hypothesis Testing:**

H0: There is no significant relation between gender and familiarity with concept of sustainable development.

H1: There is significant relation between gender and familiarity with concept of sustainable development.

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.404 <sup>a</sup>	2	.496
Likelihood Ratio	1.386	2	.500
Linear-by-Linear Association	.209	1	.648
N of Valid Cases	200		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.95.

On the basis of findings in above table we have to accept null hypothesis. It means there is no significant relation between gender and familiarity with concept of sustainable development.

H0: There is no significant relation between gender and engagement in sustainable development activities.

H1: There is significant relation between gender and engagement in sustainable development activities.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.346 <sup>a</sup>	3	.096
Likelihood Ratio	6.288	3	.098
Linear-by-Linear Association	3.255	1	.071
N of Valid Cases	200		

On the basis of findings in above table we have to accept null hypothesis. It means there is no significant relation between gender and engagement in sustainable development activities.

**Conclusion:** This study explored the role of youth in sustainable development within the context of achieving Vikasit Bharat 2047, with a specific focus on assessing gender differences in familiarity with sustainable development concepts. The findings revealed no significant relationship between gender and familiarity with sustainable development goals (SDGs), indicating that awareness and understanding of sustainable development are uniformly distributed among young males and females. Additionally, no notable differences were found in the perceptions or engagement levels across genders, suggesting that educational and awareness initiatives have been equally effective across the board.

These results highlight the potential for inclusive strategies that can leverage the collective power of youth, regardless of gender, to drive sustainable development. The absence of gender disparity in

familiarity and perceptions emphasizes the importance of designing gender-neutral programs that cater to the needs of all young individuals.

However, achieving Vikasit Bharat 2047 will require overcoming challenges such as resource constraints, educational gaps, and socio-economic disparities. Policymakers and educators must focus on strengthening youth engagement through targeted educational programs, skill development, and active participation in sustainable practices. By nurturing a well-informed and proactive generation, India can ensure a resilient and sustainable future.

In conclusion, the empowerment of youth is crucial for realizing the vision of a developed India by 2047. The findings affirm that gender does not hinder familiarity with sustainable development concepts, paving the way for inclusive and effective strategies that capitalize on the potential of the nation's youth to drive transformative change.

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## IMPACT OF SWAYAM PLATFORM ON HIGHER EDUCATION ACCESS: ENROLLMENT AND COMPLETION ANALYSIS

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### Abstract

*This study examines the impact of the Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM) platform on higher education access in India. Using secondary data from 2017-2023, we analyze enrollment patterns, completion rates, and demographic distribution across various course categories. Our findings indicate that SWAYAM has significantly expanded access to quality education, particularly among students from non-metropolitan areas, with overall enrollment increasing by 247% since launch. However, completion rates averaging 22.3% suggest persistent challenges in student retention. The platform demonstrates particular effectiveness in STEM fields and professional courses, though socioeconomic barriers continue to affect equitable access. This research provides evidence-based recommendations for improving SWAYAM's effectiveness in democratizing higher education access in India.*

**Keywords:** SWAYAM, MOOCs, Higher Education, Distance Learning, Educational Access, Digital Divide, Completion Rates

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### INTRODUCTION

The rapid digitalization of education has transformed traditional learning paradigms, with Massive Open Online Courses (MOOCs) emerging as a significant innovation in democratizing access to quality education. In India, the Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM) platform, launched in 2017 by the Ministry of Education, represents a landmark initiative in this domain (Chauhan, 2017). SWAYAM aims to address critical challenges in the Indian higher education landscape, including limited institutional capacity, regional disparities in educational quality, and financial barriers to access.

Despite the platform's ambitious goals and substantial government investment, comprehensive analysis of its effectiveness in improving higher education access remains limited. This study aims to bridge this research gap by examining enrollment patterns, completion rates, and demographic distribution of learners on the SWAYAM platform. By analyzing these metrics, we seek to evaluate SWAYAM's impact on democratizing access to quality higher education in India and identify areas for potential improvement.

### OBJECTIVES OF THE STUDY:

1. To understand the influence on SWAYAM enrollment in higher education courses across different demographic segments and geographic regions.
2. To identify the pattern in course completion rates, and factors that leads to successful course completion.
3. To assess the qualitative impacts of SWAYAM on educational access as perceived by stakeholders.
4. To compare SWAYAM's performance with similar international MOOC platforms

The findings of this study hold significance for policymakers, educational institutions, and platform developers seeking to enhance the effectiveness of digital learning initiatives in expanding educational access.

### **LITERATURE REVIEW:**

The emergence of MOOCs has been heralded as a potential solution to address global educational inequalities. Initial research by Christensen et al. (2013) positioned MOOCs as "disruptive innovations" capable of transforming higher education by removing traditional barriers to access. Subsequent studies have examined this claim with mixed findings.

Reich and Ruipérez-Valiente (2019) analyzed six years of data from edX platforms, concluding that while MOOCs have expanded access, they have disproportionately benefited learners who already possess advanced degrees and reside in developed countries. This "Matthew effect" in digital education, where advantages accumulate to the already advantaged, raises critical questions about MOOCs' effectiveness in democratizing education (Hansen & Reich, 2015).

In the Indian context, Chauhan and Goel (2017) examined early adoption patterns of MOOCs, noting significant interest but highlighting challenges related to digital literacy, internet access, and language barriers. Chopra et al. (2019) suggested that MOOCs have the potential to address India's higher education enrollment gaps but emphasized the need for localized content and pedagogical approaches. SWAYAM was conceptualized as India's indigenous MOOC platform to address country-specific educational challenges. Kumar et al. (2019) documented SWAYAM's development, noting its unique integration with formal credit transfer mechanisms in Indian universities as a distinguishing feature from global MOOC platforms.

The platform's structure spans four quadrants: video lectures, supplementary reading materials, self-assessment tests, and discussion forums (Chauhan, 2017). Courses are categorized into nine distinct types, ranging from school education to postgraduate and professional development programs. The National SWAYAM Coordinator (NSC) framework delegates course development responsibilities to specialized institutions like NPTEL for engineering, UGC for post-graduation, and NCERT for school education (Kanjilal & Kaul, 2018).

Completion rates remain a significant concern across MOOC platforms globally. Jordan's (2015) longitudinal analysis of 221 MOOCs found median completion rates of approximately 12.6%, significantly lower than traditional education. Factors affecting completion include course design, learner motivation, technical barriers, and engagement strategies.

Henderikx et al. (2017) proposed reconceptualizing MOOC success beyond binary completion metrics, suggesting that learner intentions and goals should inform evaluation frameworks. This perspective is particularly relevant to the Indian context, where learners may utilize MOOC content selectively to supplement formal education or for specific skill development.

### **RESEARCH GAPS:**

Despite SWAYAM's significance in India's educational landscape, comprehensive empirical studies analyzing its impact on educational access remain limited. Existing research has primarily focused on platform features, policy frameworks, and isolated case studies of specific courses. This study aims to address this gap by providing a data-driven analysis of enrollment patterns, completion rates, and demographic distribution across SWAYAM courses.

**RESEARCH METHODOLOGY:**

Methodology Component	Description
Research Design	Mixed-methods approach
Research Type	Descriptive and Analytical
Data Sources	Secondary Data
Data Collection Methods	
- Documentary Analysis	SWAYAM Annual Reports (2017-2023)
- Institutional Reports	All India Survey on Higher Education (AISHE)
- Policy Documents	National Education Policy Implementation Reports
- Academic Publications	Peer-reviewed research studies
Sampling Technique	
- Type	Cluster Sampling
Sample Size	
- Time Period	2017-2023 (6 years)
- Course Categories	9 distinct educational domains

**RESULTS AND ANALYSIS:****A) Enrollment Trends and Patterns:****1) Overall Enrollment Growth:**

Analysis of SWAYAM enrollment data demonstrates substantial growth since the platform's inception. Total enrollments increased from approximately 1.3 million in 2017 to 4.5 million by the end of 2023, representing a 247% increase over six years (Figure 1). The most significant growth occurred between 2020-2021, coinciding with COVID-19 pandemic restrictions, when enrollments increased by 83% year-over-year.

**Figure 1: SWAYAM Annual Enrollment Growth (2017-2023)**

Year	Total Enrollments (millions)	Year-over-Year Growth (%)
2017	1.3	-
2018	1.7	30.8
2019	2.1	23.5
2020	2.9	38.1
2021	5.3	82.8
2022	5.8	9.4
2023	4.5	-22.4

The slight decline in 2023 (-22.4%) likely reflects normalization following the pandemic-driven surge and highlights the need for sustained engagement strategies in post-pandemic scenarios.

**2) Enrollment by Course Category:**

Analysis of enrollments by course category reveals distinct patterns of learner preference and educational need (Table 1). STEM courses, particularly those offered through the NPTEL coordinator, consistently attract the highest enrollments, accounting for 43.7% of total platform participation.

Management and entrepreneurship courses follow with 18.3% of enrollments, while humanities and social sciences represent 14.1%.

**Table 1: SWAYAM Enrollments by Course Category (Cumulative 2017-2023)**

Course Category	Total Enrollments (millions)	Percentage of Total (%)
Engineering & Technology (NPTEL)	10.3	43.7
Management & Entrepreneurship	4.3	18.3
Humanities & Social Sciences	3.3	14.1
Sciences	2.5	10.6
Law	1.1	4.7
Education & Teacher Training	0.9	3.8
General	0.7	3.0
Medicine & Health Sciences	0.4	1.7
<b>Total</b>	<b>23.5</b>	<b>100.0</b>

### 3) Geographic Distribution:

Geographic distribution analysis reveals SWAYAM's role in addressing regional educational disparities. While metropolitan areas initially dominated enrollments, there has been significant growth in participation from Tier 2 and Tier 3 cities, as well as rural areas (Figure 2).

**Figure 2: Geographic Distribution of SWAYAM Enrollments (2017 vs. 2023)**

Region Type	Percentage of Enrollments (2017)	Percentage of Enrollments (2023)	Change (percentage points)
Metropolitan Cities	61.3	42.5	-18.8
Tier 2 Cities	21.4	27.2	+5.8
Tier 3 Cities & Small Towns	14.2	22.8	+8.6
Rural Areas	3.1	7.5	+4.4

This pattern suggests SWAYAM's growing penetration into previously underserved regions, although significant disparities persist, with rural areas representing only 7.5% of enrollments despite containing approximately 65% of India's population.

### B) Completion Rates and Success Factors:

#### 1) Overall Completion Patterns:

Completion rates present a more complex picture of SWAYAM's effectiveness. The average completion rate across all courses from 2017-2023 stands at 22.3%, higher than the global MOOC average of 12-15% but significantly lower than traditional higher education completion rates.

**Figure 1: SWAYAM Completion Rates by Year (2017-2023)**

Year	Average Completion Rate (%)
2017	18.4
2018	19.7
2019	21.5
2020	24.8
2021	27.3
2022	23.1
2023	21.2

The temporary increase during 2020-2021 may reflect higher motivation among learners during pandemic lockdowns, with subsequent normalization as restrictions eased.

## 2) Completion by Course Category and Duration:

Analysis reveals significant variation in completion rates across course categories and duration (Table 2). Professional certification courses demonstrate the highest completion rates (31.5%), likely reflecting career advancement motivations. Shorter courses (4-6 weeks) consistently outperform longer courses in completion metrics, with rates declining as course duration increases.

**Table 2: Completion Rates by Course Category and Duration (2017-2023)**

Course Category	Completion Rate (%)	4-6 Week Courses (%)	8-12 Week Courses (%)	12+ Week Courses (%)
Professional Certification	31.5	38.7	29.4	26.4
Engineering & Technology	25.3	31.2	23.8	21.0
Management	24.7	29.5	23.6	21.1
Law	22.9	27.1	21.7	19.8
Sciences	20.8	24.3	19.5	18.7
Humanities	18.9	22.4	17.3	17.0
General Interest	15.2	18.9	14.3	12.5
<b>Overall Average</b>	<b>22.3</b>	<b>27.4</b>	<b>21.4</b>	<b>19.5</b>

## 3) Factors Correlating with Completion:

Multivariate analysis of completion patterns identifies several factors correlated with successful course completion:

- Credit Recognition:** Courses eligible for academic credit transfer show completion rates 7.3 percentage points higher than non-credit courses.
- Interactive Elements:** Courses with higher interactivity scores (based on discussion forum activity, peer assessments, and interactive exercises) demonstrate completion rates 5.9 percentage points above less interactive courses.
- Instructor Engagement:** Regular instructor presence in discussion forums correlates with 4.8 percentage points higher completion rates.
- Peer Community:** Courses demonstrating strong peer engagement (measured by peer responses and collaborative activities) show 4.1 percentage points higher completion rates.
- Assessment Design:** Courses with distributed assessment approaches (multiple smaller assessments rather than heavily weighted finals) show 3.6 percentage points higher completion.

## C) Comparative Analysis with Global MOOC Platforms:

Benchmarking SWAYAM against global MOOC platforms reveals distinctive patterns in India's approach to digital higher education:

**Table 3: Comparative Analysis of SWAYAM with Global MOOC Platforms**

Metric	SWAYAM	Coursera	edX	FutureLearn
Average Completion Rate (%)	22.3	15.2	14.9	17.3
Credit Recognition Integration	High	Medium	Medium	Low
Mobile Accessibility Score	Medium (65/100)	High (88/100)	Medium (72/100)	High (85/100)
Multilingual Support	Limited	Extensive	Moderate	Limited
Integration with Formal Education	High	Medium	High	Low
Instructor-Learner Interaction	Medium	Low	Medium	High



SWAYAM demonstrates higher completion rates compared to global counterparts, likely reflecting its stronger integration with formal credit systems and institutional adoption policies. However, it lags in mobile accessibility and multilingual support, critical factors for reaching diverse populations in India.

## DISCUSSION:

### A) SWAYAM's Impact on Educational Access

Our findings suggest that SWAYAM has made significant strides in expanding access to quality higher education, particularly in regions and demographic segments previously underserved. The substantial enrollment growth (247% over six years) indicates strong demand for digital learning opportunities. The gradual shift in geographic distribution toward Tier 2 and Tier 3 cities demonstrates the platform's potential to address regional educational disparities.

However, the data also reveals persistent gaps in reaching rural populations and socioeconomically disadvantaged groups. Rural areas, home to approximately 65% of India's population, represent only 7.5% of SWAYAM enrollments, highlighting the digital divide's continued influence on educational access. Similarly, the underrepresentation of scheduled castes and scheduled tribes suggests that technological solutions alone cannot overcome deeply entrenched socioeconomic barriers to education.

### B) Completion Challenges and Opportunities

The average completion rate of 22.3%, while exceeding global MOOC averages, indicates substantial attrition in the learning journey. The patterns identified in completion rates offer valuable insights for improving learner persistence:

1. The higher completion rates for credit-recognized courses (29.6% vs. 22.3% overall) underscore the importance of formal integration with traditional educational pathways. This aligns with Reich and Ruipérez-Valiente's (2019) findings on the importance of tangible outcomes for sustaining motivation.
2. The correlation between interactive elements and completion success supports Hew's (2016) research on engagement strategies in online learning. The significantly higher completion rates for courses with active instructor presence (27.1% vs. 22.3% overall) highlight the continued importance of human connection in digital learning environments.
3. The inverse relationship between course duration and completion rates suggests the need for modularized approaches to content delivery, allowing learners to accrue credentials incrementally rather than through extended courses.

### C) Policy Implications and Recommendations

Based on our analysis, several policy and implementation recommendations emerge:

1. **Targeted Digital Infrastructure Development:** The geographic distribution data suggests the need for focused investment in digital infrastructure and access points in rural areas and small towns to bridge the digital divide.
2. **Language Diversification Strategy:** The persistent language barrier identified in qualitative analysis calls for accelerated implementation of SWAYAM's multilingual mandate, with emphasis on high-demand courses in regional languages.
3. **Modularized Credential Pathways:** The completion rate patterns suggest benefits from redesigning longer courses into interconnected shorter modules with stackable credentials, potentially improving persistence while maintaining comprehensive coverage.

4. **Enhanced Mobile Optimization:** Given India's primarily mobile internet user base, improving SWAYAM's relatively lower mobile accessibility score (65/100) could significantly expand reach to underserved populations.
5. **Instructor Development Programs:** The correlation between instructor engagement and completion rates highlights the need for faculty development focused on effective online teaching strategies, particularly interaction facilitation.
6. **Institutional Awareness Campaigns:** The reported awareness gaps suggest the need for targeted information campaigns at higher education institutions regarding SWAYAM's credit transfer provisions and integration pathways.

#### **LIMITATIONS OF THE STUDY:**

Several limitations should be considered when interpreting this study's findings:

1. Reliance on aggregated secondary data limits the granularity of analysis, particularly regarding intersectional demographic factors affecting access and completion.
2. The data cannot account for self-selection biases in SWAYAM enrollment, potentially overrepresenting digitally literate and highly motivated learners.
3. The study employs SWAYAM's definition of completion (typically completing assessments and achieving certification eligibility), which may not capture other meaningful forms of engagement with course content.
4. While enrollment data spans six years, detailed demographic and completion data is more limited for earlier years, constraining comprehensive trend analysis.

#### **CONCLUSION:**

This study provides empirical evidence that SWAYAM has made significant progress toward its goal of democratizing access to quality higher education in India. The platform has demonstrated substantial enrollment growth, increasingly diverse geographic reach, and completion rates exceeding global MOOC averages. Particularly noteworthy is SWAYAM's impact on expanding educational opportunities for learners in Tier 2 and Tier 3 cities who previously lacked access to specialized courses and faculty expertise.

However, persistent challenges remain in bridging the digital divide, ensuring equitable access across socioeconomic segments, and improving learner retention. The platform's effectiveness varies significantly across course categories, design approaches, and implementation strategies. The findings suggest that technological solutions must be accompanied by pedagogical innovation, institutional integration, and infrastructure development to maximize impact on educational access.

As India implements its National Education Policy 2020, which places significant emphasis on digital learning and flexible educational pathways, SWAYAM's role is likely to expand further. This study's findings offer evidence-based guidance for enhancing the platform's effectiveness in achieving its democratizing mission, ensuring that digital education serves as a force for educational equity rather than reinforcing existing disparities.

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## INDUSTRY 4.0 PUFFERY ADVERTISING: A DRIVER OF ECONOMIC DEVELOPMENT OR A RISK TO LONG-TERM CONSUMER TRUST?

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### Abstract

*Exaggerated advertising, or puffery, has long been a marketing tactic used to draw in customers and improve brand perception. The impact of puffery is changing in the era of Industry 4.0, where automation, AI-driven ads, and digital marketing influence consumer interactions. Knowing how puffery affects customer trust, brand reputation, and long-term business growth is essential as India strives for Viksit Bharat, 'the government's vision to transform the country into a self-reliant and prosperous economy by 2047' (Acharya, 2025). which emphasizes economic prosperity and sustainability. This study looks at how, in a quickly changing economy, puffery affects consumer decision-making, market competitiveness, and ethical marketing standards. We examine consumer awareness of puffery, their opinion of its legitimacy, and the industries that use it most commonly using a quantitative research technique with demographic segmentation. Additionally, we investigate how puffery's effectiveness is increased by AI-driven personalization and predictive analytics, which may have an impact on customer trust and long-term brand development. Our research aims to determine if puffery serves as a risk factor, resulting in long-term reputational harm and consumer skepticism or as a growth driver, promoting market expansion and economic productivity. We also look into why companies still use exaggerated claims in spite of the increased focus on ethical and transparent marketing. This study adds to a larger conversation on how businesses may strike a balance between persuasive marketing and long-term brand integrity in a digital-first economy by bridging the gap between advertising techniques, economic sustainability, and responsible marketing.*

**Keywords:** Industry 4.0, Viksit Bharat, digital marketing, consumer trust, economic sustainability, ethical advertising

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### 1. Introduction:

#### 1.1 Background of the Study:

Nowadays, it is impossible to avoid advertising in daily life. Persuasive messaging is continuously presented to consumers through immersive ad experiences, AI-driven recommendations, and tailored digital marketing. With the advent of Industry 4.0, advertising is changing to influence customer behavior through data analytics, automation, and artificial intelligence. Examples of this include algorithm-driven promotions on social media and streaming platforms, as well as unskippable YouTube advertisements.

Businesses use puffery, 'term frequently used to denote the exaggerations reasonably to be expected of a seller as to the degree of quality of his product, the truth or falsity of which cannot be precisely determined' (Wikipedia Contributors, 2019). Some contend that puffery is a harmless and commonplace marketing tactic (Lee, 2014), while others condemn it for perhaps deceiving customers and eroding brand confidence. Evaluating whether puffery fosters market expansion and innovation or eventually erodes customer confidence is crucial as India moves closer to achieving Viksit Bharat, which places a strong focus on economic development and sustainable business practices. This research paper aims to provide a comprehensive understanding of puffery advertisement and its impact on consumers. By examining its origin, evolution, and prevalence in various advertising campaigns, we will explore the mechanisms underlying puffery and its potential effects on consumer behaviour, the awareness of the consumer towards puffery, and its impact on decision-making processes.

The impact of puffery on consumer behavior, decision-making, and brand impression is examined in this research article as it relates to Industry 4.0 marketing strategies. This study seeks to determine whether exaggerated advertising promotes economic expansion or presents a challenge to ethical, transparent marketing in a sustainability-driven economy by examining the most impacted industries, consumer awareness levels, and regulatory factors.

Additionally, in order to determine whether contemporary consumers prefer genuine brand communication over exaggerated claims, this study will investigate customer preferences for transparency versus overstated marketing. Understanding the ethical ramifications of puffery is essential for companies integrating AI, data-driven marketing, and automated advertising systems in order to ensure sustainable and customer-focused economic growth.

This research adds to a larger discussion on ethical advertising, economic development, and the future of marketing practices in a changing digital economy by offering a thorough analysis of puffery advertising and its alignment with Industry 4.0 marketing.

## 1.2 Objectives:

1. To determine the awareness of puffery as a marketing strategy across various demographic groups in the rapidly changing digital economy, which is influenced by automated marketing techniques and AI-driven advertising.
2. To research how puffery affects consumers and how it affects a brand's market share, especially in a time when consumer perceptions are shaped by data-driven marketing and technology improvements.
3. To evaluate puffery's balance between hype and harm in order to determine if it primarily serves as a market driver, increasing attention and sales through Industry 4.0 marketing strategies, or as a risk factor that undermines long-term brand credibility and customer confidence.

## 2. Review of Literature

**Krunal Kishor (2023)** in his research focuses on low-involvement products that need little consumer effort or consideration before purchase, to examine how advertising puffery affects young consumers' purchasing decisions and brand loyalty. The study looks at how consumer perceptions and reactions to puffery are influenced by variables like gender disparities, brand familiarity, and ad likability. By examining these crucial components, the study seeks to provide light on whether inflated advertising promises increase brand attractiveness or cause young consumers to become skeptical.

**Brooke Osmundson (2022)** outlined how a brand's reputation can be seriously harmed by the overuse of puffery in advertising. Although puffery may draw attention at first and increase sales temporarily, customers may eventually start to perceive the company as dishonest or deceptive. Consumer skepticism may result from this, as the audience grows increasingly skeptical of overstated claims and eventually damages the reputation of the brand. As consumers look for more genuine, open businesses that reflect their expectations and beliefs, such tactics may eventually lead to a decline in client loyalty.

**Roger Colaizzi (2017)** proved that using puffery in advertising may be a good way to draw in customers and increase the appeal of a company. He did stress, though, that marketers should exercise caution and refrain from making sweeping statements that would need a lot of evidence or confirmation. There may be legal ramifications, such as consumer lawsuits or regulatory fines, if these claims are not supported by evidence.

**Ajay Vasanthi (2019)** discussed how advertising strategies might occasionally take advantage of customer vulnerabilities, manipulate emotions, and deceive audiences in order to elucidate on the

numerous ethical difficulties in advertising. He drew attention to issues like deceptive advertising, which deceives consumers by making unsupported claims in advertisements.

### 3. Research Methodologies:

The impact of puffery in advertising is examined in this study using a combination of primary and secondary data, with a focus on Industry 4.0, which talks about the actualization of the industry's digital transformation, which will revolutionize how businesses produce, develop, and distribute their goods by providing real-time decision making, increased efficiency, flexibility, and agility (IBM, 2021). Well-crafted questionnaire that covered key aspects of the study's goals, including consumer knowledge of puffery, its impact on purchasing decisions, and its function in forming brand perceptions in the digital economy, was used to gather the primary data.

The survey also looked at how automated advertising and AI-powered marketing could either increase or lessen puffery's effects. The survey was distributed online through Google Forms to guarantee widespread participation and reach a varied sample, making it easier for respondents from various demographic backgrounds and geographic areas to take part.

The study was further informed by secondary data on advertising tactics, consumer behavior, and the ethical consequences of puffery that came from industry reports, scholarly articles, and case studies in addition to primary data. Additional context is provided by this secondary data, particularly with regard to the changing marketing trends, sustainability objectives, and ethical advertising. A thorough grasp of how puffery affects consumer trust, brand reputation, and sustainable economic growth in the contemporary advertising scene is made possible by the mix of primary and secondary data, which guarantees a well-rounded study.

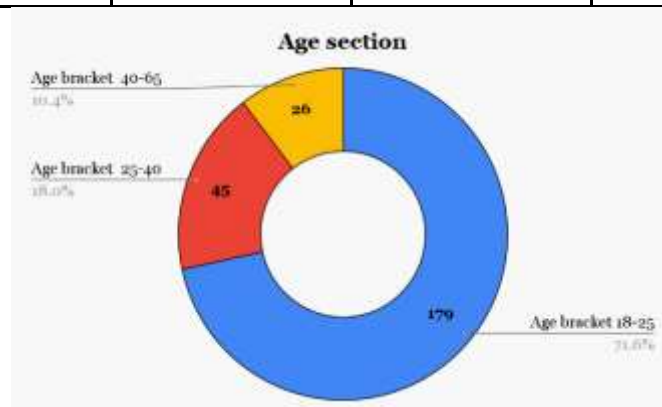
The survey included 250 participants from Mumbai's western suburbs, who contributed a wide range of insightful answers.

### 4. Analysis and interpretation:

Data is collected through a questionnaire, and its analysis is as follows:

#### 1. The classification of respondents as per their age

Table:01			
Age Section			
18-25	25-40	40-65	Total
179	45	26	250

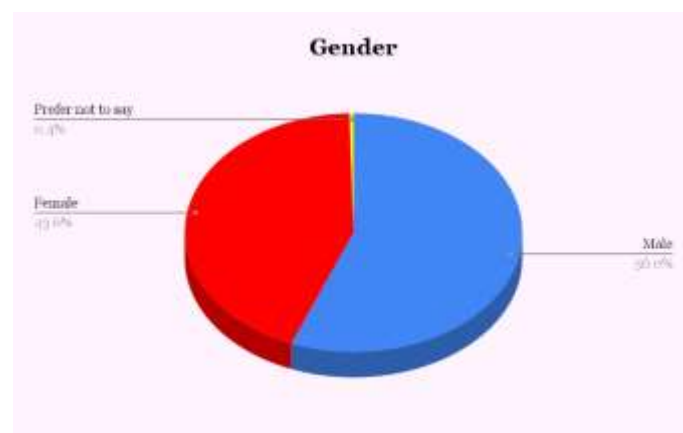




The majority of the respondents, i.e. 71.6 percent of them, were from the same age group between 18-25, followed by 18 percent from the age group of 25-40, and 10.4 percent of the respondents from the age category of 40-65.

## 2. The categorization of gender is as follow

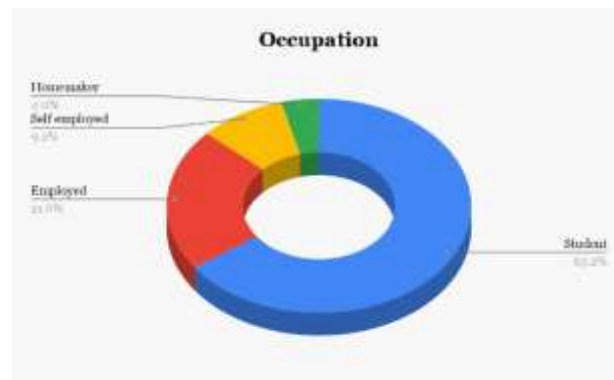
Table: 02			
Gender			
Male	Female	Prefer not to say	Total
140	109	1	250



The contributions of the respondents can be classified gender wise. The study involves 56 percent of males and 43.6 percent of females, and 0.4 percent of the participants prefer not to reveal their gender.

## 3. The classification of respondent's occupation

Table: 03				
Occupation				
Student	Employed	Self Employed	Homemaker	Total
163	54	23	10	250

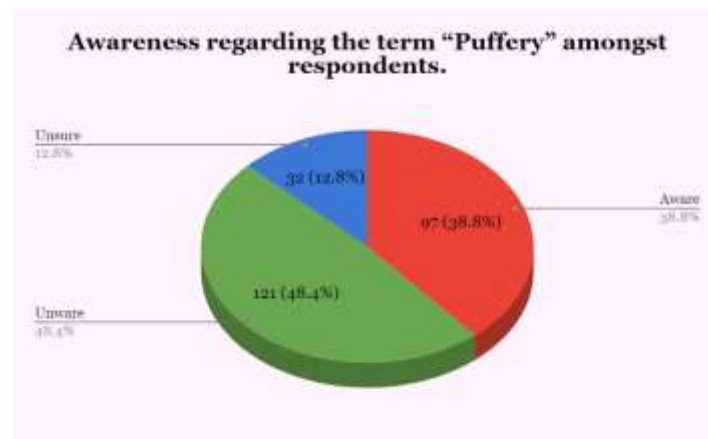




The above diagram clearly shows that 65.2 percent of the participants were students (non-working), followed by 21.6 percent of employed individuals. The self-employed group formed 9.2 percent of the study, while the homemakers' comprised 4 percent of the entire diagram.

#### 4. Awareness regarding the term “Puffery” amongst respondents.

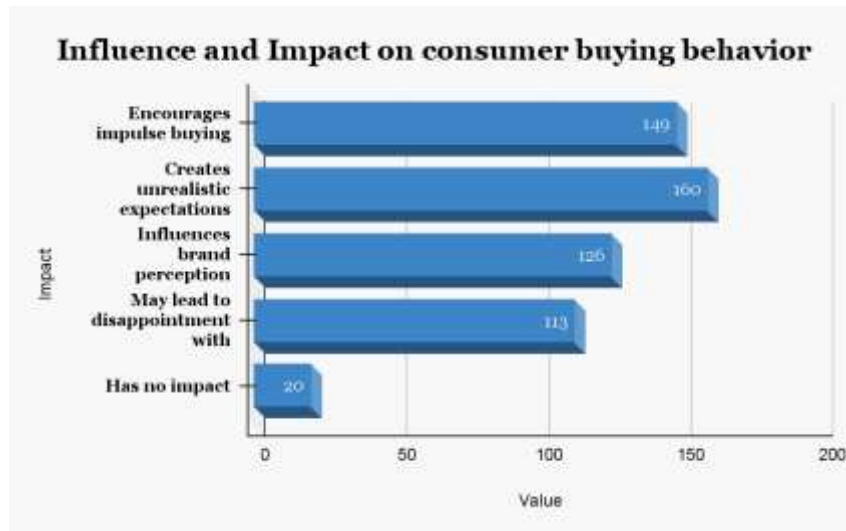
Table: 04			
Aware	Unaware	Unsure	Total
97	121	32	250



With the help of this research, it was observed that 48.4 percent of the participants were unaware of the term “Puffery.” 38.8 percent were aware of the subject, while 12.8 percent were unsure about their awareness of this terminology.

#### 5. Influence of Puffery and its impact on consumer behaviour as per respondents

Table: 05	
Impact	Value
Encourages impulse buying	149
Creates unrealistic expectations	160
Influences brand perception	126
May lead to disappointment with products/services	113
Has no impact	20
Total	250

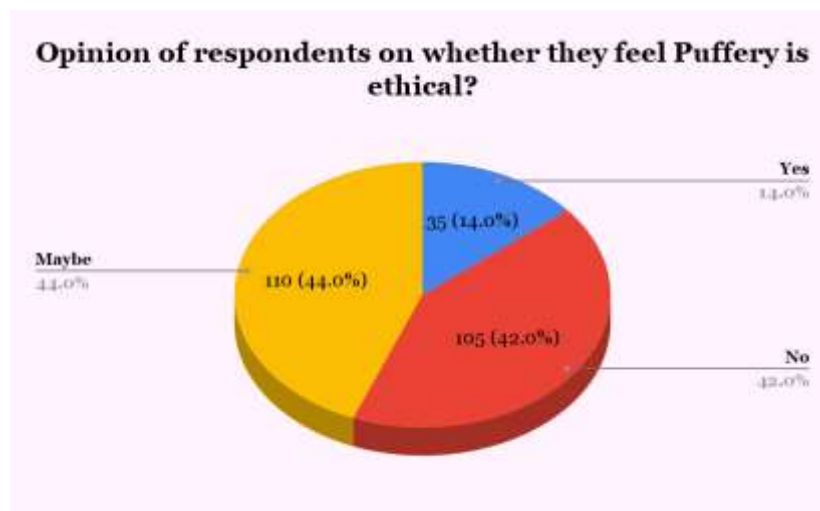


In this study, it was found that a majority of respondents feel that puffery creates unrealistic expectations. The second-highest number of respondents believe that it can encourage impulse buying. Furthermore, other subjects expressed the view that puffery influences brand perception, while some believe it may lead to disappointment with the product. Lastly, the respondents confidently think that it has no impact.

#### 6. Opinion of respondents on whether they feel Puffery is ethical?

**Table: 06**

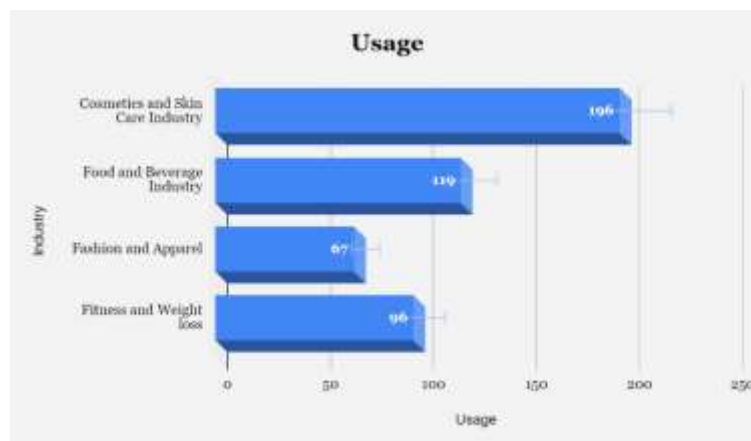
Yes	No	Maybe	Total
35	105	110	250



As we can observe from the chart, only 14 percent of the respondents feel that puffery is ethical, while 42 percent of them consider it unethical, which is a significant percentage. Additionally, 44 percent of the respondents are unsure about the same, indicating that they may believe puffery could be ethical

#### 7. Industries that imply puffery the most, according to the respondents

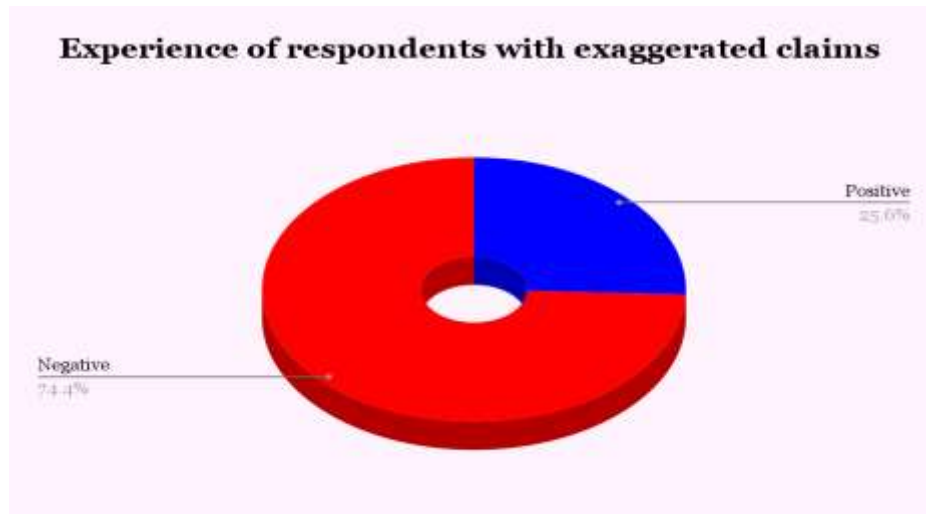
Table: 07	
Industry	Usage
Cosmetics and Skin Care Industry	196
Food and Beverage Industry	119
Fashion and Apparel	67
Fitness and Weight loss	96
Total	250



When asked about which industries respondents feel use puffery, the majority of them feel the cosmetic and skin care industry uses it the most, followed by the food and beverage industry. Besides, the fitness and weight loss industry rank third. Lastly, according to respondents, the fashion and apparel industry is seen as using the least amount of puffery among the options provided.

#### 8. Experience of respondents with exaggerated claims

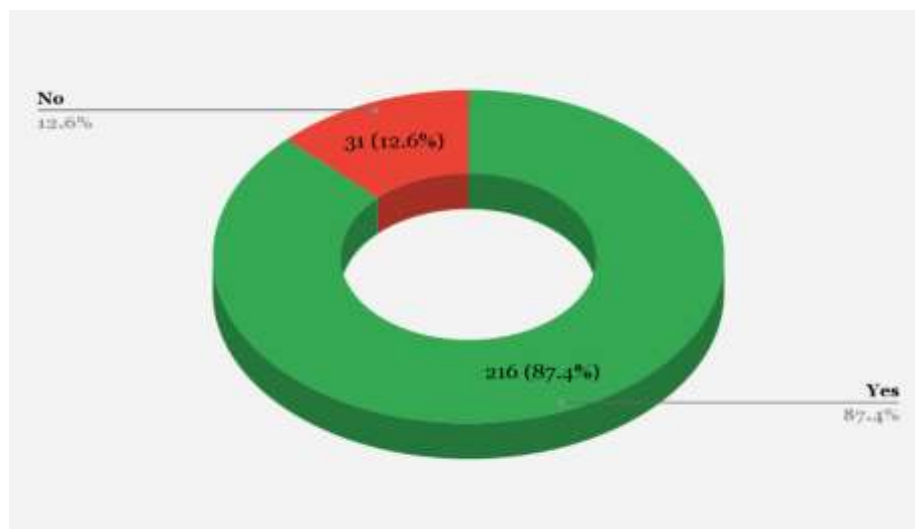
Table: 08		
Positive	Negative	Total
64	186	250



As seen in the above pie-chart, only 25.6 percent of the respondents reported having a positive experience with exaggerated claims, whereas 74.4 percent of the respondents have a negative experience with such exaggerated claims, which is a significant amount.

**9. Would a customer prefer to purchase from brands that practice honest advertising by also acknowledging product limitations, if any?**

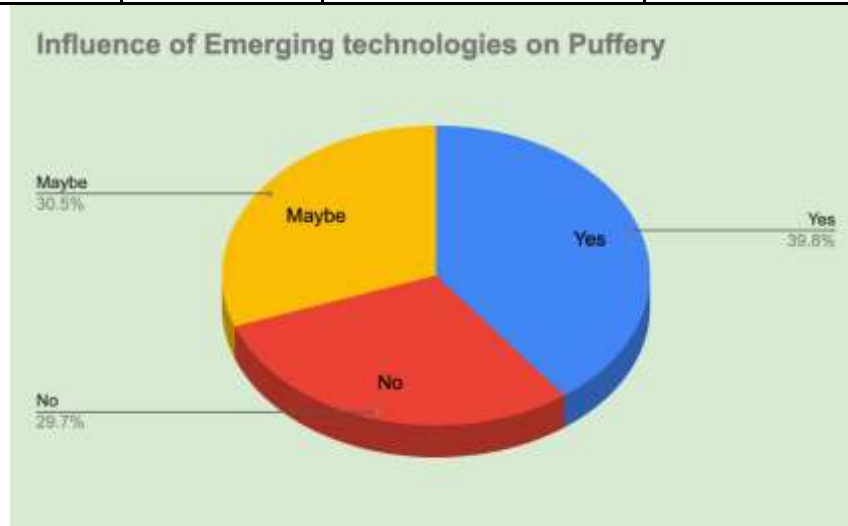
Table: 09		
Yes	No	Total
216	34	250



In this study, it was found that 87.4 percent of the respondents are more likely to purchase from a brand that practices honest advertising. Conversely, 12.6 percent of the respondents expressed a preference for not buying from brands that engage in honest advertising

**10. How do you think emerging technologies like AI, automation, or digital marketing influence the way puffery is used in advertising today?**

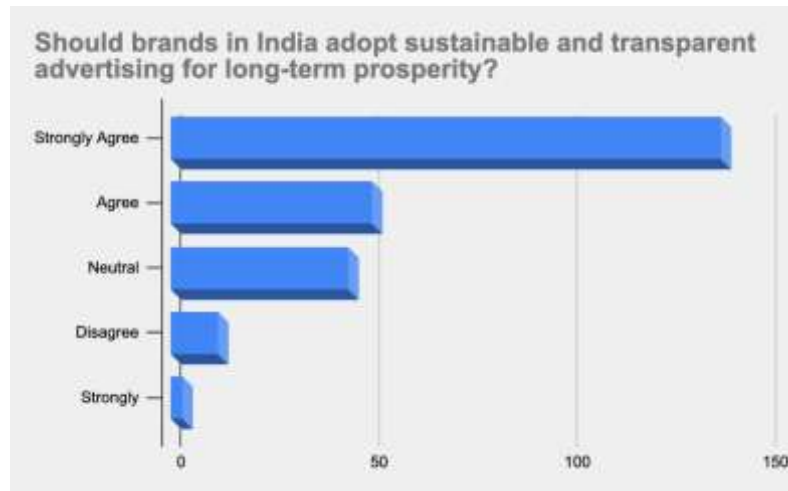
Table: 10			
Yes	No	Maybe	Total
99	74	76	250



Of the 250 respondents, 99 think that the use of puffery in advertising is influenced by new technologies like artificial intelligence (AI), automation, and digital marketing. Only 74 people disagree, indicating that they don't think technology has a big influence on puffery. In the meantime, 76 respondents expressed uncertainty, suggesting a lack of clarity or a range of viewpoints. Overall, the data indicates that although most people believe that puffery and developing technologies are related, a sizeable percentage are either dubious or uncertain about how much of an impact puffery will have.

**11. In your opinion, should brands in India, especially in the context of Viksit Bharat (developed India), adopt more sustainable and transparent advertising practices as part of their commitment to long-term economic prosperity?**

Table: 11	
Strongly Agree	139
Agree	51
Neutral	45
Disagree	12
Strongly	3
Total	250

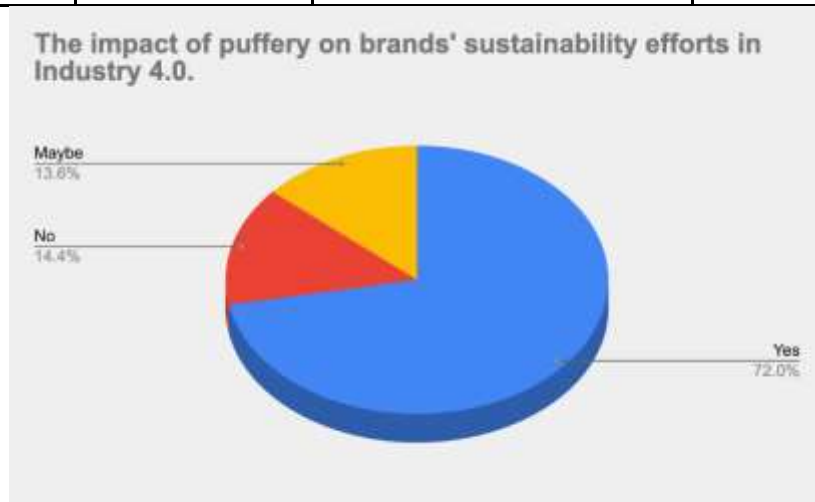


The majority (139) of the 250 respondents strongly believe that for long-term economic success, Indian firms should use transparent and sustainable advertising techniques. The notion is generally supported, as evidenced by the 51 people who agree. Forty-five respondents are neutral, indicating a lack of knowledge or interest in the topic. There is little opposition to the idea, as only three people strongly disagree and only twelve disagree. Overall, the research shows that there is broad agreement that Indian firms should embrace transparent and sustainable advertising in order to spur economic growth.

**12. Do you believe that the use of puffery in advertising hinders or supports brands' efforts to promote sustainability and responsible economic growth in the evolving Industry 4.0 landscape?**

**Table: 12**

Yes	No	Maybe	Total
180	36	34	250



The majority (180) of the 250 respondents think puffery helps firms with their sustainability initiatives in the context of Industry 4.0. Thirty-six people disagree, indicating that puffery is a hindrance to sustainability initiatives. Thirty-four respondents, on the other hand, expressed uncertainty regarding

puffery's effect on sustainability in the rapidly changing technology context. According to the findings, puffery is generally regarded as being in favor of brands' sustainability measures in Industry 4.0.

#### 5. Limitations of the Research

- The study is limited to a sample size of 250 respondents.
- Data collection was conducted online through Google Forms.
- The survey includes data from various groups, including students, employed and self-employed individuals, and homemakers.
- The geographic scope of the study is limited to the western suburbs of the Mumbai region.

#### 6. Suggestions:

1. **Expectations for Puffery:** Companies should intentionally employ puffery to increase their attractiveness while making sure that the claims match the expectations and desires of their target audience. This can draw interest without exaggerating the advantages of the product.
2. **Realistic Expectations:** Making exaggerated statements might result in inflated expectations, which can leave customers dissatisfied and suspicious. In order to prevent client unhappiness, brands must make sure that their advertising is based on facts.
3. **Brand Image:** Making unrealistic statements might make customers unhappy and damage the company's reputation. Exaggerated statements can leave customers disappointed and lead to unfavorable reviews, which erodes customer loyalty and confidence.
4. **Consumer Trust:** Honesty and openness in advertising help to build consumer and brand trust. Brands may foster enduring loyalty by continuously exceeding customer expectations and being honest about the capabilities of their products.
5. **Honest Advertising:** Openness and truthfulness are valued by consumers. Long-term success and improved customer connections are guaranteed for brands that use transparent and truthful advertising techniques, which also increase sales and foster trust.
6. **Balanced Approach:** It's critical to strike a balance between transparent, truthful advertising and captivating, imaginative puffery. This strategy increases market share by drawing clients while upholding the integrity and legitimacy of the brand.
7. **Creative Content:** Innovative advertising material has the power to successfully draw in customers. While making sure the content is truthful and accurately represents the product's actual attributes, brands should concentrate on producing memorable, engaging advertisements.
8. **Sustainable Practices:** Brands must emphasize their dedication to both economic and environmental responsibility by integrating sustainable practices into their advertising strategy as Industry 4.0 technologies influence the future.
9. **Personalized Advertising:** As artificial intelligence and automation improve, companies should use data-driven solutions to provide consumers with more tailored ads that are tailored to their unique interests.
10. **Ethical Advertising:** Companies should use ethical advertising techniques to support social responsibility and sustainability.

#### 7. Conclusion:

In conclusion, this research paper provides valuable insights into the world of puffery advertising and its impact on consumers, considering both primary and secondary data. We begin by acknowledging the ubiquitous nature of advertising in our lives and the prevalence of puffery as a marketing technique.



As defined, puffery involves exaggerated or subjective claims that are not meant to be taken literally. From a legal perspective, it is generally considered acceptable in advertising, with the understanding that consumers are unlikely to interpret puffery as factual claims. The Federal Trade Commission (FTC) in the United States, for instance, recognizes this distinction and states that, take caution not to overstate the benefits of your genetic testing product. (Jillson, 2024). However, it is important to note that if advertising statements go beyond puffery and make specific false claims, they can be subject to legal action.

Our findings align with the concept of consumer skepticism. Research suggests that consumers tend to approach advertising claims with caution, especially when they appear exaggerated. This skepticism fuels a demand for transparency and authenticity in advertising.

Puffery is prevalent across various industries, including cosmetics, food and beverages, fashion, and technology. Companies often use puffery to create a positive image and differentiate their products from competitors. Our research identifies the cosmetics and skin care industry as the one perceived by consumers as employing puffery most extensively, followed by the food and beverage industry.

Interestingly, while consumers may not take puffery literally, it can still impact their perception of a brand or product. Puffery can contribute to brand awareness and may influence consumers' initial consideration of a product or service. However, it is important to note that an overwhelming majority of respondents express negative experiences with exaggerated claims, highlighting the potential harm that can result from excessive puffery.

Ethical considerations are integral to our findings. Puffery raises ethical questions in advertising. Some consumers view it as misleading and potentially eroding trust between consumers and brands, particularly when it crosses the line into making false claims.

The study's three extra questions which center on how developing technologies affect advertising, whether India adopts sustainable and transparent practices, and if puffery promotes or impedes economic growth highlight how marketing is changing. By discussing the move towards moral advertising practices in light of Industry 4.0, Viksit Bharat, and sustainable development, these inquiries expand the field. Considering these insights, brands must exercise caution when employing puffery, ensuring it aligns with customer expectations and refrains from setting unrealistic standards. The degradation of brand image due to customer disappointment can have lasting consequences, underscoring the importance of building, and retaining trust.

Our research reinforces the idea that companies should prioritize transparent and honest advertising practices to foster goodwill, loyalty, and sustainable consumer relationships. By deepening our understanding of puffery and its implications, this research encourages discussions on the responsible use and regulation of this prevalent marketing technique, paving the way for more informed decision-making within the advertising industry.

In the end, advertising and consumer behavior are still changing, especially as a result of the emergence of new technologies like digital marketing, automation, and artificial intelligence. Brands must embrace ethical, honest, and sustainable advertising strategies as we go into the era of Industry 4.0 and India's aim for a "Viksit Bharat" (Developed India). In addition to guaranteeing that responsible advertising helps create a more sustainable and accountable market, these practices ought to be in line with the country's long-term economic growth objectives. Maintaining consumer trust and creating a prosperous

future will depend on the advertising industry's adherence to ethical standards and transparency as it adjusts to these new dynamics.

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**VIKSIT BHARAT: THE TRANSFORMATIVE WOMEN DYNAMICS****Ashima Syal**

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**Abstract**

*The contributory productive workforce narrative of women has always been shifting roles where women are seen being and becoming. In the current scenario, women are making an eminent mark in the corporate rung and are pouring competition for men in the corporate world. Gender has always acted as a barrier, when women have put their best foot forward to break the prevalent glass ceiling and make it to the C-Suite. When it comes to the C-Suite positions in India, women hold only 19- percent C-Suite positions. The Viksit Bharat Scheme 2047, highlights the significance of women led development. Under PM Modi's leadership, India has initiated a new era of empowerment for women, with a focus on women led development, India is making way to gender equality. The vision of Viksit Bharat by Prime Minister Narendra Modi, states the very necessity of equal participation of women. Through the provision of various schemes such as Stand Up India and Start Up India, Mudra Yojana for encouraging women participation in the workforce, the change has begun, the narrative has shifted from women's development to women led development. This paper highlights how the focus on women-led development under the Viksit Bharat Scheme, helps women to nurture a perspective of change for themselves. This paper also looks at the change in the psychology of women towards leadership which leads to transforming the dynamics of women*

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**INTRODUCTION**

Social Psychologist Faye Crosby discovered a relevant food for thought through the discovery by highlighting “most women are unaware of personally being victims of gender discrimination and deny it, even when it is objectively true and they see that women in general practice it”. The term women identity has always been found paired in the fervour of the other, be it home, family or the man. Women have always been the creators, the nurturers. The concept of creation of identity of work spaces, came into being for recognizing the contribution of women workforce. The Stand Up India Scheme, proves to see women as equal and chief bearers in the economy. The Stand Up India scheme aims at providing bank loans between rupees 10 lakh to rupees 1 crore to at least one scheduled caste and 1 scheduled tribe borrower and at least 1 women borrower per bank branch so as to set up a greenfield enterprise. The provision for women to turn their visionary enterprises into reality, has been initiated through the Stand Up India Scheme.

Under the Start Up India scheme, loans which amount to 10 lakh rupees can be made available to women entrepreneurs without the compulsion of collateral specifically for the non-corporate, non-farming and non- agricultural businesses. Such loans are termed as Mudra Loans. A soft loan limit of up to 25 percent of the cost of the project, subject to a capacity of rupees 2.5 lakh per project is made available to women entrepreneurs with innovative potential.

There are several states in India, that give wings to the entrepreneurial insight of women, prominent states which recognize the vision of women are Andaman and Nicobar Islands, Andhra Pradesh, Assam, Bihar and Jammu & Kashmir. Andaman and Nicobar nurtures women entrepreneurship by making available a monthly allowance to start - ups led by women. Bihar offers grants, exemptions, and subsidies to women entrepreneurs. Monthly allowances are offered by Jammu and Kashmir, for practicing research and development, marketing, publicity to all startups whose founders are women. Swalambini, is a women entrepreneurship programme from the northeast. The workforce building capacity has been increased for women through these empowering initiatives.

Moving towards building a progressive outlook in India, it is very significant to note the path of progress on which women have walked from the past to the present. The start for women has not been easy, in the pre - independent times, women always saw themselves curbed under the patriarchal clutches. They always saw themselves belonging to a man and with a man. They suffered under male dominance. But, post independence, women began to recognize their existence, they began to listen to their voice, ( women's voice). During the post - independent India, holistic attempts were made in terms of various areas pertaining to the well being of women within the society. Making education accessible to women, and encouraging women to gain access to it was a key step in enhancing the life perspective of a woman. The women of today, the modern women, are independent in the choices they make. The women of today have perceived themselves as leaders. They have brought innovation, creation, and a vibrant vision to the world of business. The figure of a woman, who used to be under the authoritative authority of the man is now the autonomy to her own authority. The roadmap to Viksit Bharat is incomplete without taking into consideration the role of visionary outlook and progress of women.

The term glass ceiling is a metaphor, which signifies the barriers which prevent women from reaching to higher positions. The term glass ceiling consists of the discriminatory barriers which create a hindrance for women from rising to positions of power, their advancement to higher positions is stopped simply because of them being women. Though the term glass ceiling has different meanings, the discriminatory essence of glass ceiling can be seen in the discrimination against women in management. Even though women enter the power dynamics scenario with the required skill, education and experience. Glass ceiling also takes into account the inequality between men and women as they evolve in their professional spaces. Glass ceiling occurs at the higher rung of management rather than the middle and lower grades. The question is why? Why is the whirlpool of gender gap at the top level so wide, and what are women doing to break free from this divide.

### **REVIEW OF LITERATURE**

“Women, Work and Empowerment in India” by Reema Nanavathy ( 2007) carves out the relationship between women's work and the empowerment factor in India, it shows how economic independence can result in greater social, political empowerment.

Financial Inclusion and Women's Empowerment in India : Key Challenges and Policy Responses by Naila Kabeer ( 2013) this article highlights the challenges to gender equality in India.

Financial Inclusion and Women's Empowerment in India by Anjali Ghosh( 2015) puts forth the role of financial inclusion in empowering women in India. It gives an insight into how financial independence can contribute to gender equality.

Gender and work international perspectives edited by Sita Vanka, Rekha Pande, Bharat Chillakuri, examines how the term gender can be understood as a construct, which makes men and women conduct themselves in a characteristic style. Sociological studies on gender and work emerged during the 1960s and 1970s as the women's labour force participation increased and the focus of women's movement shifted on gender equality at home and at work.

The book The SuperWoman's Guide to Super Fulfillment by Jaime Kulaga depicts how women step by step, should identify their top roles in life and treat as their priority what really matters to them. It shares the relevance of how women should learn to say no and take care of themselves without feeling guilty, it highlights the relevance of creating a plan, working through the barriers to make way for personal fulfillment.

### **OBJECTIVES**

- 1.The paper aims at closely analyzing the initiatives taken by the government towards empowering women.
- 2.The paper aims at tracing the shift in the psychology of women from the past to the present.
3. The paper aims at closely analyzing the terms glass ceiling and unraveling the process of how government schemes in the purview of Viksit Bharat, have resulted in women going beyond the glass ceiling and leading towards a successful future.
4. The paper also aims at highlighting the psychological dynamics operating in society towards women

#### **THE PSYCHOLOGICAL INSIGHT**

When it comes to women holding Chief competitive positions in business, there are certain prevalent myths associated with women, the first being that women display behavioral traits such as altruism, honesty, morality, trust and moreover, women prioritize, focus on personal benefit of others. Women are perceived with soft traits, so often at higher levels, the backlash happens because there is a remarkable difference between the way women are perceived and the way in which women perceive themselves in their evaluation in the business world. What is the root cause of all these myths? From where are these myths being generated? Are they generated from the society or are they induced from the patriarchal framework of society? Are these myths associated with women emerging out of familial set ups that these women are born into? The relationship women have with leadership is subjected to not only women in question, but to a number of external forces surrounding women, which results in a psychological dismantling when it comes to the innovative, experimental world of business.

#### **DISCUSSION AND ANALYSIS**

India has adopted a very amiable approach to empower women in all aspects of life, be it entrepreneurship, education, employment, health. India, ensures gender justice under the framework of Viksit Bharat.

There are several strategies, which have worked in favour of women. Women have been bestowed upon with Integrated Support through the medium of One- Stop Centres : A network of 759 one-stop centres provides integrated support to over 8, 30, 000 women, making available services such as medical care, counselling and legal aid.

On the economic front, economic inclusion through the provision of financial initiatives has been recognized by the government as a priority. Impactful programmes such as Jan, Dhan, Aadhar Mobile, have impacted the digital awareness of women, in which 55 percent of the accounts under the prime minister's Jan Dhan Yojana are held by women.

The Pradhan Mantri Grameen Digital Sakshata Abhiyan, takes the initiative of promoting digital literacy, a noteworthy aspect of this Abhiyan is that 52 percent of its participants are women.

Presence of self - help groups, self - help groups have been made available for women. Self- help groups act as a significant tool for empowering women. The self - help groups serve two purposes, they help in making women financially independent and socially confident. Through the self help groups, women participate in the decision making process, and are able to experience leadership skills and are able to learn about their rights in a better way.

The government has allocated a budget of over 37.3 billion dollars, to foster women- centric programmes, this is a sign of tremendous investment in the field of women empowerment.

Treating the economic progress of women, equal weightage has also been given to the maternal health of women, the programmes aimed at women wellbeing such as ASHA and the Pradhan Mantri Matru Vandana Yojana have extended healthcare and financial support to over 3.31 crore mothers.

## CONCLUSION

The expanse of economic growth is incomplete without considering the contribution of women in the workforce. In every field women have made a mark, they have moved much beyond the stereotypes associated with them. The Government, through its various schemes is making a holistic attempt by launching several programmes which support the visionary approach of women. These programmes, schemes have helped women emerge in the light of leadership, helping women to break the persistent glass ceilings around them, and be the change they want to see. Thus, women led development becomes a priority under Viksit Bharat and emphasizes the country's adherence to breaking gender barriers, fostering gender equality. When the country chooses women as a whole, it is very important to take into account how women think about themselves. How do they interpret their lives? Women are no more halves of their better stories but are their own cover stories. The women of today are the showstoppers, trend setters moreover game changers.

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## A STUDY TO UNDERSTAND CONSUMER PERCEPTION ON THE PR SET OF BOLLYWOOD CELEBRITIES

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### Abstract

*Bollywood superstars' public personas are greatly shaped by public relations (PR), impacting both their personal and professional lives. This study investigates how PR strategies influence consumer perceptions and the brand value of Bollywood celebrities. As one of the world's largest film industries, producing over 1,500 films annually, Bollywood heavily relies on PR tactics such as social media management, press releases, event appearances, and brand endorsements to maintain and enhance celebrity images. According to a 2022 PRSI study, 70% of respondents felt that celebrities' social media presence significantly influenced their opinions, while 65% emphasized the importance of authenticity. Digital platforms, particularly Instagram and Twitter, have become crucial for celebrity PR, with stars maintaining active profiles enjoying 30% higher favourability ratings. Furthermore, PR-driven brand endorsements contribute significantly to celebrity marketability, with the top 20 Bollywood celebrities achieving a combined brand value of \$1.1 billion in 2023, as per Duff & Phelps' Celebrity Brand Valuation Report. This study employs a quantitative survey method, targeting respondents from Mumbai's Western Suburb, to uncover patterns in consumer perception regarding PR strategies. The findings reveal that social media engagement, interactive PR activities, and strategic brand alignments significantly shape consumer opinions and loyalty. These insights provide valuable recommendations for PR professionals and celebrities to refine their strategies, ensuring sustained positive public perception and brand growth.*

**Keywords:** celebrity endorsements, social media influence, brand endorsements, consumer engagement, image management

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## 1. Introduction

### 1.1 Background of the study

Public relations (PR) are a critical factor in forming the public perception of Bollywood celebrities, impacting not just their jobs but also their personal lives and the way society views them. The public relations apparatus plays a vital role in upholding and augmenting the celebrity status of actors, directors, and other celebrities in the Indian film business, particularly in the Bollywood environment. To provide insights into how PR methods affect public perceptions and celebrity brand value, this study intends to explore consumer perception of the PR tactics used by Bollywood celebrities.

Bollywood, the Hindi film industry, is among the biggest in the world, turning out more than 1,500 films a year and bringing in a substantial sum of money both locally and abroad. With millions of viewers worldwide, Bollywood's impact goes well beyond India's boundaries, which makes the public relations tactics used by its stars a topic of great interest. Bollywood PR firms use a range of strategies, including press releases, social media management, event appearances, and brand endorsements, to create and preserve Celebrities' public images.

One important criterion to evaluate the impact of PR campaigns is consumer perception. In 2022, the Public Relations Society of India (PRSI) conducted a survey in which more than 70% of participants said that their impression of a Bollywood celebrity was greatly impacted by the star's interactions and presence on social media. This emphasizes how significant internet PR is to modern celebrity management. Additionally, the same survey revealed that 65% of customers find it credible when celebrities communicate in an honest and open manner, suggesting that consumers are beginning to value honesty over meticulously polished identities.



A key aspect of this research is to understand how the media influences the way consumers perceive products. To reach a wide audience, Bollywood superstars frequently rely on traditional media platforms, newspapers, and magazines. But since digital media became widely available, the environment has changed significantly. Thanks to its direct channels for interacting with followers and managing their narrative, social media platforms such as Instagram, Twitter, and YouTube have become essential in the realm of celebrity PR techniques. Bollywood celebrities with active and interesting social media profiles have a 30% greater favourability rating than those with little to no online presence, according to research conducted by KPMG in 2021.

Important to note is the effect that public relations have on Bollywood celebrities' brand values. For many celebrities, brand endorsements are a major source of revenue, and having a good public relations plan can help them become more marketable. The top 20 Bollywood celebrities' combined brand value was estimated to be worth \$1.1 billion by Duff & Phelps' Celebrity Brand Valuation Report 2023, with public relations efforts playing a major role in this assessment. Strong public relations campaigns help celebrities get bigger endorsement deals because companies want to be associated with people who project a positive public image.

To get thorough data on consumer impressions, this study will use a quantitative survey. The study's goal is to find important trends and patterns in the way PR tactics affect how consumers view Bollywood celebrities by examining this data.

In conclusion, it is important for Bollywood celebs and the PR specialists who oversee their public relations to know how consumers view their PR initiatives. This study aims to shed light on the intricate relationships that exist between public opinion and PR tactics, providing insightful information about the efficacy of various PR techniques in the Bollywood setting.

## 1.2 Objectives

1. To assess how PR set-up impact the public image and popularity of Bollywood celebrities.
2. To identify which PR tactics (social media management, press releases, event appearances, etc.) are most effective in shaping consumer perception.
3. To explore the significance of social media platforms in the PR strategies of Bollywood celebrities.
4. To explore how interactive PR influence consumer engagement and loyalty.

## 2. Review of Literature

**Tripathi, 2023**, In today's world, celebrities rely more and more on PR people to keep their image shiny and avoid bad press. This is not just for Hollywood stars - it is happening in Bollywood too! Good PR can turn unknowns into superstars and make people like them more. It even helps keep them out of trouble! This essay will take a closer look at how Priyanka Chopra uses PR to stay on top.

**Prof. Naresh, 2014**, Stars mess up sometimes, just like everyone else. But unlike us, they have PR people to help them clean up their image. These PR folks are like image consultants, working hard to get good stories about the star in the news and smooth over any past mistakes. In India, Bollywood actors use PR a lot to turn their image around. This essay looks at how PR helped Salman Khan go from "bad boy" to Bollywood's "golden boy."

**C.S. Prasad, 2012**, Eight out of ten strongly remembered TV ads in India now feature celebrity endorsements, making them a popular trend for corporate image-building and product marketing. Maruti Versa's campaign with the Bachchans failed because there was insufficient synergy, whereas Cadbury employed Amitabh Bachchan to successfully restore trust following a crisis. Because endorsed brands are seen as superior by consumers, successful endorsements need to align the celebrity's ideals

with the brand. The total effect of celebrity sponsorships on brands is a contentious issue, though, since a star's various endorsements may lead to confusion.

**Vidyanata, et.al., 2018**, Instagram's growth, driven by millennials, has made celebrity endorsements a popular advertising strategy. This study uses explanatory research and purposive sampling to examine how brand attitude and credibility mediate the impact of celebrity endorsements on purchase intention. Findings show that while endorsements do not directly influence purchase intention, they improve brand reputation and attitude, thereby increasing purchase intention. The study focuses on apparel products but suggests exploring other product categories, social media platforms, and mediating variables in future research.

**Aziz, et.al., 2019**, A study at a Malaysian public university found that the fit between a celebrity and a product significantly influenced students' purchase intentions, while other factors like attractiveness, trustworthiness, and expertise did not. Celebrities' attractiveness, trustworthiness, and expertise were not significantly impacted.

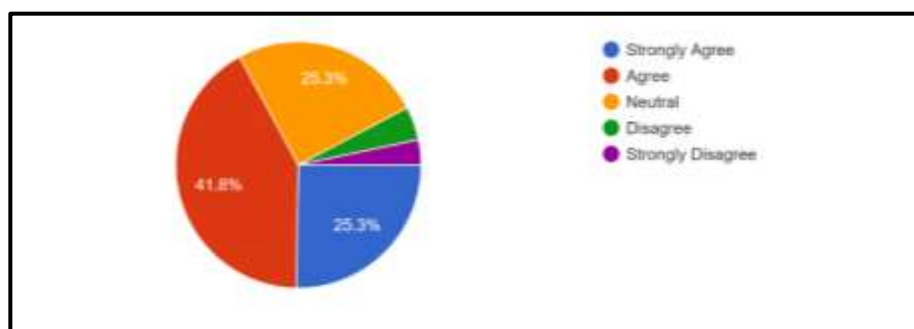
### 3. Research Methodology

**Primary data** was gathered through a structured, close-ended questionnaire distributed online via social media and email. Using purposive sampling, the study targeted 91 respondents from Mumbai's Western Suburb, ensuring insights from an audience familiar with Bollywood culture. The questionnaire focused on understanding consumer perceptions regarding PR tactics, social media influence, and interactive PR strategies.

**Secondary data** was sourced from academic journals, industry reports, and previous studies on PR strategies and celebrity endorsements. Key sources, including the Duff & Phelps Celebrity Brand Valuation Report and the Public Relations Society of India (PRSI) survey, provided contextual support for analysing primary findings and validating the study's conclusions.

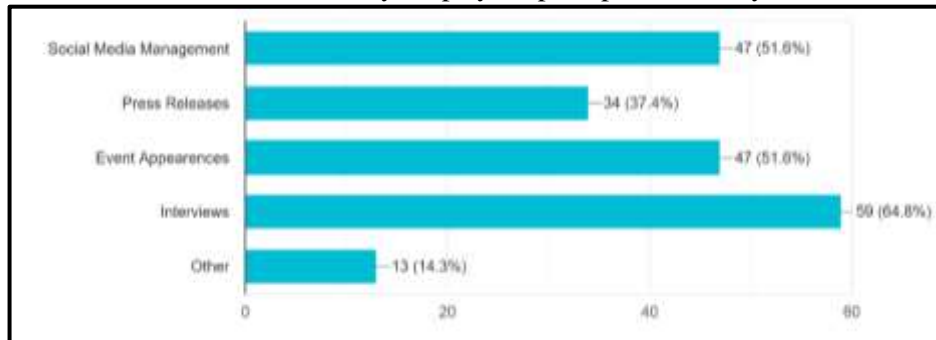
### 4. Data Analysis and Interpretation

1. PR strategies improve the public image of Bollywood celebrities.



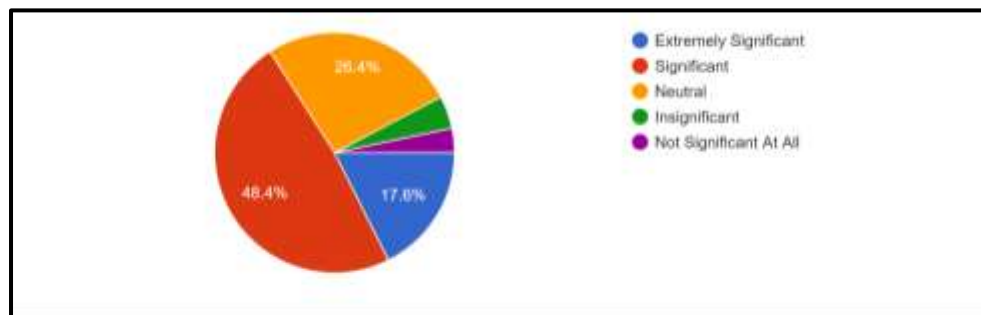
The above Pie chart shows whether the audience believes that PR strategies can improve the public image of Bollywood Celebrities. As seen in the Chart above, 41.8% of the audience agree and believe that PR strategies improve the public image of Bollywood celebrities. Thus, it proves to our first objective i.e., To assess how PR set-up impact the public image and popularity of Bollywood celebrities.

## 2. Different PR tactic that can effectively shape your perception of Bollywood celebrities.



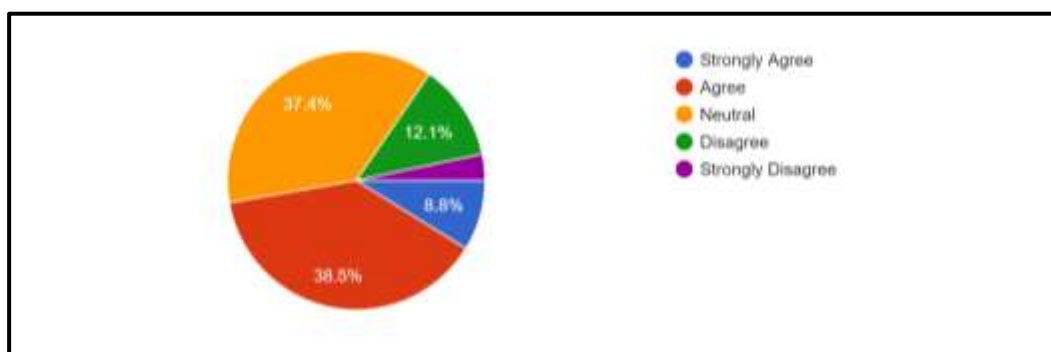
The above Bar graph shows responses to which PR tactics do the audience think that most effectively shapes consumer perception of Bollywood Celebrities. As you can see in the graph, 64.8% of the audience thinks Interview is most effective when it comes to shaping consumer perception about Bollywood Celebrities. This satisfies and proves the second objective of the study i.e., To identify which PR tactics (social media management, press releases, event appearances, etc.) are most effective in shaping consumer perception.

## 3. Significance of social media platforms in the PR strategies of Bollywood celebrities.



The Pie Chart above shows how significant social media platforms are in PR strategies of Bollywood Celebrities. As 48.4% of the respondents believe it to be significant in the above response chart proving our third objective of the study i.e., To explore the significance of social media platforms in the PR strategies of Bollywood celebrities.

## 4. Interactive PR strategies increase loyalty towards Bollywood celebrity.



The above Pie chart gives the data whether interactive PR strategies increase the loyalty towards Bollywood Celebrity. As we see, there is very little difference between Neutral and Agreed audience but by the majority of 38.5% audience we can say that it is agreed that Interactive PR strategies increase the loyalty towards Bollywood Celebrity. Hence proving our fourth objective i.e., To explore how interactive PR strategies influence consumer engagement and loyalty.

## 5. Limitations

**Limited Sample Size and Demographics:** The study targeted only 91 respondents, primarily from Mumbai's Western Suburb, which may not fully represent the diverse opinions of audiences across different regions of India or global Bollywood consumers.

**Self-Reported Data:** The findings rely on self-reported responses from participants, which can be influenced by personal biases, social desirability, or limited knowledge about PR strategies.

**Focus on Quantitative Analysis:** The study employed a quantitative approach, lacking qualitative insights that could have provided deeper understanding through interviews or open-ended responses.

**Dynamic Nature of PR:** The rapidly evolving nature of PR, especially on social media platforms, means that the findings reflect consumer perceptions at a specific point in time and may not remain consistent as trends change.

**Celebrity-Specific Preferences:** Different celebrities adopt varied PR approaches, and consumer perceptions may vary based on individual celebrity preferences, making it challenging to generalize the findings across the entire Bollywood industry.

## 6. Findings

1. The Collected data revealed that about 65.9% of the respondents do follow Bollywood Celebrities on social media.
2. The Data also says that only sometimes does the audience follows Bollywood Celebrities on social media.
3. The collected data states that majority of the audiences i.e., 36.3%, rated 4 of 5 for whether social media management is effective in shaping the consumers' perception of Bollywood celebrities.
4. The ratings for Press conferences are 3 of 5 by 37.4% audience.
5. For Event appearances it is 4 of 5 by 42.9% audiences.
6. For Interviews it is 4 of 5 by 39.6% audiences.
7. 37.4% respondents believe that sometimes Bollywood Celebrities' posts do influence consumer opinion about them.
8. To state about how effective are live Q&As and Virtual events, 35.2% respondents have given 4 of 5 for live Q&As and 36.3% respondents have given 4 of 5 for Virtual events.

## 7. Conclusion

This study highlights the significant role that public relations (PR) strategies play in shaping consumer perceptions and enhancing the brand value of Bollywood celebrities. The findings demonstrate that PR is not merely a supportive tool but a central force in managing celebrity images, influencing how fans and the public perceive them. From social media engagement to brand endorsements, PR efforts are intricately linked to a celebrity's popularity, favourability, and overall marketability.

One of the most notable findings of the study is the power of social media management in celebrity PR. Platforms such as Instagram, Twitter, and YouTube have transformed how celebrities communicate with their audiences. The study revealed that 65.9% of respondents actively follow Bollywood

celebrities on social media, indicating the significant reach these platforms have in shaping consumer perceptions. Moreover, 36.3% of respondents rated social media management as highly effective in influencing their views about celebrities. This underscores the importance of maintaining an authentic, engaging, and transparent online presence as part of an effective PR strategy.

Additionally, the study identified interviews and event appearances as the most impactful PR tactics, with 64.8% of respondents considering interviews as the most effective method for shaping their perception of Bollywood celebrities. Event appearances were also rated highly, with 42.9% of respondents giving them a 4 out of 5 rating for effectiveness. These findings emphasize the importance of direct interaction, whether through media platforms or live appearances, in building trust and credibility among fans.

Brand endorsements emerged as another crucial aspect of celebrity PR. Effective PR strategies not only enhance the celebrity's image but also increase their market value, making them more attractive to brands. The Duff & Phelps Celebrity Brand Valuation Report 2023 estimated the combined brand value of the top 20 Bollywood celebrities at \$1.1 billion, largely driven by PR efforts. The study further found that strategic endorsements aligned with a celebrity's image are more likely to resonate with consumers, thereby enhancing both the celebrity's and the brand's credibility.

Interactive PR strategies, such as live Q&A sessions and virtual events, also play a significant role in consumer engagement and loyalty. The study found that 35.2% of respondents rated live Q&As as highly effective, while 36.3% gave similar ratings to virtual events. These interactive platforms provide celebrities with opportunities to connect with their audience in real-time, fostering stronger relationships and enhancing loyalty.

However, the study also revealed certain limitations in PR effectiveness. While PR can significantly shape consumer perception, it cannot entirely control it. Factors such as personal biases, pre-existing opinions, and media controversies can influence how PR messages are received. Moreover, while social media has emerged as a dominant PR platform, the rapidly evolving nature of digital trends means that strategies need to be constantly adapted to remain effective.

In conclusion, PR strategies play a pivotal role in shaping the public image, brand value, and overall success of Bollywood celebrities. To remain effective, PR campaigns must prioritize authenticity, strategic brand partnerships, and continuous adaptation to evolving trends. The study's findings underscore the importance of an integrated approach that combines traditional PR tactics with modern digital strategies. Future research could further explore how emerging platforms, such as short-form video content and virtual reality experiences, continue to reshape the PR landscape for celebrities. By embracing innovation while maintaining authenticity, Bollywood celebrities and their PR teams can build stronger, more enduring connections with their audiences.

## 8. Suggestions

**Prioritize Authenticity and Transparency:** Bollywood celebrities and their PR teams should prioritize authentic and transparent communication across all platforms. Consumers increasingly value celebrities who present their true selves rather than carefully curated personas. This involves sharing behind-the-scenes moments, personal stories, and honest opinions while addressing controversies promptly and truthfully. Transparent communication not only builds credibility but also strengthens the emotional connection between celebrities and their audience, fostering long-term loyalty.

**Strategic Brand Endorsements:** PR strategies should ensure that brand endorsements are aligned with the celebrity's image, values, and target audience. Consumers are more likely to trust endorsements

when there is a clear synergy between the celebrity and the brand. For instance, a celebrity known for fitness should endorse health-related products rather than unrelated luxury items. PR teams should conduct thorough research before signing endorsement deals to ensure they resonate with the celebrity's persona and do not dilute their brand value.

**Monitor and Adapt PR Strategies:** With the constantly evolving digital landscape, it is essential for PR teams to regularly monitor the effectiveness of their strategies. This includes tracking social media engagement, audience sentiment, and the performance of PR campaigns. Tools like social listening platforms can provide real-time insights into how the public perceives a celebrity. Based on this feedback, PR strategies should be adapted to stay relevant, address emerging trends, and mitigate any negative narratives before they escalate.

**Focus on Crisis Management:** Effective crisis management is crucial for safeguarding a celebrity's image. PR teams should have a well-defined crisis communication plan that includes rapid response protocols, clear messaging, and designated spokespersons. During controversies or misinformation outbreaks, timely and transparent communication can prevent reputational damage. This also involves addressing the issue directly, offering solutions or clarifications, and demonstrating accountability when necessary. Proactive crisis management ensures that short-term setbacks do not tarnish a celebrity's long-term brand value.

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## THE EVOLUTION AND IMPACT OF CHATBOTS AND VIRTUAL ASSISTANTS IN BANKING: A COMPREHENSIVE ANALYSIS

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### Abstract

*The rapid advancements in artificial intelligence (AI) have significantly transformed banking services, particularly in customer service and financial management. AI-powered chatbots and virtual assistants are increasingly adopted by financial institutions to enhance user experiences, streamline operations, and reduce costs. This paper explores the evolution, applications, benefits, challenges, and future trends of AI-driven chatbots and virtual assistants in banking. Furthermore, it highlights regulatory concerns, customer trust issues, and the potential for further integration with emerging technologies. A mixed-method research approach, including a structured survey, was used to analyze customer perceptions and chatbot adoption trends. The findings indicate that while AI-driven chatbots improve efficiency and accessibility, challenges such as security concerns, trust issues, and limitations in handling complex queries remain. The paper concludes with recommendations for banks to enhance chatbot effectiveness and improve customer satisfaction.*

**Keywords:** AI Chatbots, Virtual Assistants, Banking Automation, Financial Technology, Customer Trust, Machine Learning

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### 3. Introduction

The banking industry has experienced a profound digital transformation over the past decade, driven by advancements in artificial intelligence (AI), machine learning (ML), and natural language processing (NLP). Traditional banking services, which heavily relied on human interaction, are now shifting toward AI-driven automation. Chatbots and virtual assistants have become essential tools for banks, offering 24/7 customer support, personalized financial recommendations, and automated transaction assistance.

### 4. Review of Literature

#### 4.1 Evolution of AI in Banking

AI has played a transformative role in banking since the 1950s, with early innovations such as automated teller machines (ATMs) and fraud detection systems. Over time, banks integrated AI into more sophisticated areas, such as credit risk assessment, algorithmic trading, and customer service automation.

The rise of chatbots in banking began with rule-based systems that followed predefined scripts. However, modern AI-powered chatbots use machine learning (ML), natural language understanding (NLU), and sentiment analysis to interact intelligently with customers.

#### 4.2 Types of Chatbots in Banking

- **Rule-Based Chatbots:** Follow predefined decision trees and handle simple queries such as account balance inquiries.
- **AI-Powered Chatbots:** Utilize ML and NLP to interpret complex queries, learn from interactions, and improve over time.
- **Voice-Activated Virtual Assistants:** Digital assistants such as Alexa, Siri, and Google Assistant are integrated into banking apps for voice-based transactions.

#### 4.3 Chatbots vs. Virtual Assistants



While chatbots primarily handle simple customer inquiries, virtual assistants provide more advanced functionalities such as:

- Voice recognition-based financial transactions
- Personalized investment recommendations
- Predictive financial analytics

For example, Bank of America's Erica uses AI to provide proactive financial insights and fraud alerts.

## 5. Research Gap

Despite extensive research on AI in banking, gaps remain in understanding customer trust, security concerns, and chatbot adaptability for complex financial queries. This study aims to bridge these gaps by analyzing customer perceptions and chatbot efficiency.

## 6. Objectives of the Study

The primary objectives of this research are:

1. To examine the evolution of AI-powered chatbots and virtual assistants in banking.
2. To assess the benefits and challenges associated with the use of chatbots in banking services.
3. To evaluate customer perceptions of chatbot reliability, trust, and usability.
4. To explore future trends and innovations in AI-driven banking.
5. To provide recommendations for improving chatbot efficiency and customer satisfaction.

## 7. Research Methodology

### 7.1 Research Approach

A mixed-method approach was used, combining a literature review with primary data collection via a structured survey.

### 7.2 Survey Design

A structured questionnaire was distributed to 49 banking customers via Google Forms. The survey explored:

- Usage patterns (e.g., frequency and purpose of chatbot interaction)
- Satisfaction levels with chatbot responses
- Trust in AI chatbots for financial transactions
- Preferences between human agents and AI assistants

### 7.3 Data Analysis

Quantitative data were analyzed using descriptive statistics, and qualitative responses were examined to identify key themes related to chatbot adoption and customer concerns.

## 8. Data Analysis & Interpretation

### 8.1 Adoption Rates

- 60% of respondents had used banking chatbots.
- 40% found them useful for basic inquiries, but only 20% trusted them for financial transactions.

### 8.2 Common Use Cases

- Customer support (40%)
- Checking account balance (30%)
- Transaction history requests (20%)

### 8.3 User Satisfaction & Trust

- 40% were satisfied with chatbot responses.
- 30% lacked trust due to limited chatbot capabilities.

## 9. Findings, Suggestions & Conclusion

### 9.1 Findings

Survey results highlight that while AI chatbots improve efficiency, customer trust and security concerns remain significant obstacles.

### 9.2 Suggestions

Banks must focus on:

- Enhancing chatbot NLP and ML algorithms for more intuitive conversations.
- Strengthening data encryption and security compliance.
- Improving chatbot integration with human agent support for complex queries.

### 9.3 Conclusion

AI chatbots and virtual assistants are revolutionizing banking by enhancing customer service, reducing costs, and improving financial security. However, trust issues, security concerns, and technical limitations remain barriers to widespread adoption. Future advancements in NLP, blockchain security, and voice recognition will shape the next phase of AI-driven banking. Banks must balance automation with human oversight to build trust and ensure customer satisfaction.

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## TRANSFORMING INDIA'S LEGAL LANDSCAPE: LEGISLATIVE AND JUDICIAL REFORMS FOR VIKSIT BHARAT 2047

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### Abstract

*Legislative and judicial reforms are pivotal in shaping a nation's governance, economy, and social justice system. Under the Viksit Bharat 2047 vision, India is undergoing significant legal transformations aimed at modernizing governance, streamlining judicial processes, and improving access to justice. Key reforms include updates to criminal laws, simplification of commercial regulations, and digitalization of judicial proceedings. These changes aim to enhance economic stability, strengthen institutions, and ensure timely justice. This study examines the impact of these reforms on India's progress and highlights the role of legal modernization in fostering economic growth and social development. The findings suggest that an efficient legal framework is essential for achieving India's goal of becoming a developed nation by 2047.*

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### Introduction

A well-structured legal system is the backbone of a nation's governance and development. India, as a rapidly growing economy, faces various challenges such as judicial delays, outdated laws, and regulatory complexities that hinder business growth and justice delivery. To address these issues, the Government of India has introduced comprehensive legislative and judicial reforms under the Viksit Bharat 2047 vision. These reforms aim to create a transparent, efficient, and technology-driven legal framework that supports economic development, strengthens institutions, and improves governance.

### Significance of Legislative and Judicial Reforms

Strengthening governance by removing outdated laws and ensuring legal transparency.

Enhancing economic growth through simplified regulations and investor-friendly policies.

Expanding access to justice by reducing judicial backlogs and integrating technology.

Ensuring social justice by making the legal system more inclusive and efficient.

This article analyzes key legislative and judicial reforms and their potential impact on India's goal of becoming a developed nation by 2047.

### Research Methodology

#### Research Design

This study follows a qualitative and analytical research approach, focusing on the examination of legal reforms and their socio-economic impact.

#### Data Collection

Secondary Sources: Books, academic journals, legal case studies, and research reports from institutions like NITI Aayog and the Ministry of Law and Justice.

Case Studies: Selected legal and economic cases demonstrating the impact of reforms.

#### Data Analysis

A comparative legal analysis is used to assess India's reforms against global best practices. Qualitative content analysis helps evaluate the effectiveness of policy changes in governance, economic growth, and judicial efficiency.

**Limitations**

The study primarily focuses on recent reforms, limiting its historical perspective.

Some policies are in early implementation phases, making it difficult to assess long-term impacts.

The research relies on secondary data, which may not capture real-time execution challenges.

**Objectives of the Study**

1. To examine the role of legislative and judicial reforms in India's development under Viksit Bharat 2047.
2. To analyze the impact of legal changes on governance, economic growth, and social justice.
3. To assess judicial reforms in reducing case pendency and enhancing legal accessibility.
4. To explore the role of technology in modernizing legal institutions.
5. To recommend policy measures for strengthening India's legal system.

**Literature Review****1. Evolution of Legal Reforms in India**

India's legal system, largely derived from British-era laws, has undergone periodic changes to align with democratic and economic needs (Austin, 1966). While the Indian Constitution provides a strong foundation, continuous modernization is necessary to address emerging challenges.

**2. Legal Reforms and Economic Growth**

Efficient legal systems play a crucial role in fostering business confidence and investment (Sen, 2009). The introduction of business-friendly laws such as the Insolvency and Bankruptcy Code (IBC), 2016, has significantly improved India's Ease of Doing Business ranking.

**3. Judicial Efficiency and Case Backlog**

A backlog of over 40 million pending cases in Indian courts has created significant delays in justice delivery (Galanter, 1989). Fast-track courts, Lok Adalats, and alternative dispute resolution (ADR) mechanisms have been introduced to address this issue.

**4. Technology and Judicial Reforms**

Technology is revolutionizing the judiciary, with AI-powered research tools, e-courts, and virtual hearings improving efficiency (Katsh & Rabinovich-Einy, 2017). The Supreme Court's SUPACE AI system assists in legal research and case management.

**5. Modernization of Criminal Laws**

The Bharatiya Nyaya Sanhita (BNS), 2023, replaces colonial-era penal laws with provisions suited to contemporary challenges, including cybercrime, terrorism, and financial fraud.

**Key Legislative Reforms****1. Criminal Law Reforms**

Bharatiya Nyaya Sanhita (BNS), 2023 – Updates criminal laws to address modern offenses.

Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023 – Enhances procedural transparency in criminal investigations.

Bharatiya Sakshya Adhiniyam (BSA), 2023 – Recognizes digital evidence and modern investigation methods.

**2. Economic and Commercial Laws**

Insolvency and Bankruptcy Code (IBC), 2016 – Simplifies debt resolution mechanisms.

Digital India Act (Upcoming) – Expected to regulate digital transactions and cybersecurity.

Decriminalization of minor economic offenses – Reduces legal burdens on businesses.

### 3. Labor Law Reforms

Consolidation of 29 labor laws into four labor codes, simplifying compliance and improving worker protection.

Enhanced provisions for gig workers and social security.

### Judicial Reforms and Their Impact

#### 1. Enhancing Judicial Efficiency

Fast-track courts ensure speedy trials for critical cases.

e-Courts Mission Mode Project allows digital case filing and virtual hearings.

#### 2. Reducing Case Backlogs

Lok Adalats and ADR mechanisms promote out-of-court settlements.

Tribunal Reforms streamline administrative dispute resolution.

#### 3. Technology in the Judiciary

AI-powered legal research tools optimize case management.

Online Dispute Resolution (ODR) facilitates digital arbitration and mediation.

### Impact of Reforms on Viksit Bharat

#### 1. Economic Development

A streamlined legal system enhances business growth and foreign investment.

Faster dispute resolution increases investor confidence.

#### 2. Social Justice and Inclusivity

Speedier trials improve access to justice for marginalized communities.

Digital initiatives make legal services more accessible.

#### 3. Governance and Transparency

AI and digital platforms enhance judicial accountability.

Stronger anti-corruption laws improve institutional integrity.

### Conclusion

Legislative and judicial reforms are key to India's transformation under Viksit Bharat 2047. By modernizing laws, improving judicial efficiency, and integrating technology, India is creating a legal framework suited for contemporary challenges. These reforms will play a significant role in ensuring economic growth, governance efficiency, and social justice, ultimately positioning India as a developed nation by 2047.

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## GREEN CONSUMERISM: IMPACTS OF SUSTAINABILITY PRACTICES ON CONSUMER PURCHASING BEHAVIOR

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### Abstract

*Green consumerism refers to the rising trend of buyers showing an interest in environmentally friendly items or companies. As global awareness of climate change, resource depletion, and social responsibility grows, an increasing number of customers are making purchasing decisions based on a company's environmental and ethical standards. Businesses are reacting by introducing environmentally friendly policies such as lowering carbon footprints, employing sustainable products, and encouraging ethical labour practices. This movement is altering the marketplace, as organizations who prioritize sustainability see increased brand loyalty and customer trust. However, worries regarding greenwashing or deceptive sustainability claims highlight the importance of openness.*

*The paper investigates how corporate sustainability practices influence the behavior of customers in making purchases within the green consumerism context. Businesses are now adopting such practices as a way of trying to cope with ever-increasing demands for environmental responsibility—practices such as eco-friendly packaging, ethical sourcing, carbon neutrality, and more. This research paper examines how such initiatives go on to influence consumers regarding their willingness to pay a premium for sustainability-oriented products, the level of trust in sustainability claims, and how these factors influence brand loyalty.*

*It also touches on the issue of greenwashing, misguiding false claims made by companies in terms of being sustainable or being a big impact on consumer trust and long-term brand perception. The research employs a survey-based approach that deals with primary data on consumer attitudes to corporate sustainability and the drivers of purchasing behavior. The findings illustrate how best to align business sustainability strategies with the consumer's preference to actually build trust, increase engagement, and drive loyalty. Such insight would be invaluable for firms that would like to position themselves in a green market without the risks of incongruent greenwashing.*

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**KeyWords:** green consumerism, greenwashing and sustainability

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### INTRODUCTION

As more people became aware about the environmental issues the graph of green consumerism has seen a growth and an upward trend. Green consumerism is trend where individuals prioritise buying from brands and businesses that show commitment towards sustainability and prevention of environmental harm through ethical practices. As global environmental concerns like global warming caused due to plastic pollution, mining and etc consumers have started to switch to brands that help them reduce their environmental footprint, these consumers majority buy and promote brands that have the similar mindset and objective and use methods like eco-friendly packaging, use of renewable energy ,recycling waste and ethical sourcing of materials

#### Corporate Sustainability Efforts

To meet and stay in the game businesses all over the world have started adopting sustainability as a top objective of their business and this has proven effective to many of these brands. Brands use methods and techniques like recyclable materials and reducing carbon emissions to ensuring fair labor standards



and ethical sourcing of raw materials. By incorporating sustainability into their core operations, companies not only aim to protect the environment but also respond to the expectations of their eco-conscious consumers.

#### Consumer Expectations and Trust

On the other hand, while interpretation of sustainability improves among the public, a business also has to bear in mind the challenge of customer trust. Lots of people do not believe the claims of corporations to go green, and the term "greenwashing" is referred to when firms mistakenly market their products as environmentally friendly just so that they may come off as far more responsible than they actually are. The major ways by which greenwashing may harm a brand are a confined brand reputation and customer trust leading to reduced loyalty and possible loss of market share. From this consideration, transparency and authenticity of the sustainability claim have emerged as important needs for every firm desiring to win and retain ecologically conscious customers.

#### Research Motivation

The overlap between business sustainability practices and consumer behavior is an important area of study in that it helps to evaluate how businesses can apply sustainability measurably into their enterprise model, meeting the expectations of consumers. Understanding the drivers of consumer behavior around sustainable products and trust in environmental claims will be paramount in driving business success in a sustainability-led market. This research paper endeavors to discuss how corporate sustainability performance influences consumer purchasing decisions, their willingness to pay premium prices, and brand loyalty. Additionally, it intends to address the risks associated with greenwashing and how that influences long-term consumer trust. Based on these factors, the present study aims to highlight aspects that will help businesses and marketers match sustainability practices with consumer values as a way of creating brand loyalty and enhancing engagement.

#### LITERATURE REVIEW

Consumer preferences have increasingly shifted towards sustainability, with environmental awareness driving purchasing decisions.

A study by Lehner et al. (2022) emphasized that consumers now evaluate brands based on their sustainability efforts and transparency. This shift is largely driven by personal values, as consumers align their purchases with their environmental and ethical beliefs and according to a study published by Deloitte (2020) provided a insight on the purchasing preferences of how the younger generations, particularly millennials and the Gen Z, are driven by the thought of sustainability and the report showed that 60% of millennials consider a company's environmental impact when making purchasing decisions. Also, the demographic survey expected the companies to move toward sustainability and the brand loyalty of the younger generation motivates many brands to do it. The overarching agreement that emerges from various studies indicates that consumers are increasingly inclined to invest extra money for products that are deemed sustainable and environmentally friendly. In 2022, González Rodríguez and team carried out a study that provided substantial proof revealing that buyers tend to be quite eager to pay extra for goods they view as environmentally sustainable; still, it is vital to acknowledge that how strongly they feel about this can vary widely, influenced by the exact type of product involved and how effective the sustainability efforts are. Also, this occurrence is further validated by a thorough examination executed by EY in 2021, which convincingly reveals that consumers, especially those who possess a hefty disposable income, exhibit a stronger tendency to spend more on products that incorporate eco-conscious packaging and are identified with fair-trade



certifications. Greenwashing, the practice of deceiving consumers regarding a product's environmental advantages, significantly erodes consumer trust. Terra Choice (2021) discovered that a considerable number of products boasting green attributes are guilty of overstating their ecological benefits, which diminishes consumer confidence. In their 2021 study, De Jong and others highlight the long-term reputational setbacks brought on by greenwashing, indicating that consumers who find false assertions are more hesitant to interact with that brand. The research stresses that brands must emphasize transparency to sidestep the dangers of greenwashing. Sarkis et al. (2022) reveal that consumers are more likely to remain devoted to brands that present transparent, comprehensive, and credible details about their sustainability efforts and pledges. The consistent and clear communication of these sustainability efforts serves to effectively build a foundation of long-term trust between the brand and its consumers. In addition, research conducted by Papista and Krystallis (2022) demonstrates that brands which successfully align their core values with the ethical standards and principles held by their customers are able to cultivate significantly stronger emotional connections, consequently resulting in elevated levels of consumer loyalty that can withstand the test of time.

### RESEARCH GAP

The research gap lies in the limited availability of low cost, solar powered water purifiers that effectively remove impurities like salts and helps balancing PH without relying on electricity, chemicals, or replaceable components, limiting their accessibility in rural and off- grid areas.

### OBJECTIVES

1. Explore the relationship between corporate sustainability and consumer buying behavior.
2. Investigate consumer awareness of sustainability efforts.
3. Analyze the impact of greenwashing on consumer trust and perception.
4. Understand if emotional and social factors drive and impact sustainable purchasing decisions.

### METHODOLOGY

There are 2 ways in which data can be collected, as mentioned below:

- a. Primary data: A type of data that is collected directly from the source, and that data is not been published or used by anyone, up till now. E. G. Collecting data through Google forms.
- b. Secondary data: A type of data that is being collected or taken from someone else's collected data. Eg - Data collection from different studies and research papers

The research was conducted on a bunch of population including college students, degree students and working class. The study was conducted using primary data. Primary data was collected through questionnaire method. A total of 70 responses were received. The data was analysed using statistical tools.

Here's a detailed outline of the research methodology:

1. Quantitative methodology:
  - Survey Instrument: Online questionnaire (Google Forms)
  - Sample: Youth aged 18-35 and above years who have participated in online survey.
  - Sampling Method: Stratified random sampling to ensure diversity in age, gender, education level and problem face
  - Data Collection: Distributed the survey forms through WhatsApp, emails and other online platforms
  - Sample Size: Aim for a minimum of 60 respondents to ensure statistical significance.

## 2. Survey Questions:

- Questions covered key themes such as awareness, willingness to pay, emotional and social influence, trust, and the impact of marketing, all related to sustainability and green consumerism.
- Likert Scale responses on Sustainability and green consumerism

## 3. Data Analysis:

- Thematic Analysis: Identify and statistical analysis of trends and relationships.

## 4. Ethical Considerations:

- Confidentiality: Ensure data is securely stored and only accessible to the research team.

- Informed Consent: Ensure participants are aware of their right to withdraw at any time.

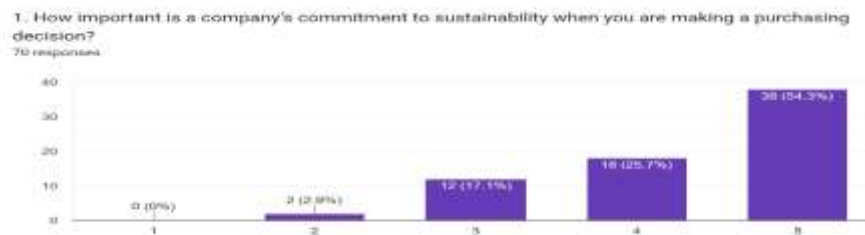
Participants were informed about the study's purpose and procedures, and concerned will be obtained prior to participation. Confidential leave will be maintained by anonymising responses and data will be securely stored with Axis limited to the research team.

## 5. Sample bases:

To study the impact of sustainability on consumer buying behavioral choices, I will gather quantitative data from 60 - 70 respondents, including undergraduate, graduated, post graduate and working professionals

And the population age ranged between 15 to 55 years old. Additionally, I conducted quantitative research through surveys. This quantitative research is done using online surveys by sending google forms on WhatsApp, emails and other online platforms.

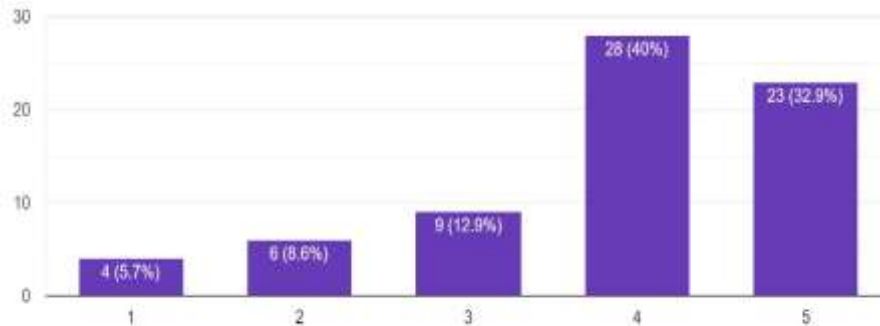
## DATA COLLECTION AND INTERPRETATION



A clear majority of respondents (54.3%) rated sustainability commitment as "5," indicating that it is very important in their purchasing decisions. When combining categories "4" and "5," over 80% (80%) of respondents consider sustainability either highly or very highly important when making purchases. The data reveals that a company's commitment to sustainability plays a critical role in purchasing decisions for many consumers, with over 80% placing high or very high importance on it. Brands that emphasize sustainable practices are likely to attract and retain more customers, as these considerations are crucial for most of the surveyed population.

How much influence do a company's sustainability practices have on your loyalty to their brand?

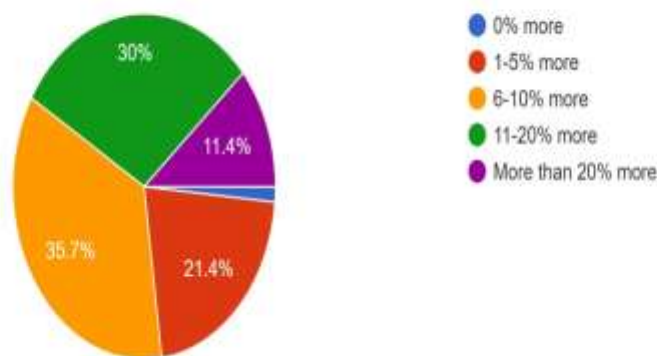
70 responses



The largest portion of respondents (40%) rated sustainability practices as a "4," indicating that these practices have a high influence on their brand loyalty. Another substantial group, 32.9%, chose "5," suggesting very high influence. Together, 72.9% of respondents feel that sustainability has a significant impact on their loyalty (either "4" or "5"). This data indicates that a company's sustainability practices are important to a significant majority of consumers, with over 70% stating these practices strongly influence their brand loyalty. Companies focused on building customer loyalty should consider adopting or strengthening their sustainability initiatives, as it clearly affects consumer decisions.

How much more would you be willing to pay for a product with strong sustainability credentials?

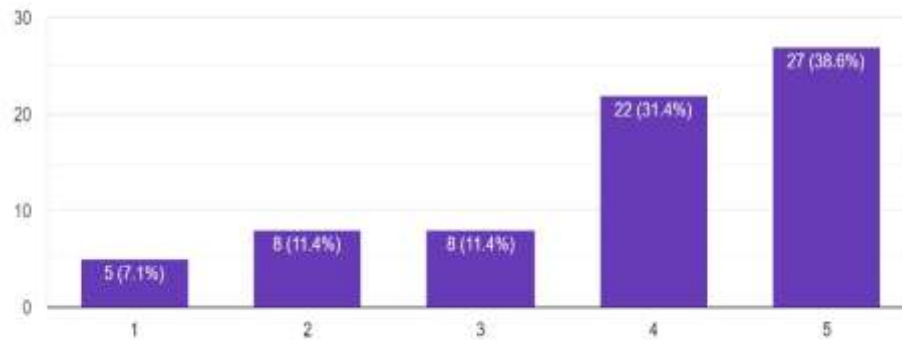
70 responses



A combined 86% of respondents are willing to pay more for products with strong sustainability credentials. The majority fall into the 6-10% (35.7%) and 11-20% (30%) price increase categories. Proving that many consumers are willing to pay extra for products that have strong sustainability credentials, with most willing to accept a 6-20% price increase. Companies can leverage this insight by incorporating sustainability into their products and pricing them accordingly, as customers seem ready to support eco-friendly initiatives at a reasonable premium.

How likely are you to stop purchasing from a brand if you discover their sustainability practices are not genuine (greenwashing)?

70 responses

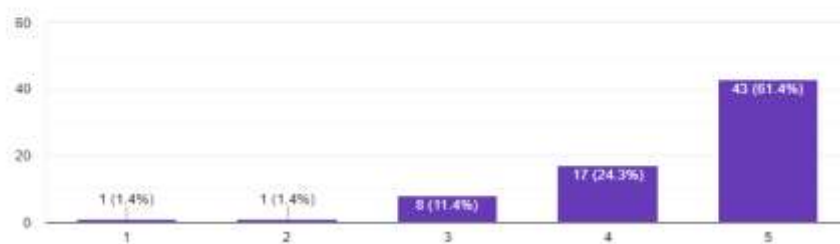


A majority of respondents (38.6%) are very likely to stop purchasing from a brand involved in greenwashing. 31.4% of respondents are also inclined to stop purchasing, leaning towards a high likelihood (4 on the scale). The majority of respondents (70%) indicated that they are highly likely to stop purchasing from a brand if their sustainability claims are found to be false. This suggests that transparent and genuine sustainability practices are critical for maintaining consumer trust and loyalty. Brands that mislead customers with false environmental claims risk significant backlash and a potential loss of business from ethically conscious consumers.

How important is it for you that a company engages in the following sustainability practices?

- a) Eco-friendly packaging
- b) Use of renewable energy
- c) Ethical sourcing of materials
- d) Carbon neutrality
- e) Fair labor practices

70 responses



The overwhelming majority of consumers value sustainability practices highly, with a focus on eco-friendly packaging, renewable energy, ethical sourcing, carbon neutrality, and fair labor practices. This data emphasizes the critical importance for companies to adopt and transparently communicate their commitment to sustainability in order to meet the expectations of socially conscious customers. Brands that fail to align with these values risk alienating a significant portion of their consumer base.

## CHALLENGES AND LIMITATIONS

Green consumerism and sustainability initiatives, while essential for fostering environmental stewardship, encounter significant obstacles that limit their broader efficacy. Key issues include the prohibitive costs of sustainable goods, consumer deception via greenwashing, insufficient awareness of true sustainability, and a tendency for consumers to prioritize convenience and cost over ecological considerations.

**High Costs of Sustainable Products:** A significant number of sustainable products are associated with elevated pricing, which restricts accessibility for consumers with lower incomes. This economic disparity can hinder the inclusivity of green consumerism, resulting in unequal levels of adoption among various socioeconomic strata.

**Greenwashing:** The proliferation of greenwashing, wherein corporations inaccurately assert their environmental friendliness, has the potential to mislead consumers. This phenomenon undermines consumer trust and complicates the ability of consumers to differentiate between authentically sustainable products and those that merely project an eco-friendly façade for promotional purposes.

**Limited Consumer Knowledge:** A considerable portion of consumers possesses a superficial comprehension of the fundamental principles of sustainability. The prevalence of misunderstanding or insufficient access to credible information may lead consumers to make choices that do not confer the environmental benefits they presume.

**Inconsistent Global Standards:** A lack of a universally accepted standard for sustainability certifications and practices persists across various industries and nations. The variability in regulations and certifications engenders confusion and complicates the ability of consumers to discern products that are authentically sustainable.

**Sustainability vs. Convenience:** Eco-friendly products are frequently regarded as less convenient or accessible in comparison to traditional alternatives. A considerable number of consumers emphasize convenience and availability, thereby constraining the pervasive adoption of sustainable options.

**Impact of Consumer Habits:** The transition of consumer behavior towards sustainability is gradual, and a significant portion of consumers exhibits resistance to altering entrenched habits. Despite the presence of awareness, factors such as convenience, cost, and established purchasing patterns frequently overshadow sustainability considerations.

**Environmental Impact of Sustainable Products:** Even products labeled as sustainable continue to exert some degree of environmental impact, whether arising from resource extraction, transportation, or manufacturing processes. These considerations constrain the overall efficacy of green consumerism in meaningfully mitigating environmental detriment.

## FUTURE SCOPE

For Companies

1. **Innovation in Sustainable Products:** Develop affordable and accessible eco-friendly products through R&D.
2. **Transparency and Certification:** Adopt standardized sustainability certifications and clearly communicate practices.
3. **Sustainable Supply Chains:** Optimize supply chains to reduce carbon footprints and embrace circular economy principles.

For Consumers:

1. **Increased Awareness and Education:** Educate themselves on sustainability to make informed choices.
2. **Shifting Preferences Toward Green Products:** Demand and support more sustainable product options.
3. **Collaboration and Advocacy:** Engage with and hold companies accountable for genuine sustainability efforts.
4. **Embracing Minimalism and Conscious Consumption:** Adopt mindful consumption habits to reduce waste and support sustainability.

## CONCLUSION

This academic treatise examines the evolving terrain of green consumerism and the implications of sustainability initiatives on consumer comportment. The findings highlight an escalating inclination among consumers who are increasingly prioritizing sustainability and making procurement decisions based on environmental considerations. The research illustrates a notable shift towards endorsing brands that adopt genuine sustainability practices, thereby bolstering consumer trust and allegiance. However, challenges such as heightened costs, greenwashing tactics, and inadequate consumer awareness continue to present substantial barriers.

For enterprises, the pathway to sustainability hinges on the development of economically feasible eco-friendly products, the preservation of transparency through established certifications, and the refinement of supply chains to mitigate environmental impacts. These strategies can facilitate the cultivation of more profound consumer trust and differentiate authentically sustainable brands from those that practice greenwashing.

Conversely, consumers can assume a critical role by enhancing their awareness and understanding of sustainability matters, advocating for transparency, and embracing more responsible consumption habits. By adjusting their preferences towards genuinely sustainable products and reducing overall consumption, consumers can instigate significant transformation and promote a more sustainable future.

In conclusion, while progress is being made, the advancement towards widespread green consumerism requires ongoing commitments from both corporations and individuals. By addressing the current challenges and capitalizing on the potential opportunities outlined in this discourse, stakeholders can collaboratively advance towards more sustainable practices and effectuate a positive environmental impact.

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**FINANCIAL PERFORMANCE ANALYSIS OF KAVERI SEED CO LTD****Jigna Ankur Vyas***Assistant Professor, KES' Shroff College of Arts and Commerce, Kandivli, Mumbai*

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**Abstract**

*The agricultural sector plays a pivotal role in the development of India and across the globe. To achieve the dream of "Viksit Bharat" by 2047, India needs to prioritize its focus on sustainable growth and the development of the agricultural sector. Ensuring the good financial health of the companies is one of the key areas in the sustenance and growth of the agricultural sector. **Kaveri Seed Company Ltd.** is one of the leading companies in the Indian agricultural sector. This research paper aims to analyze the financial performance of Kaveri Seed Co Ltd using various financial ratios and trend analysis, focusing on key aspects such as profitability, liquidity, solvency, and efficiency over the last five years to determine its financial health. The findings of the study will offer insights into the company's financial sustainability and growth, which will enable informed decision-making, allow benchmarking, and identify areas of improvement, ensuring value addition to the Indian agricultural sector.*

**Key words:** Kaveri Seed Company Ltd, Agriculture, Financial, Trend, **Ratio**

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**Introduction**

Agriculture is a primary sector of the Indian economy, contributing significantly, about 16% to GDP and about 46% to employment. The role of agriculture is essentially very crucial in achieving the dream of 'Viksit Bharat 2047'. During the 'Amritkal' or 'The Era of Elixir' of coming 25 years, India need to prioritise its focus on sustainable growth and development of agricultural sector. To envisage the dream to transform India from developing to developed nation by 2047, Indian Prime Minister Shri Narendra Modi has given a roadmap to focus on 'GYAN'. Sustainable development of the farmers is one of the four pillars of 'GYAN' which stands for Garib –the poor, Yuva – the youth, Annadata – the farmers and Narishakti – the women empowerment. Timely supply and good quality seeds play an essential role empowering farmers to produce better quality and quantity of crop, ensuring sustainable agricultural practices. Agricultural institutions like Kaveri Seed Co Ltd facilitate the sector's growth by providing essential supplies to the farmers.

Kaveri Seed Company Ltd. (KSCL) is a prominent innovator in hybrid seeds in India. Established in 1976 by Mr. G V Bhaskar Rao, its headquarters are located in Hyderabad, Telangana. It stands as the largest agriculture company in India, focusing on hybrid seeds for major crops such as cotton, rice, maize, millets, and various vegetables. The company boasts a robust Research & Development foundation, which has been recognized by DSIR since 2001, along with an extensive distribution network throughout the country.

With over 65,000 acres dedicated to seed production and more than 100,000 farmers involved, the company emphasizes seeds that are high-yield, resistant to diseases, and suitable for varying climates, while enjoying substantial profitability and growth. Kaveri Seed is propelled by innovation, sustainability, and the trust of farmers, continuously contributing to the advancement of India's agricultural industry, thereby improving farm productivity and ensuring food security. Kaveri Seed Company Ltd. has experienced strong financial performance characterized by steady revenue growth and profitability. It maintains a strong competitive stance in the Indian seed market, supported by solid returns and a strong balance sheet.

This research aims to analyze the financial performance of Kaveri Seed Company Ltd over five years, from the financial years 2019-20 to 2023-24, and evaluate its financial health and long-term viability in serving the agricultural sector, thus supporting the initiative 'Viksit Bharat'.

### Review of Literature

**The following literatures were reviewed for the study.**

Jayasingh, D., Anand, A., & Sahoo, S. (2024), analysed that Viksit Bharat, the prime minister's initiative, represents a bold attempt to make India a developed country by 2047. With a per capita Gross National Income (GNI) of \$2,390 as of 2022, India is currently classified as a lower-middle-income economy by the World Bank. According to them, to achieve this transformation, it will be extremely difficult to boost per capita GNI by six times. India also needs long-term improvement in income levels throughout the society.

**Gulati, A., Roy, R., Juneja, R., & Prasad, M. K. (2024), discussed** about alternate policy alternatives that can help farmers without affecting the rest of the economy. They proposed solutions such as increasing total factor productivity in agriculture, diversifying crops to high-value commodities, farmers' producers organizations etc.

**Chand, R. (2019), talked about changing the** approach towards agriculture from "pushing for incremental change" to "transformational change." According to him, agriculture is the intersection of three of the most pressing issues of the twenty-first century: maintaining food and nutrition security, mitigating and adapting to climate change, and using vital resources like land, energy, and water sustainably. Due to the manufacturing sector's inability to attract workers away from agriculture and keep up with the workforce's development, agriculture is also gaining new significance for meaningful employment.

**Baran, D., Pastýr, A., & Baranová, D. (2016), stated that** the business subject's financial status is a complicated byproduct of their overall performance. They analysed the business performance of selected companies on key indicators of activity, profitability, liquidity, indebtedness, and market value using ratio analyses.

### Objectives of the Study

- To assess the profitability of Kaveri Seed Company Ltd.
- To evaluate Kaveri Seed Company Ltd.'s liquidity status.
- To analyze the solvency and financial health of Kaveri Seed Company Ltd.
- To investigate the operational efficiency of Kaveri Seed Company Ltd.

### Hypothesis

H1: Kaveri Seed Company Ltd. demonstrates a strong profitability position,

H0: Kaveri Seed Company Ltd. does not demonstrate a strong profitability position.

H2: Kaveri Seed Company Ltd. retains sufficient liquidity to fulfil its short-term obligations.

H0: Kaveri Seed Company Ltd. does not retain sufficient liquidity to fulfil its short-term obligations.

H3: Kaveri Seed Company Ltd.'s solvency ratios reflect financial stability and low financial risk.

H0: Kaveri Seed Company Ltd.'s solvency ratios do not reflect financial stability and indicate high financial risk.

H4: Kaveri Seed Company Ltd. functions efficiently and utilizes resources optimally, managing costs effectively.

H0: Kaveri Seed Company Ltd. does not function efficiently and utilizes resources sub-optimally while managing costs poorly.

### Research Methodology

The study employs a descriptive and analytical research approach, utilizing secondary data collected from Kaveri Seed Co Ltd's annual reports, financial statements, and other relevant financial publications. It conducts a structured financial analysis using a quantitative research approach. The financial performance of Kaveri Seed Co Ltd is examined using Ratio analysis and Trend analysis, evaluating profitability, liquidity, solvency, and efficiency over five financial years, from 2019-20 to 2023-24.

### Scope and Limitations

The study emphasizes only on Kaveri Seed Co Ltd's financial performance and does not account for other qualitative factors like management strategies or external economic influences. The data availability and reliability depend solely on publicly disclosed financial reports and regulatory submissions.

### Financial Performance Analysis and Interpretation

The analysis of Kaveri Seed Co Ltd. includes the following four key financial performance indicators i.e. Profitability, Liquidity, Solvency, and Efficiency.

#### • Profitability Analysis:

Profitability ratios are used to evaluate a company's capacity to generate profit to its revenue, assets, or equity. **Return on Assets (ROA), return on Capital Employed (ROCE), and Net Profit Margin (NPM) are the key ratios that help in analyzing financial performance, operational efficiency, and potential for growth of the company.**

Parameters	Year				
	2019-20	2020-21	2021-22	2022-23	2023-24
<b>Return on Assets (ROA): Net Income/ Average Total Assets *100</b>					
ROA	15.85	15.55	11.21	13.31	14.57
Trend Percentage	100%	98.11%	70.73%	83.98%	91.92%
<b>Return on Capital Employed (ROCE): Earnings before Interest &amp; tax (EBIT)/ Capital Employed * 100</b>					
ROCE	25.80	24.16	16.33	19.68	24.32
Trend Percentage	100%	93.64%	63.29%	76.28%	94.26%
<b>Net Profit Margin Ratio (NPM): Net Profit/ Total Revenue*100</b>					
NPM Ratio	28.44	30.93	22.83	26.68	27.57
Trend Percentage	100%	108.76%	80.27%	93.81%	96.94%

The ROA ratio **declined from 15.85% in 2019-20 to 11.21% in 2021-22. However, it recovered to 13.31% in 2022-23 and 14.57% in 2023-24.** The trend percentage was low at **70.73% in 2021-22** but improved to **91.92% in 2023-24.** The decline of ROA in **2020-21 and 2021-22** suggests a lower net income or inefficient asset utilization. But the **recovery in the last two years** indicates a better profitability; still, its lagging behind 2019-20.

The ROCE ratio decreased from 25.80% in 2019-20 to 16.33% in 2021-22, indicating weaker capital returns. A recovery to 19.68% in 2022-23 and 24.32% in 2023-24 points to an improvement. The trend percentage reached a low of 63.29% in 2021-22 before climbing to 94.26% in 2023-24, showcasing a robust recovery indicating enhanced profitability. The decreasing trend observed in 2020-21 and 2021-22 could be attributed to lower EBIT, higher capital investments, or increasing operational expenses.

The NPM ratio **went to 30.93% in 2020-21** but fell to **22.83% in 2021-22.** It recovered to **26.68% in 2022-23 and 27.57% in 2023-24.** The **trend percentage declined to 80.27% in 2021-22** before

recovering to **96.94% in 2023-24**. The fall in **2021-22** may be due to higher costs or lower revenue. However, the **gradual recovery in the last two years** suggests improved cost management and a rise in revenue.

**All three profitability ratios declined in 2021-22, but later they showed an increasing trend.**

- **Liquidity Analysis:**

Liquidity analysis helps in evaluating a company's capacity to fulfil its short-term liabilities and handle the working capital efficiently. The Current Ratio and Quick Ratio are two essential parameters utilized to assess the Liquidity of the company.

Parameters	Year				
	2019-20	2020-21	2021-22	2022-23	2023-24
<b>Current Ratio: Current Assets/ Current liabilities</b>					
Current Ratio	2.14	2.36	2.73	2.50	1.95
Trend Percentage	100%	110.28%	127.57%	116.82%	91.12%
<b>Quick Ratio: Quick Assets/ Quick Liabilities</b>					
Quick Ratio	0.87	1.04	1.15	1.12	0.79
Trend Percentage	100%	119.54%	132.18%	128.74%	90.80%

The above data indicates that the current ratio rose from 2.14 in 2019-20 to 2.73 in 2021-22, reflecting enhanced liquidity. However, it fell to 2.50 in 2022-23 and further to 1.95 in 2023-24, indicating a decrease in liquidity. The trend percentage reached its highest point with 127.57% in 2021-22 but later dropped down to 91.12% in 2023-24, highlighting a decline in short-term financial stability. The quick ratio also shows a similar trend over five years. It improved from 0.87 in 2019-20 to 1.15 in 2021-22, indicating better liquidity. However, it decreased to 1.12 in 2022-23 and declined further to 0.79 in 2023-24. It reflects a diminished capacity of a company to meet immediate liabilities. The highest trend percentage was at 132.18% in 2021-22 before falling to 90.80% in 2023-24.

The growth shown in the liquidity ratios in earlier years implies good working capital management. However, a decline, specifically in the quick ratio dropping below 1 in 2023-24, indicates a need for caution in liquidity management. This raises concerns about the company's over-reliance on inventory to meet its short-term obligations.

- **Solvency Analysis:**

Solvency analysis helps to determine the ability of the company to meet its long-term obligations. Debt to equity ratio and Interest coverage ratio are the key indicators to measure a company's solvency position.

Parameters	Years				
	2019-20	2020-21	2021-22	2022-23	2023-24
<b>Debt to Equity Ratio: Debt/ Equity</b>					
Debt to Equity Ratio	0.00	0.00	0.00	0.00	0.00
Trend Percentage	100%	100%	100%	100%	100%

KSCL is a company with zero debt. It has no risk of meeting long-term obligation and Interest thereon. It is solely dependent upon its equity fund.

- **Efficiency Analysis:**

Efficiency analysis helps to measure how well a company utilizes its **assets and resources** to generate revenue and manage costs. The two key efficiency ratios used for analysis are the Assets Turnover ratio and the Operating Efficiency ratio.

Parameters	Years
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	2019-20	2020-21	2021-22	2022-23	2023-24
<b>Assets Turnover Ratio: Net Sale/ Average Total Assets</b>					
Assets Turnover Ratio	0.55	0.56	0.48	0.52	0.53
Trend Percentage	100%	101.82%	87.27%	94.55%	96.36%
<b>Operating Efficiency Ratio: Operating Cost/ Total Revenue</b>					
Operating Efficiency Ratio	70.37	68.23	76.15	72.28	70.78
Trend Percentage	100%	96.96%	108.21%	102.71%	100.58%

The Assets Turnover ratio remained relatively **stable between 2019-20 (0.55) and 2020-21 (0.56)**. However, it **declined significantly in 2021-22 to 0.48, i.e., 87.27% of the base year**, indicating reduced efficiency. It partially **recovered in 2022-23 (0.52) and 2023-24 (0.53)**, indicating some improvement, but it remained below 2019-20 levels.

The Operating Efficiency ratio **improved from 70.37 in 2019-20 to 68.23 in 2020-21**, showing better cost management. However, it **rose to 76.15 in 2021-22 and again declined to 72.28 in 2022-23 and 70.78 in 2023-24, indicating improved cost control. A Higher trend percentage of 108.21% in 2021-22 indicates a higher operating cost** leading to a lower Operating profit margin ratio. A **lower Operating Efficiency ratio is better**, as it indicates higher operational efficiency.

### Findings and Discussion

The financial performance analysis highlights Kaveri Seeds Company Ltd.'s financial strengths and weaknesses.

- The profitability ratios indicate the efficiency of the company in generating returns. The ratio and trend analysis indicates that though the company has improved its profitability in the last two years, it still remained below its base year 2019-20. Hence, the Null hypothesis that Kaveri Seed Co Ltd does not demonstrate a strong profitability position is accepted.
- The liquidity ratios reflect the ability of the company to meet its short-term obligations. The current ratio and Quick ratio both fell down till 2021-22; however, they improved later. Though the ratios have shown a poor trend, since the ratios are still close to their standard, null hypothesis, Kaveri Seed Co Ltd does not retain sufficient liquidity to fulfil its short-term obligations is rejected.
- The solvency ratios provide insight into the company's long-term financial stability and the effectiveness of its resource utilization. Kaveri Seed Co Ltd is a zero-debt company; hence, the null hypothesis, Kaveri Seed Company Ltd's solvency ratios do not reflect financial stability and indicate high financial risk is rejected.
- The Efficiency ratios measure the company's ability to manage its operating costs to its revenue. The trend analysis indicated a downward trend initially; however, it improved in the last two years. Hence, the null hypothesis that Kaveri Seed Company Ltd does not function efficiently and utilizes resources sub-optimally while managing costs poorly is rejected.

### Conclusion and Recommendations

Based on the findings, it is concluded that the financial performance of Kaveri Seed Company Ltd. has shown a downward trend in 2020-21 and 2021-22 during the Covid-19 period, affecting its financial health. However, it has improved in all the key areas during 2022-23 and 2023-24. The company needs to work strategically to increase its profitability and liquidity position. The scope of future research can be extended by comparing KSCL's performance with its peers for better insight. The following

recommendations are provided to improve the KSCL's financial performance, enhance credit accessibility, and strengthen financial sustainability.

- **Enhance Asset Utilization and optimize capital deployment** to boost ROA and maintain ROCE above 25%.
- **Improve cost control & revenue growth** to sustain a high NPM
- Monitor and improvise liquidity management with reduced reliance on inventory to maintain short-term financial stability
- Ensure better asset utilisation strategies
- Focus on cost management, maintain **operating efficiency, and** improve revenue generation.

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## BRIDGING THE INVESTMENT GAP: A CONCEPTUAL MODEL TO INCREASE RETAIL PARTICIPATION IN NON-CONVERTIBLE DEBENTURES

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### Abstract

*Retail investors in India exhibit a strong preference for Fixed Deposits due to the perceived safety it provides. They also favour Initial Public Offerings (IPOs) in the equity segment due to the reputation it has gained for achieving quick returns in a short term period. A classic middleground between these two asset classes, Non-Convertible Debentures (NCDs) remain largely ignored by retail investors due to lack of awareness, perceived illiquidity and lack of effective marketing strategies. This paper explores the factors influencing retail investors towards Fixed Deposits and IPOs and proposes a conceptual model that aims to drive up retail participation in NCDs by utilizing existing fintech platforms, effective marketing strategies, financial education and regulatory support. By adapting strategies that have worked for investment avenues like Fixed Deposits and IPOs, this paper aims to bridge the knowledge gap and promote NCDs as a viable option for retail investors.*

**Key words:** Retail investors, Non-Convertible Debentures (NCDs), Regulatory Framework, Initial Public Offering (IPO), Fixed Deposits, Alternative Investments, Investment Strategies.

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### Introduction

My father's portfolio is almost evenly split between mutual funds and fixed deposits. In commerce education, it is almost a rite of passage to hear professors critique fixed deposits for their inability to generate returns that outpace inflation. I presented this argument to my father and remarked, "Instead of putting so much money in fixed deposits, you should buy bonds. At least you will generate returns above inflation!" My father's reply truly baffled me. He said and I quote, "I have mutual funds and IPOs for returns, fixed deposits are just for safety." My dad was okay with the possibility that Fixed Deposits were eroding his wealth long-term, as long as it held the reputation of being "safe". Perhaps if my dad were aware about the other "safe" assets out there like maybe a secured bond, he wouldn't have to settle for subpar returns just to feel that his assets were protected.

A fundamental concept in finance is the hierarchy of debt repayment, as outlined in the Insolvency and Bankruptcy Code, 2016. Secured creditors are prioritized, followed by preferential and unsecured creditors, with common shareholders last in line. If only this order is considered, it can be argued that common equity is perhaps one of the riskiest asset classes for investors. Yet in 2023, over 60% of mainboard IPOs were oversubscribed. This raises an important question: why do traditionally risk-averse Indian investors heavily invest in IPOs despite their volatility? The answer lies in investor motivations. IPOs have gained a reputation for quick gains, driven by metrics like Grey Market Premium (GMP) and Listing Gains. While this reflects the growing enthusiasm for equities, it also signals a troubling neglect for fixed-income instruments like bonds.

The prevailing investment approach typically comprises mutual funds and individual equities (return-generating assets) alongside fixed deposits (a capital preservation tool). However, fixed income instruments such as bonds are often overlooked. Given that the minimum threshold for a mainboard equity IPO is ₹15,000 (and in multiples thereafter) and that for Non-Convertible Debentures (NCDs) is ₹10,000 (and in multiples thereafter), one would expect greater investor interest in NCDs. However, in



reality, IPOs frequently experience oversubscription, while NCDs remain underutilized and relatively unknown among retail investors.

This paper proposes a conceptual model to bridge this awareness gap, promoting NCDs as a viable investment option for a balanced portfolio. Enhancing investor knowledge is crucial to fostering a more diversified and informed investment landscape.

### **Review of Literature**

1. Amudha and Mugel, 2024 explore how the increase in digital mediums and development in mobile application technology increasingly influence investors to use mobile trading apps. Investors also seem to rely on the financial information provided by these apps themselves and the need for accuracy in the information made available. Personalized features and ratings provided by experts on apps also influence investor decisions and the paper stresses the need for accuracy as investors seem to trust the information provided on the apps and make investment decisions based on it.
2. Concall Analysis, 2025 highlights the role of technological advancements like AI-driven trading platforms and data analytics have played in making investing more accessible for retail investors. UPI based IPO applications and T+1 settlement cycles have made trading more accessible for investors. Zero cost brokerage models like Zerodha along with their user-friendly app interface have made investing possible and affordable for any investor with access to an ordinary smartphone and data connection. Rise of apps like Groww and Upstox have attracted a large number of retail investors who can choose their preferred broking app based on personal preference.
3. Alice Blue, 2025 talks about the influence of social media on investment decision-making. Social media influences market trends by fuelling investment sentiment and rapidly disbursing information when any company-specific or economic event takes place. While there are associated positive effects, the article also highlight increased risk of volatility and misinformation caused as a direct impact of this influence.
4. Jaiswar, 2023 in her article on the online platform Kuvera's survey revealed that nearly 1.6 million respondents preferred investing in FDs due to the safety and volatility protection associated with them. They also found FDs to be a safe option when it came to beating market volatility and inflation. A good 23% of respondents also found FDs to be an effective medium for the parking of emergency funds. This article highlighted the reputation of FDs as a safe option for investors, and how investors typically looked at Fixed Deposits as the safest option when it came to parking funds. It was interesting to note that safety was a bigger priority for investors compared to returns.
5. Sharekhan Blog, 2024 in their article highlights the factors driving the surge in retail investors increasingly opting to invest in the stock market. Younger investors are increasingly diverting away from traditional investment options and instead using their income to dip their toes in the stock market. The presence of a stable central government is providing reassurance to investors and this is driving a further surge in investors rapidly entering the stock market. Further, measures taken by SEBI such as restrictions on credit to be used for stock market participation are preventing investors from falling into debt traps and in turn making investors perceive the stock market as a safe source for investment.

6. In Tyagi, 2024, an interview with Mr. Vineet Agrawal, the co-founder of a SEBI-registered online bond platform, highlighted the growing prominence of having a robust bond market in India. Mr. Agrawal offers insights on how HNI investors go about crafting their portfolios, and their increased allocation to alternative investment options gives them access to a diversified, well-balanced portfolio compared to retail investors, who are biased toward equity options and Fixed Deposits. He also highlighted that the innovation in digital platforms, government initiatives and steps taken by SEBI to increase liquidity signal a bright future for retail participation in bonds.

### Research Gap

Despite the existing strong preference for fixed deposits and a growing interest in IPOs among retail investors, there is a notable absence of academic literature exploring Non-Convertible Debentures (NCDs) as an investment avenue for this demographic. Existing studies primarily focus on IPO oversubscriptions, investor sentiment, and fixed-income securities like fixed deposits in broader contexts but fail to examine the limited participation of retail investors in NCDs or the factors influencing this neglect. Additionally, while IPO marketing strategies are well-documented in industry reports, there is no research on how these strategies can be adapted to promote NCD awareness and adoption. This study addresses these gaps by analyzing the factors influencing IPO and FD investments and applying these insights to propose a conceptual model aimed at increasing retail investors' engagement with NCDs.

### Objectives

1. To examine the reasons why NCDs are seen as an unappealing investment, in spite of the relatively high level of security it provides compared to equity investments.
2. To assess how investment trends are influenced by the prevailing popular trading platforms (Zerodha, Groww, Upstox, ICICI Direct, and Kotak Securities).
3. To put out a conceptual framework for raising NCD accessibility and awareness that makes use of fintech platforms, financial education, and government assistance.
4. To make recommendations for financial communication and marketing tactics that mimic the achievements of IPO subscription campaigns for NCDs.

### Research Methodology

The Methodology for this paper uses Exploratory and Conceptual research. The reasons behind using these two specific methods can be explained as below.

- **Exploratory Research**

Exploratory research is a research methodology approach that investigates research questions that have not been studied in depth previously. As this topic is not well-documented in academic literature, a thorough secondary analysis can be used to develop a deeper understanding of the core idea.

This methodology fits the study due to the following reasons-

- 1) **Lack of Extensive prior research:** A thorough analysis of research databases and other secondary sources reveal a prominent research gap when it comes to the reasoning behind the growth of IPO subscription numbers as well as retail investor participation in non-convertible debentures. This paper seeks to bridge this gap by exploring these phenomena and using the insights gained to propose a relevant novel model.

- 2) **Identifying behavioural patterns:** This research aims to identify the behavioural patterns that drive investors towards FD and IPO investing and how these patterns can be understood and replicated to drive subscription numbers in non-convertible debentures.
- 3) **Secondary Data:** This paper does not depend on primary sources but rather uses relevant secondary data sources such as newspaper articles, blogs and websites to extract meaningful conclusions.
- 4) **Flexibility to explore new perspectives:** Rather than developing a hypothesis and using quantitative methods to test its validity, exploratory research allows the researcher to ask open-end questions to develop insights more dynamically.

- **Conceptual Research**

Conceptual Research is a research methodology to study abstract ideas or concepts. The goal of conceptual research is to gain a better understanding of complex topics and clarify ambiguous ideas. As the researcher plans to propose a new model based on existing knowledge and logical reasoning, a conceptual research framework is the ideal method to follow.

This methodology fits this study due to the following reasons-

- 1) **Developing a new financial model:** This paper aims to propose novel strategies to increase retail investor awareness and participation in non-convertible debentures. Conceptual research allows me to utilize existing financial strategies, marketing principles and behavioral patterns to propose a novel and innovative approach.
- 2) **Bridging the knowledge gap:** This study explores existing strategies that were implemented to drive IPO and fixed deposit participation and how these strategies can be modified and implemented to drive retail investor participation in non-convertible debentures. Conceptual research provides the right framework that can be implemented to bridge this gap.
- 3) **Focus on Interpretation:** Instead of numerical hypothesis, this paper emphasizes interpretation by exploring strategies that have worked for IPOs and FDs and modifying them to suit the unique nuances in NCD-investing. Future financiers can leverage this knowledge to drive retail investors participation in NCDs.

## **Analysis and Discussion**

- **Recognising the Preferences of Retail Investors**

Due to their perception of risk, expectations for returns, and ease of access to investment platforms, retail investors in India show a strong preference for FDs and IPOs. The following important factors are highlighted by the literature review's insights:

- **The Safe Haven: Fixed Deposits (FDs)**

**Perceived Safety:** Because of their set returns and government backing, FDs are often thought of as a safe investment choice. According to the Kuvera study, investors place a higher value on safety than maximising returns (Jaiswar, 2023).

**Liquidity and Accessibility:** Although there are fees associated with withdrawals, investors can readily take money out of FDs, giving them a sense of financial autonomy.

**Insufficient Knowledge of Alternatives:** A large number of investors do not actively look for alternative debt products, as FDs are readily available when it comes to fixed income options.

- **IPOs: The Temptation of Quick Profits**

**Speculative behaviour and herd mentality:** The 2023 IPO oversubscription rate of over 60% indicates that investors are more interested in listing returns than in long-term fundamentals. When making decisions, the Grey Market Premium, or GMP, has a significant impact.

**Accessibility through Fintech Platforms:** The emergence of mobile trading applications like Groww, Upstox, and Zerodha (Concall Analysis, 2025) has made it easier for retail investors to participate in initial public offerings (IPOs) by streamlining the application process.

**Perceived High Returns:** Retail investors frequently ignore the underlying dangers involved with stock investing because they equate initial public offerings (IPOs) with short-term rewards.

- **A Neglected Asset Class: Non-Convertible Debentures (NCDs)**

Even though NCDs have lower risk than equity and higher yields than FDs, individual investors tend to overlook them. The following factors are responsible for this neglect:

**Lack of Knowledge & Financial Literacy:** NCDs receive less marketing and financial education than FDs and IPOs.

**Liquidity Issues:** Because of the low level of retail involvement in the secondary bond market, NCDs are thought to be illiquid.

**Lack of Institutional Promotion:** NCDs are not given much attention, whereas banks and mutual funds actively market FDs and IPOs.

- **The Function of Digital Trading Platforms and Fintech**

Retail investor behaviour has been greatly impacted by the incorporation of fintech platforms into investment decisions. According to the analysed studies, mobile trading apps have changed how people invest:

**User-Friendly Interfaces & AI-Driven Insights:** Fintech platforms make IPOs and stocks more attractive by offering tailored investment recommendations (Amudha & Mugil, 2024).

**Smooth Application Procedures:** Real-time trading and UPI-based IPO applications have eliminated earlier obstacles to entrance (Concall Analysis, 2025).

**Social Media & Influencer Impact:** According to Alice Blue (2025), social media platforms have a significant impact on investing patterns. This influences IPO participation, but it does not always result in logical investment decisions.

### **Proposed Conceptual Model**

It is critical to comprehend and understand why investors pick IPO and FD investment options over NCDs. Investor decisions are influenced by the following factors:

- While FDs are perceived to give risk-free stable returns and safety and IPOs are credited with short term gains, NCDs are disregarded in spite of their long term income-generating potential due to a lack of awareness on this investment avenue.
- FDs and IPOs enjoy strong marketing and awareness campaigns by trusted names in the banking and mutual fund industry but such a robust strategy is missing in the NCD space resulting in these issues not being well-known.
- Investors frequently follow trends when it comes to IPO subscriptions, but a lack of peer influence on NCD subscriptions means that these offerings often get ignored. This is due to the availability of metrics like GMP and subscription numbers that make it easy to follow IPO offerings. Similar metrics are missing in NCD issues, making it difficult for investors to track or even understand these offerings at a glance.

- IPOs and FDs have a simple exit route (there are penalties applicable in FDs, but the exit is still quick). NCDs, on the other hand, are often thought to be illiquid due to the lack of robust trading platforms.

After careful consideration of these factors, the researcher suggests the following 3 step model for increasing retail investor awareness and participation in Non-Convertible Debentures:

### **Step 1: Major Trading Platforms' Contribution to Raising Accessibility and Awareness of NCDs.**

Incorporating NCDs into traditional retail investing can be greatly aided by large internet brokers and bank-backed platforms:

#### **1) Groww, Upstox, and Zerodha:**

- Since these platforms boast a strong user base, they can expand their services by curating a special section for bond investments that includes NCDs with important metric such as risk ratings, repayment history and security cover.
- Expansion of NCD investments can be encouraged by implementing tools that have been successful for investment vehicles like mutual funds, such as fractional investments. (like in SIPs)
- Offer webinars and instructional materials that describe the taxation, benefits, and structures of NCDs.

#### **2) Kotak Securities, ICICI Direct, and Other Bank-Directed Platforms:**

- As with IPO subscriptions for HNIs, provide preference NCD placements to current clients.
- For systematic NCD investing, offer auto-debit investment plans.
- Collaborate with SEBI and push for T+1 settlement for NCDs that are traded in order to increase retail participation and liquidity.
- Provide tax-efficient investment strategies, maybe tying NCDs to investment schemes that save money on taxes.

### **Step 2: Marketing Strategy and Financial Communication**

Marketing tactics that were successful for IPOs and FDs should be replicated and adjusted to raise awareness and involvement in NCDs:

- **Simplified Metric Indicators:** A standardised measure for NCD attractiveness (yield potential, issuer credibility, and historical performance) can be created, much like Grey Market Premium (GMP) affects IPO subscriptions.
- **Social Media & Finfluencer Campaigns:** Use social media platforms (Instagram, Facebook, YouTube) and financial influencers to create content that focuses on demystifying NCDs as an investment avenue.
- **Simplified Onboarding & UPI Integration:** Similar to initial public offerings (IPOs), incorporating NCD investments into trading apps (such as Zerodha, Groww, and Upstox) with UPI-based fast applications can increase participation.
- **Risk-Return Transparency:** Create campaigns that offer organized comparisons of NCDs with mutual funds, FDs, and initial public offerings to emphasise the features and nuances of NCDs and drive awareness.

### **Step 3: Mechanism for Institutional and Regulatory Support**

- **Campaigns for Investor Awareness:** Like the “Mutual Funds Sahi Hai” campaign run by AMFI and “Jankaar Baniye, Sathark Rahiye” campaign run by RBI, a trusted regulatory body such as SEBI can run an NCD-focused campaign that can increase retail investor awareness and trust.

- T+1 Settlement for Traded NCDs: Facilitating quicker trade settlement on exchanges to increase liquidity.
- Tax Breaks and SIP Participation: To draw in long-term retail investors, NCDs can be promoted as a systematic investing option similar to SIPs. This can encourage retail investors to have more debt allocation in their portfolio while promoting a disciplined approach.

### **Findings, Suggestions and Conclusions**

Important revelations showed that:

- Despite their less-than-ideal returns, FDs are still seen by retail investors as a secure and reliable investment.
- Short-term listing advantages, driven by ideas like Grey Market Premium (GMP) and aggressive financial marketing, have driven up the popularity of IPOs
- Despite having lower risk than stocks and higher returns than FDs, NCDs are nonetheless underutilised because of a lack of knowledge, a perception of their illiquidity, and insufficient marketing.
- Although digital trading apps and fintech platforms are important in influencing investor choices, they do not yet give NCD accessibility the same priority as stocks and mutual funds.
- To close the knowledge gap and encourage participation, NCDs can benefit from the adaptation of marketing and financial communication tactics used for IPOs and FDs.

In order to improve retail investor knowledge and engagement with NCDs, this study presented a conceptual model that makes use of fintech platforms, financial marketing strategies and provides a mechanism to publicise the regulatory support that NCDs already enjoy in a bid to increase retail investor trust in this financial instrument.

### **Recommendations for Financial Institutions**

Financial advisors, fintech companies, banks, and regulators must work together if NCDs are to become widely accepted by individual investors. A route to accomplishing this is outlined in the recommendations that follow:

#### **1. Financial Institutions' Function (Banks & Brokers)**

- A specific NCD investment area with risk ratings, predicted yields, and historical performance data should be established by major trading platforms such as Groww, Upstox, ICICI Direct, Kotak Securities, Zerodha and others.
- Systematic NCD investment plans, similar to mutual fund SIPs, ought to be implemented to allow ordinary investors to make disciplined and regular investments.
- For traded NCDs, T+1 settlement cycles ought to be used in order to increase liquidity and attract individual investors.

#### **2. Regulatory Bodies' Role (SEBI, RBI)**

- To inform investors about the advantages of NCDs, SEBI-backed awareness initiatives akin to the Mutual Funds Sahi Hai program ought to be started.
- To increase their competitiveness against FDs, tax incentives for NCD investments could be implemented.

#### **3. The function of digital trading apps and fintech platforms**

- Trading platforms could incorporate AI-powered investment suggestions to assist investors in finding NCDs according to their risk tolerance.



- To make it easier for investors to make decisions, a GMP-like indicator for NCDs should be created that takes into account variables such return potential, issuer credibility, and historical performance.
- To increase accessibility, UPI-based seamless NCD subscription systems akin to IPO applications ought to be implemented.

#### **4. Financial Marketing and Communication's Role**

- To demystify NCD investing, social media and influencer marketing should be used.
- Trading platforms should provide transparent risk-return comparisons between FDs, IPOs, and NCDs so that people may make well-informed decisions.
- Investor confidence in NCDs as a reliable, high-return substitute for conventional fixed-income instruments can be increased through collaborations with wealth advisors.

#### **Directions for Further Research**

Although this study offers a conceptual framework for raising NCD knowledge and engagement, more investigation is required to confirm the suggested model's efficacy empirically. Future research might:

1. Measure changes in NCD adoption rates following the implementation of fintech-based accessible measures by conducting experimental studies and investor questionnaires.
2. Examine case studies of effective NCD awareness programs from the real world and contrast them with FD and IPO marketing tactics.
3. Examine investor psychology more thoroughly, paying special attention to how retail investors' asset allocation choices are influenced by their perceptions of risk and liquidity.
4. Examine how retail investor involvement in fixed-income instruments, such as NCDs, is affected over the long run by digital trading platforms.

NCDs can become a popular investment option for retail investors by closing the awareness gap and putting fintech-driven solutions into place. This will help retail investors as well as the issuers of these securities and promote a more positive and comprehensive fund-raising and investing landscape in India.

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**ROLE OF EMERGING TECHNOLOGY FOR ENTREPRENEURSHIP****Asst. Prof. Laxmi Vishwakarma***Shankar Narayan college of Art and Commerce Bhayandar East*

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**Abstract**

*The Emotional Change of Culture in Developing Countries: New Technologies New technologies are one of the most obvious parts of the emotional change of culture in developing or developed countries. This trend will generate great opportunities for firms as well as pose threats of emergent agencies seeking to obtain a competing edge in the enterprise. The emerging technologies can be of substantial help to the organisations to explore the newly emerging potential markets. The current study aims to analyze the role of emerging technologies on the sustainability and growth of the enterprise. The research has gathered the critiques of different researchers concerning the employ of advanced technologies by the organizations to gain the competitive advantage. This was a descriptive study and used the secondary data. Data from the study indicates that the most significant technologies for the enterprises have been AI, robotics and drones, 3D Printing, serverless computing, block chain, etc, because they have completely transformed the traditional enterprise operating model*

**Keywords** *Emergent technologies, entrepreneurial firms, challenges, competitive,*

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**INTRODUCTION**

Post Digitalization, India entrepreneurship has undergone a paradigm shift because of the advent of advanced technologies like Blockchain, Artificial Intelligence and Internet of Things. These technologies not just paved the way for businesses to move to be more sustainable but also in enabling innovative, efficient and scalable businesses. Overcoming several challenges, many start-ups have turned to Machine Learning (ML) and Artificial Intelligence (AI) to aid predictive analysis, consumer behaviour analysis and marketing strategies. AI has also been of great assistance to these businesses through its advices on product recommendations, supply chain management and day-to-day running of operating activities. Revolutionizing Blockchain technologies might have also empowered the entrepreneurs by lessening intermediaries, promoting transparency and lower fraud. Many Indian blockchain startups have hampered traditional practices by providing security such as trading, identity testing. The Internet of Things (IoT) enables entrepreneurs in many ways, increasing business efficiency. Augmented Reality (AR) and Virtual Reality (VR) also supported startups in a variety of fields, including the development of agriculture, architecture and interactive training modules. Robotics and automation have helped reduce labour costs and at the same time improve accuracy, production and security. This will make entrepreneurs more competitive in the global market. 5G technology can also unlock new possibilities such as the self-driving car business, remote healthcare services, and more. All of these technological advancements have created many options for entrepreneurs

**Literature Review**

**Laužikas & Miliūtė (2021)**, examines the role of modern technology for entrepreneurship in both the long term and the short term. This study concludes that adapting to modern technology is important to ensure greater success in entrepreneurial projects. This study provides modern technical equipment and practices in the curriculum to ensure that countries with strong education systems are up to date with the population in practical and industrial knowledge that is also an individual entrepreneurial skill. It suggests that you should focus on doing it. The study states that entrepreneur education can help ensure synergies between different stakeholders and business sustainability.

**Bange et al. (2019)** found in their research that online social media platforms began developing brand structures and brand loyalty. Through new exchanges of ideas, revealing model updates, and receiving stunning responses, business vision can further influence hierarchical information and contribute to improving value creation by creating products.

**Hidayanti et al. , 2018;** Kane, her research through her exchange of ideas, model updates, and receiving stunning responses, business visionaries further influence hierarchical information and create value creation by creating products. It can contribute to improvement.

### **OBJECTIVES**

- Explore many reasons why emerging technologies are supported.
- Exploring the role of these technologies in various entrepreneurship.

### **Emerging Technologies in Entrepreneurship**

#### ***Internet of Things (IoT)***

IoT can be defined as the connection of various interconnected machines, devices, or elements that receive distinct identifiers. It also has the ability to transfer data from a system/machine to another system/machine without the need for some kind of human failure. IoT provides organizations with framework conditions work. It conveys detailed knowledge ranging from machine presentations to logistics operations and supply chains. IoT offers many advantages in almost every area. Some are industry-specific, some are generally business processes monitoring, improving customer experience, increasing employee productivity, integrated and assumptions, and better decision-making. Manufacturing and generating more revenue (Schwab, 2016).

#### **Artificial Intelligence (AI)**

AI has changed the organization's work patterns. It influenced patterns of customer cooperation with the organization through bots and smart websites. These tools are effectively tailored in your daily work. AI hopes to impact every industry, from retail to healthcare, data security, speed and accuracy of decision making, and hospitality for fundraising by improving employee performance and training It's been done. Investing in AI allows companies to use the benefits of reduced costs. It is also expected that the system will facilitate the development of many advanced applications for the treatment of various business questions. This leads to business approval by enabling complex operations.

#### **5G System**

5G also allows business speed to be productive and improves the preferences of early movers. These robotized IT conditions offer a variety of benefits, including reducing daily operations, allowing businesses to use their resources to improve additional capabilities, including additional value. Serverless computing is a new innovation along with robotics, an alternative to automation and processing (Rayome, 2019)

#### **Serverless Computing**

Serverless processing allows associations to robotize conditions. These robotized IT conditions offer a variety of benefits, including reducing daily operations, allowing businesses to use their resources to improve additional capabilities, including additional value. Serverless computing is a new innovation along with robotics, an alternative to automation and processing (Rayome, 2019)

#### **Block Chain**

Blockchain Today we use blockchain innovations from numerous business associations, ranging from accounting to management consistency to other activities. Unmistakable, intangible and complex resource management is easy and capable of supporting blockchain innovation. For example, resources

can be tokens, segregated, and acquired at negligible safety concerns and board costs. This is often a concern about liquidity and risk disorders. Using blockchain when managing your finances can also help to promote ways to deal with instalments and cash progress. There are many other creative ways to use a corporate blockchain to smooth development. Once the acquisition innovation is acquired, approved members can simultaneously reach similar data safely and effectively (Attaran & Gunasekaran, 2020). Using blockchain technology for supply chain management allows businesses to pursue and simplify complex, geographically broad supply chains.

### **Robotics and Drones**

The digitization of various components within the supply chain has enabled the actual tracking of operations and elimination of knots within the supply chain. The close term used in drones lies in the field of inventory management. Automation is provided for value in distribution centers. Imagine using a drone to run the entire storage room and sweeping scanner tags for available stocks. Drones can be seen in a shorter time period compared to groups of people. These stock-controlled drones are flying around to secure 100% existing courts, with self-stable trucks being pulled up into stacked socks, while self-secure forklifts empty them. Workers at human sales centres can be handed over to the gallery. The robotics and drones that replace people are not completely new. This technology has long replaced people, and this has always helped entrepreneurs record growth and minimize costs (Marion, 2019).

### **3D Printing**

3D printing was adopted by second research, economic fantasies, experts, monster industrial plants. 3D printing has decided to provide extensive displays for employees as important articles consider advanced planning changes (Gewirtz, 2019). Business success. However, only 29% of companies were able to use the big data potential by converting their analytics into actions. Big data is extremely important for developing new offers for existing or new brands apart from the fact that it can achieve the greatest potential of marketing efforts. Companies can gain insight into customer preferences through analysis, thereby achieving maximum benefits and providing products to optimize market share. Genet Test Companies such as 23andme, Map My genome, and ancestors are the result of a massive revolution (Forbes india, n.d.). These companies analysed the location of their data to convey a deeper understanding of inheritance and health to their customers.

### **Metaverse**

With the advent of Metaverse and its acceptance as a popular term, companies have provided a variety of new outlooks for innovation in technology and business models. Although the definition is different, metaverse is characterized as a large, interoperable network in a real-time 3D virtual world, and can be experienced synchronously and sustainably by an effective, infinite number of users (Ball, 2021). Analysis of the socioeconomic impacts of the virtual world has become more important (Wang et al., 2022). This includes not only large technology companies such as Meta, Microsoft, and Tencent, but also small and medium-sized businesses and startups (Rizvan Ovi et al., 2023).

### **Business Application of New Technologies**

Entrepreneurship is a process in which new economic activities and organizations emerge. Digital entrepreneurship refers to a new trend in entrepreneurship and has proven to be the introduction of digital technology. Digital entrepreneurship is predicted to play an increasingly important economic and social role for promoting innovation, creating jobs and economic growth. Politicians, for example, recognize the relevance of digital technology for entrepreneurship to promote entrepreneurship in general, and recognize the use of digital technology in particular for such efforts. . AI is used in e-

commerce platforms to create personalized proposals, optimize supply chains, and provide chatbot-controlled customer support. India's Smart City Plan includes AI for traffic regulations, energy optimization and public security to promote sustainable city growth. In education, AI offers personalized learning experiences and reviews to meet the diverse needs of students. The e-commerce platform uses AI for personalized proposals. Overall, AI and robotics play an important role in increasing productivity, creativity and social health in various trade sectors in India.

### **The Role of New Technologies in the Spread of New Businesses**

Technology paves the way for development. Application of new technology in business is the need of the hour. Business is becoming more tech savvy with the passage of time. Innovation largely affects business tasks. Regardless of the size of the organisation, technology can bring myriad benefits that will assist the business for expanding and developing the products as per the client's requirement. The fundamental part of technology in business is to drive development and improve tasks. Without technology, organisations would in all likelihood neglect to achieve their targets (Westerman et al., 2014). The digital economy has offered ascend to various innovative business models. Present day advancements in information technology have fostered conduction of numerous businesses at a remarkable scale without any hindrance of location or distances.

Technological improvements have dramatically impacted India's startup scene, encouraging creativity, scalability and market disruption. The availability of cutting-edge technologies has reduced entry barriers for entrepreneurs, allowing the formation of startups in a variety of industries. Cloud computing, for example, has provided low-cost infrastructure solutions, allowing businesses to scale operations without making large upfront investments.

Advancements in digital payment systems and blockchain technology have opened the way for innovative financial solutions and inclusive banking services, transforming the way transactions take place in the fintech sector. Machine learning and data analytics provide entrepreneurs with useful information for strategic decision-making, consumer profiling and personalised offerings, hence increasing competitiveness.

Remote cooperation is also made easier by technological solutions, allowing startups to form internationally distributed teams and access talent pools that are not limited by geography. Mobile technology has played a critical role, particularly in the health tech and edtech sectors, by democratising access to healthcare and education via innovative apps and platforms.

Furthermore, the rise of AI-powered automation has simplified processes, lowered costs and increased efficiency for startups. In India, where different issues coexist with vast opportunity, technological improvements serve as a catalyst, allowing companies to address local needs with scalable and sustainable solutions. Overall, technology is critical to the development and growth of Indian businesses, promoting a vibrant entrepreneurial ecosystem.

### **The Role of New Technologies in Entrepreneurial Decision-making Process**

The momentum of technological development has added approximately crucial adjustments in human beings's lifestyles and work. it's miles affecting all disciplines, economies and agencies, perhaps none greater than production, and how, what, why and wherein human beings produce and supply products and services. conventional production strategies have been replaced for a much wider outreach that has never been notion of before— beginning from records starting place, item composition, manufacturing and eventually reaching the patron. innovative changes had been introduced approximately in phrases of economy, return and reuse. Accomplishments in key areas are changing the future of formation,

inclusive of robotics, the IoT, energy storage, biotechnology, self governing vehicles, AI, nanotechnology, materials technological know-how, 3-d printing and quantum computing. in any case, unique information at the really worth and risks that generation could make for businesses and countries isn't always broadly subtle. business leaders, the overall populace, authorities' pioneers might income with the aid of simply gaining an insight in to availability and adoption of current era, and their integrate impact on man or woman industry, corporations, organizations and the society. Policymakers and businesses will apprehend the difference among immoderate cases or exposure and reality, and will be capable of determine sound enterprise investments and coverage choices (Kearney, 2017)

#### **The role of new technologies in the growth and development of entrepreneurial companies:**

The changing scientific institutions of research and capabilities for the introduction of innovative products and services is a key feature of technological entrepreneurship. This change will provide buyers along with the outstanding benefits of economic development by ensuring strong and synergistic relationships that meet the economy, and technology entrepreneurship in terms of real creative solutions, as well as market services. and guarantees the environment (Bhardwaj, 2019). Certain innovation is one of the most important factors and expanding validity of existing companies. Also, today's organizations allow for variable advantages through beneficial outcomes, such as (Cassiman et al., 2010; Rosenbusch et al., 2011), to improve quality and livelihoods, and It can limit costs and increase customer reliability. , Internationalization of tasks in tasks, modernization of management processes and techniques (Mukherjee, 2018)

#### **Conclusion**

world is growing day by day in terms of era. every 12 months new technology comes and it directly or indirectly impacts the entrepreneurial corporations. technologies, including AI, Robotics and Drones, 3D Printing, serverless computing, block chain and others have been recognized as most sizeable technology for the accomplishment of the desires of the entrepreneurial firms. those technology have enabled the companies to trade their conventional way of working, manufacturing, selling and others. Many huge and reputed firms like IBM follow the approach of heavy investment in the growing nations like China and India. those corporations accept as true with in forming new ventures with their stake inside the equity. the new ventures function efficaciously with the help of disruptive era (Sarason et al., 2006; Smith & Sharif, 2007). both huge and small corporations can make use of the emergent technologies for development of competencies which cross a long way in allowing the corporations to advantage competitive edge in the unsure marketplace situation.

don't forget the Indian economic behemoth Paytm, which has used emerging technology along with cell systems, AI and virtual wallets to convert digital payments. Paytm's narrative exemplifies how generation innovation can meet local market needs at the same time as simultaneously positioning a agency on a global scale, demonstrating the transformative impact of emerging technology within the entrepreneurial area.

in precis, the capacity to soak up and use emerging technology is becoming increasingly more vital for the fulfilment of Indian entrepreneurial endeavours. As these businesses negotiate the ever-changing business landscape, the strategic use of cutting-edge era stays a defining function in their pursuit of long-term innovation and marketplace management.

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## MANAGING MISINFORMATION AND DATA ETHICS: THE ROLE OF DIGITAL PLATFORMS

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### Abstract

*The digital era has given customers more control with unprecedented Information accessibility, enabling informed decision-making and brand interactions. However, this empowerment presents difficulties as well, especially with regard to misinformation and ethical concerns regarding consumer data. Misinformation, including fake news and misleading product reviews, influences consumer trust and decision-making, while concerns over data privacy highlight the need for transparent data handling by digital platforms.*

*This study focuses on examining the relationship between consumer empowerment and susceptibility to misinformation, the effect of transparent data handling on consumer trust, and the effectiveness of platform-driven consumer education initiatives. A quantitative research approach is employed, surveying 300 frequent users of digital platforms through structured questionnaires. Statistical techniques, including correlation and regression analysis, are utilized to analyse the data.*

*Findings indicate a significant relationship between consumer empowerment and misinformation susceptibility, with digitally literate consumers showing greater awareness but still being exposed to misleading information. Transparency in data handling practices has a statistically substantial yet minor impact on consumer trust, implying that other elements have an impact on perceptions of data security. Moreover, consumer education initiatives positively correlate with reduced susceptibility to misinformation and unethical data practices, Emphasising the value of awareness programs in strengthening digital literacy.*

*The investigation comes to the conclusion that although digital platforms play an important role in shaping consumer behaviour, improving transparency and consumer education is essential to mitigating the risks connected with misinformation and data misuse. These revelations have important ramifications for policymakers and digital platforms in fostering a trustworthy and informed digital environment.*

**Keywords:** Consumer Empowerment, Misinformation, Digital Platforms, Data Transparency, Consumer Trust, Digital Literacy.

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### 1. Introduction

The era of digital technology has transformed how consumers access information, make purchasing decisions, and engage with brands. Through social media, e-commerce, and various digital platforms, consumers are empowered having an abundance of data that shapes their behavior and choices. However, alongside this empowerment comes new challenges, particularly the spread of misinformation and concerns over the ethical use of consumer data. False information, including fake news to misleading product reviews, can greatly affect customer trust and decision-making. Furthermore, the ethical handling of consumer data is becoming a growing concern as consumers become more aware of how their personal information is collected, stored, and used by digital platforms. While the empowerment of consumers is often seen as a positive development, the increased access to information can sometimes lead to unintended negative effects, particularly in an age where misinformation spreads quickly across digital platforms. This paper seeks to investigate The ways in which digital platforms can lessen these adverse impacts by focusing on three key objectives: understanding the relationship between consumer empowerment and vulnerability to misinformation, examining the role of transparent data handling practices, and assessing the effectiveness of consumer education initiatives in reducing the risks of misinformation and unethical data use.



## 2. Review of literature:

**Sagar, S. (2024).** The Impact of Digital Transformation on Retail Management and Consumer Behavior: This study investigates how digital transformation has reshaped retail management and consumer behavior. It covers key topics such as omni-channel retailing, data-driven decision-making, and the incorporation of emerging technologies. The study emphasise the challenges faced by traditional retailers and the evolving expectations of digital consumers.

**Yao, L. F. (2024).** How Does Sustainable Digital Marketing Affect Consumer Behavior? This paper explores the intersection between consumer behaviour and sustainable digital marketing. It focuses on how sustainability messaging can shape consumer actions and drive awareness. The study employs correlation analysis to reveal how sustainability influences consumer decision-making, highlighting the importance of transparency and education in marketing strategies.

**Singh, P., Khoshaim, L., Nuwisser, B., & Alhassan, I. (2024).** How Information Technology (IT) Is Shaping Consumer Behavior in the Digital Age: This systematic review analyzes the impact of information technology on consumer behavior, employing the PRISMA methodology. The paper identifies key themes such as technological diffusion, disruptive consumer behavior, and IT's role in shaping consumer decisions. It emphasizes the transformative power of IT in the digital marketplace and suggests future research directions

**Khalifa, A., & Ben Ali, O. (2023).** Consumer Behavior in the Digital Age: This paper explores how social media engagement, pet product marketing, and EdTech adoption intersect and influence consumer behavior in the digital age. The authors argue that consumers are more informed and socially connected than ever before, and this has a profound impact on their purchasing decisions. The study concludes that digital platforms play a crucial role in shaping consumer preferences and behaviors.

**Abouraia, M. K., & Al Morsey, R. M. (2021).** Consumer Behavior in the Digital Age: This research focuses on the online shopping habits of consumers and investigates how price elasticity influences their purchasing decisions. The study uses empirical data to explore the factors that drive consumer behavior in online markets, particularly in relation to price sensitivity and consumer response to promotions. It concludes that price elasticity is a significant determinant of online purchasing patterns.

**Saura, J. R., Reyes-Menendez, A., Matos, N., & Correia, M. (2020).** This article explores the dynamics of consumer behavior in the context of digital environments. The study delves into the influence of digital platforms, such as social media, on consumer decision-making and purchasing behavior. It also examines the role of online reviews and digital marketing in shaping consumer preferences

**Rösner, A., Haucap, J., & Heimeshoff, U. (2020).** The Impact of Consumer Protection in the Digital Age: This working paper examines the effects of the Unfair Commercial Practice Directive (UCPD) on consumer trust and behavior within the European Union. The study finds that the introduction of the UCPD significantly improved consumer trust and cross-border purchases in countries with lower levels of consumer protection prior to the directive. It also highlights the increasing relevance of consumer protection in the digital age and the importance of harmonized regulations.

**Hunjet, A., Kozina, G., & Vuković, D. (2019).** Consumer of the Digital Age: This review paper discusses how the digital presence has transformed consumer behavior, particularly with the rise of social media. It highlights that modern consumers are more informed, active, and demanding, with social media playing a critical role in shaping their purchasing decisions. The paper emphasizes the importance of online marketing strategies in engaging consumers in the digital age.

**Halttunen, Veikko (2016).** Consumer Behavior in Digital Era: This dissertation investigates consumer behavior in the context of digitized societies, particularly in relation to digital music. It highlights the persistent issue of digital piracy despite the introduction of commercial alternatives such as streaming services. The thesis employs a multi-method approach to analyze consumer behavior and concludes that digital natives exhibit unique behavior in the consumption of digital products. The study suggests that societal-level analysis is necessary to fully understand the characteristics of modern digital-age consumer behaviour.

**Ashman, R., Solomon, M. R., & Wolny, J. (2015).** An Old Model for a New Age: This paper explores whether the traditional Engel, Kollatt, and Blackwell (EKB) consumer decision-making model is still relevant in today's digital age, where participatory culture influences consumer behavior. The authors use two fictional scenarios to illustrate how digital culture affects the decision-making process. They conclude that while the EKB model remains useful, it requires minor modifications to fully capture the collective nature of modern online shopping

**Labrecque, L. I., vor dem Esche, J., Mathwick, C., Novak, T. P., & Hofacker, C. F. (2013).** Consumer Power: A theoretical framework for comprehending consumer behaviour is presented in this article. empowerment in the digital age. The authors explore how digital media, particularly social media, have shifted power from marketers to consumers. They identify four key sources of consumer power—demand-based, information-based, network-based, and crowd-based power—and discuss how these forces influence consumer behavior.

### **3. Objectives of the Study**

- 1. To evaluate the relationship between consumer empowerment and susceptibility to misinformation in digital environments.**
- 2. To assess the impact of transparency in data handling practices by digital platforms**
- 3. To investigate the effectiveness of platform-driven consumer education initiatives aimed at reducing the risks of misinformation and promoting responsible data usage.**

### **Hypothesis:**

**H0<sub>1</sub>:** There is no significant relationship between consumer empowerment and susceptibility to misinformation in digital environments.

**H1<sub>1</sub>:** There is a significant relationship between consumer empowerment and susceptibility to misinformation in digital environments.

**H0<sub>2</sub>:** There is no significant impact of transparent data handling practices by digital platforms on consumer trust.

**H1<sub>2</sub>:** There is a significant impact of transparent data handling practices by digital platforms on consumer trust.

**H0<sub>3</sub>:** Platform-driven consumer education initiatives do not reduce consumer susceptibility to misinformation and unethical data practices.

**H1<sub>3</sub>:** Platform-driven consumer education initiatives significantly reduce consumer susceptibility to misinformation and unethical data practices.

### **Research Methodology**

#### **1. Research Design:**

A **quantitative approach** will be used to assess relationships between consumer empowerment, misinformation susceptibility, and the impact of transparent data handling on consumer trust.

#### **2. Sampling:**

- **Population:** Active users of digital platforms.
- **Sample Size:** **300 respondents** selected via **stratified random sampling** based on demographics like age and digital literacy.
- **Inclusion Criteria:** Frequent digital platform users.

### 3. Data Collection:

- **Instrument:** An **online structured survey** with Likert-scale questions.
- **Measures:** Consumer empowerment, misinformation susceptibility, data transparency awareness, and consumer trust.

### 4. Data Analysis:

- **Software:** SPSS.
- **Techniques:** Descriptive statistics, **correlation** (for empowerment and misinformation), and **regression analysis** (for data transparency and trust).

### Data Analysis and Interpretation:

#### Descriptive Statistics

The descriptive analysis highlights key trends in consumer attitudes toward misinformation and data transparency:

- **Digital Literacy (Mean: 3.39)** – Respondents exhibited a moderate level of digital literacy.
- **Encountering Misinformation (Mean: 3.59)** – A significant portion of consumers frequently encounter misinformation.
- **Trust in Data Security (Mean: 3.08)** – Mixed responses indicate uncertainty about data security measures on digital platforms.
- **Platform Responsibility (Mean: 3.54)** – Consumers largely believe that digital platforms should educate users about misinformation and data privacy.

#### Correlation Analysis

The correlation matrix was used to examine the relationships between key variables:

- **Confidence in Finding Reliable Information & Transparency Preferences ( $r = 0.22$ ,  $p < 0.05$ ):** Consumers who feel confident in identifying reliable information prefer transparent platforms.
- **Encountering Misinformation & Data Transparency Importance ( $r = 0.25$ ,  $p < 0.05$ ):** Those frequently exposed to misinformation place greater value on transparency.
- **Digital Literacy & Educational Initiatives ( $r = 0.21$ ,  $p < 0.05$ ):** Higher digital literacy correlates with a stronger belief in the usefulness of consumer education initiatives.
- **Misinformation Susceptibility & Trust in Data Security ( $r = 0.008$ ,  $p > 0.05$ ):** No strong correlation, indicating skepticism about platforms' data security claims.

#### Regression Analysis

To assess the influence of data transparency on consumer trust, an ordinary least squares (OLS) regression was performed:

- **$R^2 = 0.014$**  – The model explains only 1.4% of the variance in trust in data security.
- **Coefficient = 0.1065,  $p = 0.044$**  – Transparency importance has a statistically significant but small positive effect on trust in data security.
- **Interpretation:** While consumers who value transparency trust platforms slightly more, other factors have a high influence on their trust levels.

### ANOVA: Education Level & Trust in Data Security

An ANOVA test was conducted to determine if education level significantly affects trust in data security:

- **F = 0.156, p = 0.960** – Not much of a difference in trust across education levels.
- **Interpretation:** Education level does not play a significant role in determining trust in digital platforms' data security measures.

### Conclusion

The findings indicate that while digital literacy and transparency are correlated with consumer behaviour, their effects on trust in data security are relatively small. Education level has little bearing on impact trust, suggesting that other factors (such as past experiences or platform policies) may play a more substantial role. These insights highlight the need for digital platforms to enhance transparency and consumer education to strengthen trust and combat misinformation.

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## RISE OF THE GIG ECONOMY: A REVOLUTION OR A STRUGGLE FOR WORKERS

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### *Abstract*

*The gig economy has reshaped the global labor market, offering flexibility and independence to millions of workers. However, it also raises critical concerns about job security, income stability, and access to benefits. This study explores the impact of gig work on workers' quality of life through a mixed-methods approach, combining survey data from 53 gig workers with a review of relevant research papers. The findings reveal that while gig work provides flexibility and income opportunities, it often lacks stability and benefits. The study concludes with actionable recommendations for policymakers and gig platforms to create a more equitable and sustainable gig economy.*

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### **1. Introduction**

The gig economy, which is defined by short-term contracts or freelance work facilitated through digital platforms, has become a dominant force in modern labor markets. It provides flexibility, independence, and potential financial rewards, attracting millions of workers globally. As more businesses turn to gig workers for tasks like ride-sharing, food delivery, content creation, and professional freelancing, this evolving labor model is increasingly challenging traditional employment structures.

Over the past decade, the gig economy has experienced rapid expansion, reshaping the way people work and earn money. In India, it is projected that the gig economy will reach \$455 billion by 2024, employing over 23 million individuals (NITI Aayog, 2021). Technological innovations, the rise of digital platforms, and shifting workforce preferences are driving this remarkable growth.

#### **1.1. Growth of the Gig Economy:**

- **Global Impact:** By 2025, the gig economy is expected to contribute \$347 billion to the global economy (Mastercard, 2020).
- **Gig Workforce in India:** India is one of the fastest-growing gig economies, with platforms like Uber, Swiggy, and Urban Company employing millions of people.
- **Demographic Trends:** Young workers (aged 18-34) make up 70% of the gig workforce globally (ILO, 2023).

Fueled by technological advancements and changing work preferences, the gig economy has seen explosive growth in the past decade. Reports from McKinsey (2023) and the ILO (2022) suggest that nearly 36% of the global workforce now participates in gig work, spanning industries from freelancing and ride-sharing to food delivery and home services. In India, platforms such as Zomato, Uber, and Urban Company have revolutionized labor markets by offering flexibility but also raising concerns regarding income instability and the absence of social security.

The gig economy raises concerns about economic stability, as gig workers, classified as independent contractors, lack the protections of full-time employment. Without employer-provided benefits like health insurance and retirement savings, they face financial uncertainty, compounded by fluctuating income. Beyond finances, gig work also affects mental and social well-being. The unpredictability of earnings increases stress, while the lack of workplace support and career growth opportunities can lead to emotional strain.

This study analyzes survey data from gig workers across sectors to assess income, job security, work-life balance, and benefits. It seeks to determine whether the gig economy empowers workers with flexibility or exposes them to greater financial and job insecurity. Findings will contribute to discussions on labor rights, fair wages, and gig worker protections.

## **2. Review of Literature**

To provide context for this study, an extensive review of existing research was conducted to examine both the advantages and challenges associated with gig work. Kalleberg and Dunn (2016) investigated the expansion of the gig economy in the United States, emphasizing its appeal due to flexibility while also highlighting the downside of job insecurity and the absence of employment benefits. Their findings indicated that nearly 40% of gig workers experience income fluctuations, which negatively impact their financial well-being. Similarly, De Stefano (2016) analyzed the legal and regulatory complexities surrounding gig employment, asserting that many gig workers are incorrectly classified as independent contractors. This misclassification prevents them from accessing crucial benefits such as health insurance and paid leave.

In a qualitative study of gig workers in New York City, Ravenelle (2019) discovered that while workers appreciate the autonomy gig jobs offer, they also face considerable stress and anxiety due to unstable employment conditions. Furthering this perspective, Schor et al. (2020) examined the well-being of gig workers and found that their job satisfaction is typically lower than that of traditional employees, mainly because of the lack of stability and employment benefits.. Shifting focus to India, NITI Aayog (2021) conducted a detailed analysis of the country's gig economy, recognizing its potential to generate employment and contribute to economic development. However, the study also identified pressing issues such as income instability, lack of social security measures, and substandard working conditions. Sarkar and Mehta (2020) specifically examined the gig work experiences of individuals employed in ride-hailing and food delivery services in India. Their findings suggested that despite the flexibility gig work provides, workers often face exploitative conditions and are deprived of essential employment benefits.

Rani and Dhir (2021) explored the participation of women in India's gig economy, concluding that while gig work fosters financial independence for women, it also exposes them to safety risks and workplace discrimination. Given that 40% of this study's participants are women, these gender-related concerns are particularly significant. Bhattacharya and Ghosh (2022) investigated the role of digital platforms in shaping India's gig workforce, stressing the urgent need for regulatory measures to safeguard worker rights. Collectively, these studies offer a comprehensive perspective on the gig economy, reinforcing the importance of policy interventions and structural reforms to enhance working conditions for gig workers.

### **2.2.Research Gap :**

While existing studies have explored the gig economy's impact on workers, there is limited research focusing on young gig workers in developing countries like India. Additionally, few studies have combined quantitative and qualitative data to provide a holistic understanding of gig workers' experiences. This study aims to fill these gaps by analyzing survey data from 54 gig workers in Mumbai and offering actionable recommendations.

### **2.3.Research Objective:**

- **To analyze the portfolio of gig workers** and understand their participation in the labor market.



- **To identify the key motivations** that drive workers to join the gig economy
- **To explore the connection between earnings and job satisfaction** to determine the financial stability of gig workers.
- **To compare work-life balance in gig employment** with that of conventional job structures.
- **To evaluate job security and access to employment benefits** across various categories of gig worker
- **To provide recommendations for policymakers** and gig platforms to improve worker conditions.

Based on the survey findings, here are the hypothesis for each key area of analysis:

#### **2.4.Hypothesis:**

##### **H1.Hypothesis for Income & Job Satisfaction :**

- $H_0$ : There is no significant relationship between income level and job satisfaction among gig workers.
- $H_1$ : Income level significantly influences job satisfaction among gig workers.

##### **H2. Work-Life Balance**

- $H_0$ : There is no significant difference in perceived work-life balance between gig workers and traditional workers.
- $H_2$ : Gig workers experience a significantly different work-life balance compared to traditional workers.

##### **H3. Impact of Gig Economy Growth on Workers' Live**

- **$H_0$  (Null Hypothesis):** The rise of the gig economy does not significantly improve worker's lives.
- $H_3$ : (Alternate Hypothesis) : The rise of the gig economy does significantly improve workers life

#### **3.Methodology:**

This study used a mixed-methods approach, combining quantitative data analysis with qualitative insights. A survey was conducted among 50 gig workers, focusing on their demographics, income, job satisfaction, and overall experiences. The data were analyzed using descriptive and inferential statistics, while open-ended responses were examined for recurring themes.

##### **3.1.Data Collection:**

Participants were asked a series of structured questions about their income, work hours, job satisfaction, and access to benefits. Open-ended questions allowed them to share their thoughts on what gig platforms could do to improve workers' lives and whether they would recommend gig work to others.

#### **4.Introduction to Data Analysis**

This section presents a detailed analysis of the survey data collected from 50 gig workers, focusing on income distribution, job security, work-life balance, financial stability, and health impact. Using descriptive and inferential statistics, we analyze various trends and apply hypothesis testing to determine whether the gig economy improves or worsens workers' lives.

##### **4.1.To understand the gig workforce, we examine age, gender, distribution.**

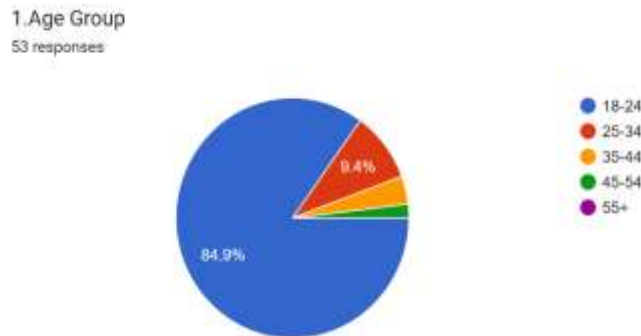
AGE GROUP	MALE	FEMALE	TOTAL
18-24	28	17	45
25-34	3	2	5



35-44	2	0	2
45-54	0	1	1
TOTAL	33	20	53

**Table.4.1.1.Age and gender distribution**

Source Researcher's own compilation

**Figure.4.1.2.Age group**

Source Researcher's own compilation

**4.1.2.Key Insights**

- Younger individuals (18-24 years) dominate the gig workforce (**85%**), indicating that gig work appeals primarily to students and early-career professionals.
- Freelancing (**60%**) is the most common form of gig work, followed by ride-sharing (**11%**) and food delivery (**6%**).
- The gender distribution is relatively balanced, though slightly male-dominated with **62%** male and **38%** female respondent.

**4.2 Income Distribution Among Gig Workers**

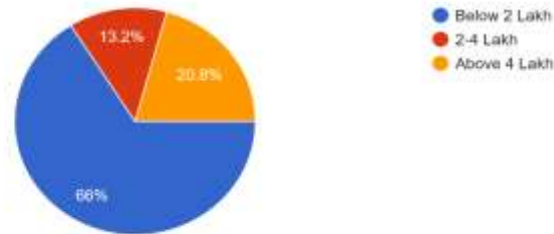
One of the biggest concerns about gig work is income stability.

**Table.4.2.1.Income distribution among different age and gender wise.**

ANNUAL INCOME	18-24		25-34		35-44		45-54	
	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
BELOW 2 LAKH	21	14	2	1	0	0	0	0
2-4 LAKH	2	2	1	1	0	0	0	0
ABOVE 4 LAKH	5	1	1	1	0	0	0	1
TOTAL	45		7		0		1	

Source Researcher's own compilations.

8.What is your annual income?  
53 responses



**Figure.4.2.1.Annual income**

Source Researcher's own compilations

A critical concern in gig work is financial instability. The survey reveals that **66%** of gig workers earn below 2 lakh annually, placing them in a vulnerable economic position. Another **13%** earn between 2-4 lakh, while only **20%** earn more than 4 lakh per year. These findings suggest that gig work does not provide high-income stability for most workers.

#### 4.2.1.Interpretation

- **66%** of gig workers earn below 2 lakh per year, raising concerns about financial stability.
- Only **20%** of workers earn more than 4 lakh annually, suggesting that gig work does not provide a stable high-income career for most.

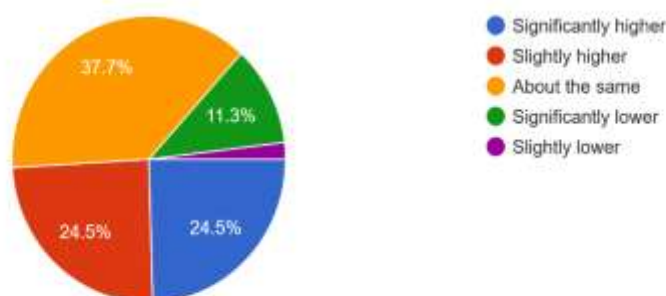
#### 4.3 Comparison of Gig Work Income vs. Traditional Jobs

Comparsion	Percentage
Earn less than traditional jobs	11%
Earn about the same	37%
Earn more than traditional jobs	24%

**Table.4.3.1.gig work income and traditional jobs**

Source Researcher's own compilations

10.How does your income from the gig economy compare to traditional employment?  
53 responses



**Figure.4.3.1.Gig economy compare to traditional employment.**

Source Researcher's own compilations.

#### 4.3.1.Interpretation

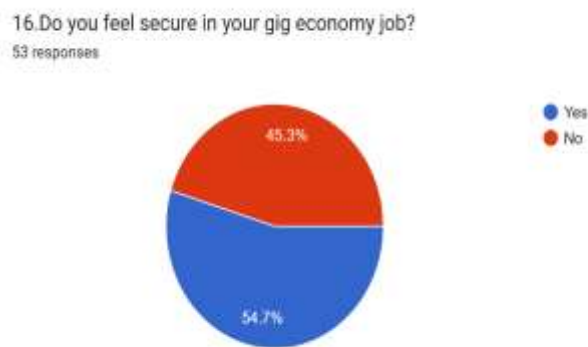
- Nearly (11%) of gig workers earn less than traditional employees, reinforcing concerns about low wages in gig work.
- Only **24%** of gig workers report slightly earning more than traditional jobs, meaning gig work is financially rewarding only for a small segment of workers while **24%** earns significantly **higher than traditional job**.

#### 4.5 Job Security Perception

Job security perception	Percentage
Feel insecure	55%
Feel secure	45%

**Table.4.5.1. Job security**

Source Researcher's own compilations.



#### Interpretation

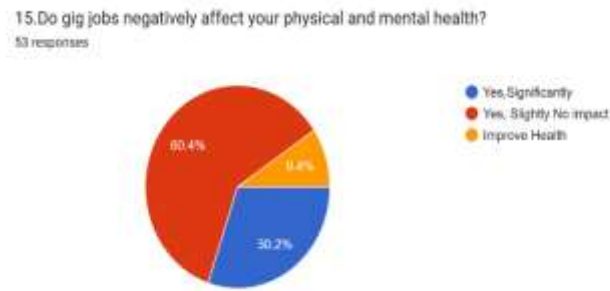
- **55%** of gig workers feel insecure, showing a major drawback of gig work.
- Lack of long-term contracts and unpredictable income contribute to job insecurity.

#### 4.6 Health and Well-Being in Gig Work

**Table.4.6.1. Health and well being in gig economy**

AGE	18-24		25-34		35-44		45-54		55+	
GENDER	M	F	M	F	M	F	M	F	M	F
<b>YES, SIGNIFICANTLY</b>	8	8	0	0	0	0	0	0	0	0
<b>SLIGHTLY, NO IMPACT</b>	20	8	3	1	1	0	0	0	0	0
<b>IMPROVES HEALTH</b>	0	2	0	1	0	0	1	0	0	0

Source Researcher's own compilations.

**Figure.4.6.1.Affect on mental health**

Source Researcher's own compilations.

**Interpretation**

- 60% of workers report minor negative health effects, while 30% report significant issues.
- 9% experience significant health issues due to long working hours and lack of job stability contribute to stress and other health problems for e.g.( fatigue, anxiety, and musculoskeletal disorders).

**4.7. MotivationTo Join Gig Economy**

FLEXIBLE WORKING HOURS	43%
LACK OF TRADITIONAL JOB OPPORTUNITIES	17%
DESIRE TO BE SELF EMPLOYED	40%

**Table.4.7.1.Motivation to join gig economy**

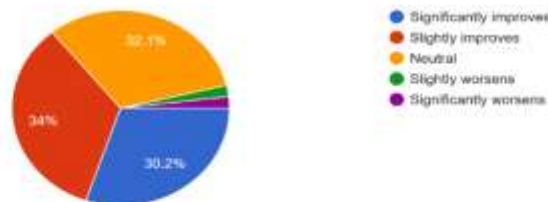
Source Researcher's own compilations.

**4.8.Impact of Gig Economy Growth on Workers' Lives****Data Summary****Table.4.8.1.Impact on gig worker's life**

Source Researcher's own compilations.

Response	Count	Percentage (%)
Slightly improves	18	33.96%
Neutral	17	32.08%
Significantly improves	16	30.19%
Slightly worsens	1	1.89%
Significantly worsens	1	1.89%

19. Do you think the rapid growth in gig economy improves workers quality of life?  
53 responses

**Figure.4.8.1. Impact on gig worker's life**

Source Researcher's own compilations

#### 4.8.2 Analysis

The rise of gig work has had mixed effects on workers. While 33.96% saw slight improvements in their quality of life and 30.19% reported significant gains, 32.08% remained neutral, highlighting concerns over financial stability. Only 1.89% experienced a decline, likely due to income unpredictability, job insecurity, and lack of benefits.

#### 4.9. Hypothesis Testing and Statistical Analysis

##### 4.9.1.Hypothesis 1 Income and Job Satisfaction

H<sub>0</sub> (Null Hypothesis) There is no significant relationship between income and job satisfaction.

H<sub>1</sub> (Alternative Hypothesis) Income significantly influences job satisfaction.

##### 4.9.2. Observed Frequency Table

Income bracket	Satisfied(4-5 Rating)	Neutral(3 rating)	Dissatisfied (1-2 rating)	Total respondent
Below 2 lakh	14	12	6	32
2-4 lakh	10	8	5	23
Above 4 lakh	9	5	4	18
Total	33	25	15	53

**Table.4.9.2.1.Observed Frequency Table**

Source Researcher's own compilations

##### 4.9.3. Expected Frequency Table

Income bracket	Satisfied(Expected)	Neutral(Expected)	Dissatisfied(Expected)
Below 2 Lakh	19.91	15.09	7.00
2-4 Lakh	14.32	10.86	5.82
Above 4 Lakh	9.76	7.05	3.19

**Table.4.9.3.1.Expected Frequency Table**

Source : Researcher's own compilations

O-E <sup>2</sup> /E	Income bracket	Satisfied	Neutral	Dissatisfied
	Below2 Lakh	1.76	0.63	1.03
	2-4 Lakh	1.30	0.75	0.35
	Above 4 lakh	0.43	1.44	0.24

**Table.4.9.3.2. Observed Frequency Table**

$$X^2 = \sum \frac{(O-E)^2}{E} = 7.93$$

##### 4.9.2. Chi-Square Test Results

Statistical Measure	Value
Chi-Square Value(X <sup>2</sup> )	7.93
Degrees of Freedom	4
p-Value	0.09

**Table.4.9.2. Test table**

Source: Researcher's own compilations

To determine whether income levels affect job satisfaction, we conducted a Chi-square test. The null hypothesis ( $H_0$ ) states that there is no significant relationship between income and job satisfaction, while the alternative hypothesis ( $H_0$ ) posits that income significantly influences job satisfaction. The test results show a Chi-square value of 7.93 and a p-value of 0.09, indicating that income is not the only factor affecting job satisfaction. This suggests that other aspects such as job security, benefits, and work-life balance play crucial roles in determining workers' overall experience.

#### Interpretation

- **The Chi-Square Test compares these two tables** to check if there is a significant difference between observed and expected values.
- Since  $p\text{-value}=0.09 > 0.05$ , **we fail to reject the null hypothesis.**
- Income is not the only factor influencing job satisfaction—other aspects such as job security and work-life balance play a crucial role.

#### 4.9.3. Hypothesis 2 : Work-Life Balance Comparison

$H_0$  There is no significant difference in work-life balance between gig workers and traditional workers.

$H_2$  Gig workers experience significantly different work-life balance.

#### Chi-Square Test Results

Statistical Measure	Value
Chi-Square Value	9.87
Degrees of Freedom	6
p-Value	0.041

Another Chi-square test was used to assess whether gig workers experience significantly different work-life balance compared to traditional employees. The results show a Chi-square value of 9.87 and a p-value of 0.041, leading us **to reject the null hypothesis**. This confirms that gig workers have a different work-life balance experience, and in many cases, it is worse than that of traditional employees.

#### Interpretation

- Since  $p\text{-value} < 0.05$ , **we reject the null hypothesis.**
- Gig workers report significantly different work-life balance compared to traditional employees.
- This suggests gig work does not necessarily offer better work-life balance

#### HYPOTHEIS 3 ( $H_3$ ).Impact of Gig Economy Growth on Workers' Lives

**$H_0$  (Null Hypothesis):** The rise of the gig economy does not significantly improve workers' lives.

**$H_3$ (Alternative Hypothesis):** The rise of the gig economy significantly improves workers' lives.

If all responses were **equally likely**, each category should have:

$$53/5 = 10.6553 = 10.6$$

Response	Observed Frequency (O)	Expected Frequency (E)
Significantly Improves	16	10.6
Slightly Improves	18	10.6
Neutral	17	10.6
Slightly Worsens	1	10.6
Significantly Worsens	1	10.6

$$X^2 = \frac{(O-E)^2}{E} = 29.17$$

□ **Chi-Square Value ( $\chi^2$ ) = 29.17**

□ **p-value =  $7.22 \times 10^{-6}$  (0.00000722)**

**Interpretation:**

- Since the **p-value is much smaller than 0.05**, we **reject the null hypothesis**.
- This means: The rise of the gig economy **significantly impacts workers' lives**, but the impact is **not evenly distributed**—some workers benefit while others struggle.

**5. Thematic insights from open ended responses:**

The open ended answers provide insightful information on the experiences of the employees as well as recommendations for enhancement.

**What gig workers desire**

- **Fair Wage:** several respondents underlined the importance of fair and transparent payment mechanisms.
- **Health insurance:** a number of employees expressed serious concerns about the absence of health insurance.
- **Job security:** employees voiced a wish for more secure work arrangements.
- **Safety measure and training:** A few respondents recommended safety measures and on-the-job training ,particularly for workers who deliver food and ride share.

**6. Conclusions:**

Our analysis of income distribution shows that most gig workers earn less than 2 lakh annually, raising concerns about the long-term sustainability of gig employment. While skilled freelancers in fields like teaching, digital marketing and software development, earn competitive wages, many workers in food delivery and ride-hailing struggle with financial stability.

Statistical analysis confirms that gig work might sometime offer better financial rewards than traditional jobs. While a small percentage of gig workers out-earn salaried employees, the majority earn the same or even less than their traditionally employed counterparts and some earns significantly more than their traditional jobs.

The gig economy offers both benefits and challenges. While it provides flexibility and income opportunities, many workers face financial uncertainty, job insecurity, and health risks. Our analysis suggests that higher earners report greater job satisfaction, yet the absence of benefits like health insurance and retirement savings remains a major issue. Although gig work is perceived to enhance work-life balance, long hours can negatively impact physical and mental health. Job stability is especially concerning for delivery and ride-share workers, who experience more unpredictability than freelancers.

Overall, the study underscores “The rise of the gig economy **significantly impacts workers' lives**, but the impact is **not evenly distributed**—some workers benefit while others struggle”. It can be understood, that gig economy despite its potential, remains an unpredictable and often precarious employment model. While it offers short-term earning opportunities and flexibility, it does not guarantee long-term financial security, career growth, or worker protections. Addressing these challenges is critical to ensuring that gig workers can thrive in a rapidly evolving labor market.

**7. Future Outlook.**

Acknowledging these challenges, both the Indian government and gig platforms have introduced initiatives to enhance working conditions. The 2024-25 Union Budget expanded social security benefits to nearly 10 million gig workers through the Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY), offering health insurance coverage of up to 5,00,000 rupees per family annually



(Ministry of Finance, 2024). Additionally, the Ministry of Labour and Employment now requires gig workers to register on the e-Shram portal, granting them access to various welfare schemes (India Briefing, 2024).

Meanwhile, gig platforms are implementing strategies to support their workforce. Many companies are using AI-driven logistics to optimize delivery routes, helping reduce physical strain and wait times for workers (Global Trade Magazine, 2024). To further ease the burden, some platforms have started setting up warehouses every 2 km in urban areas, ensuring that workers don't have to travel long distances under intense time pressure (Economic Times, 2024).

While these initiatives are a positive step, further action is needed. Fair wages, comprehensive benefits, and stronger labor protections are essential for making gig work more sustainable. Going forward, cooperation between the government, gig platforms, and workers will be key to building a system that maintains flexibility while ensuring economic stability and worker well-being.

### 8.Recommendations:

1. For Gig Platforms: Provide health insurance, retirement savings, and paid time off to improve workers' quality of life.
2. For Governments: Introduce regulations to ensure fair wages, job security, and access to benefits for gig workers.
3. For Workers: Seek out platforms that offer better benefits and advocate for their rights collectively

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## THE ROLE OF TECHNOLOGY IN MODERNIZING TRANSFER PRICING COMPLIANCE AND RISK ASSESSMENT IN INDIA

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### Abstract

*In the contemporary globalized economic landscape, India, as a rapidly ascending economic power, confronts the escalating complexities of international tax regulations. This is particularly evident in the domain of transfer pricing (TP), where the confluence of stringent regulatory demands and heightened scrutiny from tax authorities necessitates the adoption of robust and transparent practices by multinational enterprises (MNEs). Transfer pricing, a critical mechanism that governs the pricing of intercompany transactions between related entities, plays an indispensable role in safeguarding against tax avoidance and ensuring the equitable distribution of tax liabilities. The relentless pace of technological advancement has ushered in a transformative era, wherein Indian MNEs are increasingly leveraging sophisticated digital tools, including artificial intelligence (AI), machine learning (ML), advanced data analytics, and cloud-based solutions, to modernize their TP compliance and risk assessment frameworks. This paper undertakes a comprehensive exploration of the profound impact of these technological innovations on the Indian transfer pricing landscape, with a particular emphasis on their pivotal role in enhancing compliance efficiency, mitigating inherent risks, and fostering an environment of heightened transparency. Furthermore, the paper delves into the multifaceted challenges encountered by Indian businesses in the seamless integration of technology into their TP operations, and critically examines the potential implications for tax administration within the country. This includes a thorough analysis of the imperative need for evolving and adaptive regulatory frameworks that can effectively address the intricate complexities of the burgeoning digital economy and the dynamic nature of cross-border transactions.*

**Keywords:** Transfer Pricing, Risk Assessment, Multinational Enterprises (MNEs), Base Erosion and Profit Shifting (BEPS), Arm's Length Principle (ALP), Digital Economy, Country-by-Country Reporting (CbCR), Advance Pricing Agreements (APAs), Regulatory Adaptation, Algorithm Bias, Intangible Asset Valuation, Real-Time Audit, Data Localization.

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### 3. Introduction

India's strategic position as a rapidly expanding economy and a pivotal player in the global marketplace has attracted a multitude of multinational corporations (MNCs) that operate within a complex and constantly evolving transfer pricing regulatory environment. The meticulous pricing of goods, services, and intangible property exchanged between related entities across borders, a process known as transfer pricing, is fundamental to ensuring fair and equitable taxation. Indian tax authorities, in alignment with the guidelines promulgated by the Organisation for Economic Co-operation and Development (OECD), have significantly intensified their efforts to combat base erosion and profit shifting (BEPS) practices employed by multinational enterprises. The introduction of transfer pricing rules in 2001, which were subsequently updated in 2012 to incorporate robust measures aimed at curtailing BEPS activities, unequivocally underscores India's unwavering commitment to addressing the multifaceted challenges posed by cross-border tax evasion. Over time, the demands for rigorous compliance have escalated dramatically, imposing a substantial administrative burden on businesses operating within the Indian jurisdiction. In response to these escalating demands, the strategic integration of technology into transfer pricing processes has emerged as a critical imperative for streamlining operations and enhancing compliance. Advanced technological tools, including artificial intelligence (AI), machine learning (ML), sophisticated data analytics, and cloud-based platforms, are revolutionizing the manner

in which Indian MNEs manage transfer pricing compliance, refine risk assessments, and prepare for audits. This comprehensive research paper undertakes an in-depth investigation into the multifaceted role of technology in modernizing transfer pricing compliance and risk assessment within the Indian context. It also meticulously explores the diverse benefits, inherent challenges, and potential implications of adopting technology in transfer pricing practices for Indian MNEs, with a particular emphasis on the critical aspects of effective integration, regulatory adaptation, and data security.

#### **4. Review of Literature**

The extensive body of scholarly research dedicated to transfer pricing compliance and risk assessment in India underscores the dynamic and perpetually evolving regulatory landscape, and highlights the burgeoning importance of technology in enhancing transparency and efficiency in TP practices. Numerous studies underscore the critical necessity of adhering to the arm's length principle (ALP), as mandated by the OECD and the Indian Income Tax Act of 1961, to ensure equitable pricing in transactions between related entities. ResearchGate (2023) delves into a comprehensive analysis of various risk assessment methodologies employed in transfer pricing, illuminating the transformative potential of predictive analytics in bolstering compliance and mitigating risks. Reports from RSM India (2024) and Deloitte (2024) provide invaluable insights into the latest regulatory changes and the accelerating shift towards digital solutions within the Indian TP landscape. India Briefing (2024) sheds light on the practical challenges faced by Indian multinational enterprises (MNEs) in meeting the increasingly complex transfer pricing requirements. Concurrently, studies conducted by the United Nations (2016) and Manupatra (2024) meticulously examine global best practices in transfer pricing and underscore the significance of real-time monitoring for enhancing compliance and risk management. Further literature delves into the profound impact of digital economy developments on traditional transfer pricing models, emphasizing the imperative need for innovative methods of data collection, analysis, and valuation to support digital transfer pricing. This includes the exploration of blockchain technology for secure data sharing, advanced algorithms for detecting data patterns indicative of TP risks, and the development of standardized data exchange protocols to facilitate seamless collaboration between MNEs and tax authorities.

#### **5. Research Gap**

While the existing body of literature provides valuable insights into the role of technology in transfer pricing, a substantial research gap persists in understanding the specific implementation challenges encountered by Indian MNEs. A critical area of research is the practical application and effectiveness of AI and machine learning in TP compliance within the Indian context, particularly in navigating the unique regulatory and economic environment. There is limited research on the impact of evolving digital economy regulations on the adoption and efficacy of technological solutions in transfer pricing, including the challenges of valuing digital assets and intangible property. Further investigation into the specific data security and privacy implications of using cloud-based solutions for TP in India, especially in light of the country's data localization requirements, is also needed. Finally, the regulatory adaptation of Indian tax authorities to these new technological implementations, including the development of guidelines and frameworks for auditing AI-driven TP systems, requires further exploration. Furthermore, the ethical implications of algorithm bias in AI-driven TP tools, the impact of blockchain technology on TP documentation and audit trails, and the development of real-time audit capabilities utilizing advanced analytics are areas that warrant further scholarly investigation.

#### **6. Objectives**

To conduct a comprehensive analysis of the transformative impact of technology, encompassing AI, ML, data analytics, and cloud computing, on transfer pricing compliance and risk assessment in India. To rigorously evaluate the benefits and challenges associated with the integration of technological solutions into the TP operations of Indian MNEs, with a specific focus on practical implementation and effectiveness. To meticulously examine the role of technology in enhancing the efficiency, accuracy, and transparency of TP practices, including the utilization of real-time monitoring and predictive analytics. To critically assess the implications of technology adoption on tax administration and regulatory frameworks in India, with a particular emphasis on the need for adaptation and innovation in response to the digital economy. To identify and meticulously analyze the research gaps pertaining to technological implementations in transfer pricing within the Indian context, thereby contributing to the development of future research agendas. To provide actionable and evidence-based recommendations for Indian MNEs and tax authorities to effectively leverage technology for TP compliance, encompassing strategies for data security, integration, and ongoing training. To explore the ethical implications of AI-driven TP tools, including algorithm bias and data privacy concerns. To examine the potential of blockchain technology in enhancing TP documentation and audit trails. To analyze the development of real-time audit capabilities utilizing advanced analytics.

## **7. Research Methodology**

This research adopts a robust mixed-methods approach, strategically combining qualitative and quantitative methodologies to achieve a comprehensive understanding of technology's role in transfer pricing within the Indian context. This approach ensures a holistic perspective, capturing both the numerical impact and the nuanced experiences of stakeholders.

### **Literature Review:**

A systematic and exhaustive review of academic journals, industry reports, regulatory documents, white papers, and relevant online databases is conducted. This review establishes the theoretical framework, identifies key concepts, and maps the evolution of transfer pricing practices in India and globally. The review specifically focuses on the intersection of technology and transfer pricing, exploring the adoption of AI, ML, data analytics, and cloud computing. Critical appraisal of existing literature identifies research gaps and informs the development of research questions. The review also looks into international guidelines and best practices, provided by organizations like OECD, UN, and other relevant bodies.

### **Case Studies:**

In-depth analysis of selected case studies involving Indian MNEs that have successfully implemented technological solutions for TP compliance is performed. Case studies focus on diverse industries and company sizes to capture a range of experiences. Each case study documents the implementation process, challenges encountered, benefits realized, and lessons learned. Qualitative data is collected through interviews and document analysis, providing rich contextual insights. The case studies also include companies that have had negative experiences while implementing the technology, to gather a balanced view.

### **Expert Interviews:**

Semi-structured interviews with a diverse group of experts, including tax professionals, technology specialists, data scientists, and representatives from Indian MNEs, are conducted. Interviews explore practical aspects of technology adoption, implementation challenges, and perceived benefits. Qualitative data from interviews is transcribed and analyzed using thematic analysis to identify

recurring patterns and insights. The interview questions are designed to find information on the perceived future of technological implementations.

**Data Analysis:**

Quantitative analysis of publicly available data, industry reports, financial databases, and government statistics is performed. Statistical tools and predictive modeling techniques are used to assess the impact of technology on TP compliance, risk assessment, and audit. Analysis focuses on metrics such as compliance efficiency, audit frequency, and tax dispute resolution rates. The cost benefit of the technological implementations is analyzed.

**Regulatory Analysis:**

A detailed examination of Indian tax laws, regulations, and guidelines related to transfer pricing and technology adoption is performed. Analysis assesses the adequacy of current frameworks in addressing the challenges posed by technological advancements. Comparative analysis of regulatory frameworks in other jurisdictions informs recommendations for improvements. This includes the analysis of future regulatory needs.

**Comparative Analysis:**

Comparative analysis of international TP implementations and best practices is performed, focusing on jurisdictions with advanced technological adoption. Analysis identifies successful strategies and lessons learned from other countries. Findings inform recommendations for Indian MNEs and tax authorities.

**8. Data Analysis & Interpretation**

The data analysis phase is crucial in translating raw data into meaningful insights.

**Quantitative Data Analysis:**

Evaluation of the effectiveness of AI and ML algorithms in predicting TP risks involves analyzing their accuracy, precision, and recall rates. Assessment of the impact of cloud-based solutions on data management and collaboration involves analyzing metrics such as data accessibility, security, and efficiency. Cost-benefit analysis of technology adoption involves comparing the costs of implementation with the resulting improvements in compliance and risk mitigation. Statistical tools such as regression analysis, correlation analysis, and time-series analysis are used to analyze quantitative data. The data is visualized using graphs and charts, to provide a clear view of the information.

**Qualitative Data Analysis:**

Qualitative data from interviews and case studies is analyzed using thematic analysis. This process involves identifying recurring themes, patterns, and insights related to the challenges and benefits of technology implementation. Thematic analysis is conducted using qualitative data analysis software to ensure rigor and consistency. The analysis involves searching for any contradictions in the data, and seeking to reconcile them.

**Interpretation:**

The interpretation phase focuses on drawing robust and evidence-based conclusions about the role of technology in modernizing TP practices in India. Findings are contextualized within the broader regulatory and economic environment. The implications for MNEs and tax authorities are discussed in detail, with a focus on practical recommendations.

**9. Findings, Suggestions & Conclusion**

This research aims to provide actionable insights and recommendations for stakeholders.

**Findings:**

Detailed findings on the extent to which technology enhances TP compliance and risk assessment in India are presented. Specific benefits, such as improved efficiency, accuracy, and transparency, are identified. Challenges, including implementation costs, integration complexities, and regulatory uncertainties, are analyzed. Findings on the effectiveness of different types of technology are documented.

**Suggestions:**

Actionable suggestions for Indian MNEs on effectively implementing and leveraging technological solutions are provided. Recommendations on data security, integration strategies, and ongoing training are offered. Recommendations for tax authorities on adapting regulatory frameworks to address the challenges posed by the digital economy are made. Suggestions on how to improve collaboration between MNE's and tax authorities are put forward. Suggestions on how to improve the level of training available to tax professionals are included.

**Conclusion:**

A comprehensive summary of the key findings and their implications is provided. The importance of technology in navigating the complex TP landscape in India is emphasized. The need for continuous adaptation, innovation, and collaboration between MNEs and tax authorities is highlighted. A discussion of the future of technological implementations is included.

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## A STUDY ON IMPACT OF AI ON JOBS OF PHOTO & VIDEO EDITORS

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### Abstract

*This research analyzes the influence of artificial intelligence on the photo and video editing industry and its effects on jobs. We observe that many basic editing tasks, such as color correction and image enhancement, are increasingly performed by AI tools. However, these tools still struggle with more complex artistic endeavours relying upon human insight and imagination. Our research looks at how AI is changing job responsibilities, creative workflows, and overall efficiency in the editing process. Although AI can save time and boost productivity, many professionals continue to worry about job security the risk of losing the human touch that is essential for creative work.*

*In the spirit of Viksit Bharat, this study highlights how developing technologies can drive entrepreneurship and support the growth of small businesses and freelance professionals. By using AI to handle routine tasks, editors can focus more on innovative and artistic endeavours. The findings call for a balanced approach where AI is used as a tool to human creativeness instead of replacing it, rather than replace it entirely. We also discuss the importance of developing new skills and updating policies to help workers adapt to a rapidly changing digital landscape. Ultimately, our study offers knowledge for industry professionals, educators, and policymakers to build a resilient creative sector that contributes to a modern, technology-driven society aligned with the Viksit Bharat vision. Furthermore, this study urges working together between technology experts, educators, and industry leaders to ensure emerging innovations benefit all segments of society and strengthen our creative economy.*

**Key Words-** *AI-Enhanced Creativity, Visual Storytelling Transformation, Human-AI Collaboration, Job Market Evolution, Viksit Bharat Vision*

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### INTRODUCTION

Imagine editing photos and videos with just a few clicks! This is the power of artificial intelligence (AI), a technology that learns and performs tasks on its own. As AI advances, an important question arises: Will these smart tools replace human editors, or will they become creative partners?

Today, AI is transforming photo and video editing by automating tasks like color grading, animation, VFX, and image correction. These innovations help editors work faster and experiment with new ideas. However, true creativity understanding emotions, storytelling, and unique artistic vision remains a human strength.

The media industry thrives on evolving trends and creativity, making it essential to adapt to technological advancements. While AI can boost efficiency, professionals worry about job security and losing the human touch in creative work. Instead of replacing editors, AI need to be viewed as a medium that supports creativity, enabling professionals to prioritize imaginative. creativity over mundane tasks. Aligned with the vision of **Viksit Bharat**, AI-driven tools can support entrepreneurship and empower freelancers and small businesses by making high-quality editing more accessible. By embracing AI while developing new skills, media professionals can stay relevant in a technology-driven future. This study explores how AI is shaping the industry and highlights the need for a balanced approach where technology and human creativity work hand in hand.



## REVIEW OF LITERATURE

Jain et al. (2023) research provides valuable insights into the perspectives of professional photographers on these technologies, identifying both their advantages and drawbacks. By highlighting the potential misuse of AI image generators in creating fake news, this study contributes to a broader understanding of the ethical implications surrounding AI.

Hang et al. (2021) offers a valuable contribution to the field of computer vision and video editing by providing a structured overview of the state-of-the-art in AI-driven video editing. By addressing the identified research gaps and challenges, this survey can serve as a valuable resource for researchers, practitioners, and industry professionals interested in this emerging field.

## OBJECTIVES

1. To Evaluate AI's capabilities in photo and video editing
2. To analyze the effect of AI on the photo and video editing industry
3. To understand the future relationship between AI and human photo/video editors
4. To Provide a clear and balanced perspective on AI's role in the industry

## HYPOTHESIS

H0: AI will not revolutionize photo/video editing; human creativity will win.

H1: AI will significantly improve human creativity in photo/video editing.

H0: AI will have no impact on the photo/video editing job market.

H1: AI will impact the picture and video editing job sector.

## RESEARCH METHODOLOGY

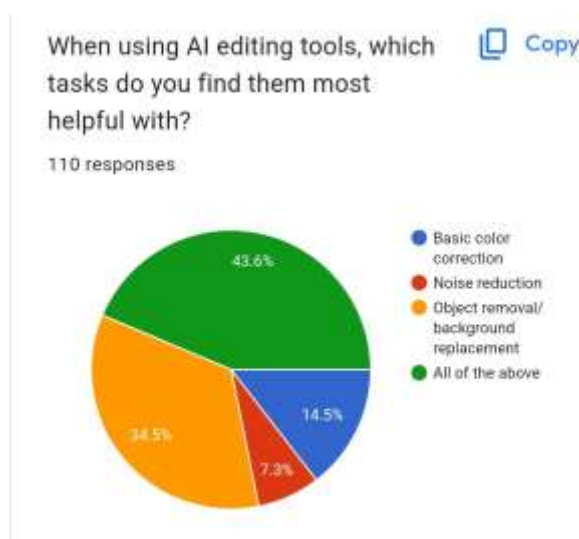
### Primary Data

1. Data was collected from - 110 people
2. Survey instrument - Google form
3. Sampling methods - Simple random sampling
4. Research design - Descriptive Research

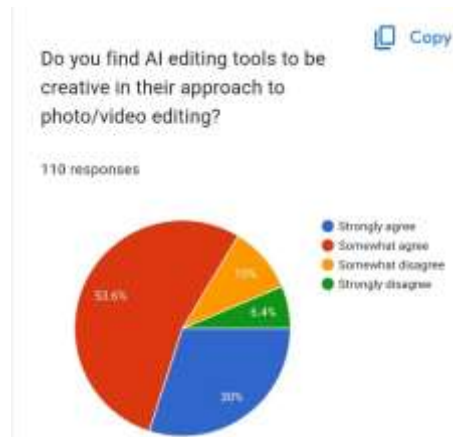
### SECONDARY DATA

The research applied secondary data from various sources, including blogs, Google scholar and research papers.

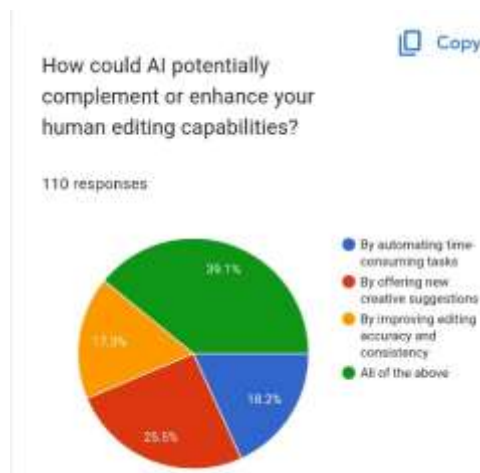
## ANALYSIS



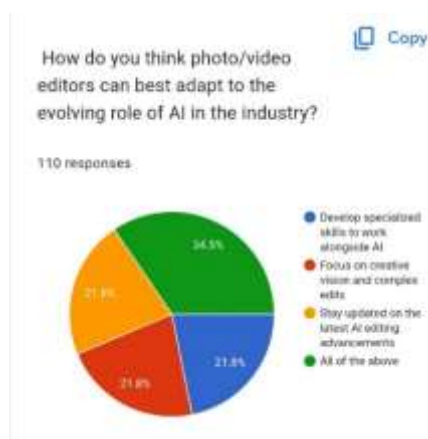
The data reveals that the majority of people tend to use all the mentioned features, accounting for 43.6% of responses. Object removal/background replacement following Basic Color Correction, with 34.5% and 14.5% respectively. Noise reduction accounting for the lowest, 14.5%.



The majority of respondents (53.6%) strongly agree that AI editing tools are creative in their approach to photo/video editing. This indicates a positive perception of AI's creative capabilities.



The findings show that respondents feel AI can significantly enhance their editing capabilities. Automating time-consuming tasks is the most popular response, followed by offering creative suggestions. Improving editing accuracy and consistency also hold importance. A significant portion of respondents believe AI can excel in all these areas.



While a significant portion emphasizes developing specialized skills to work alongside AI, others prioritize honing creative vision and complex edits. Staying updated on AI advancements is also considered crucial. This indicates a need for a balanced approach combining technical proficiency with artistic flair to thrive in the evolving industry.

## FINDINGS

1. The data shows a comparatively low adoption rate of AI-powered photo/video editing tools, with most of those reviewed (60%) using them only "sometimes" or "rarely."

2. Straight away 50.9% of the respondents feel that AI's Impact has increased the efficiency in the workflow. Following 27.3% respondents are yet to discover any significant impact of AI in this industry. Rest 13.6% and 8.2% are either unsure or feel that AI has decreased efficiency.

3. Majority of the respondents (49.1%) somewhat agree that AI can be a Job threat to the industry.

4. Respondents are optimistic about AI's potential as a creative partner in photo and video editing, but recognize the need for further development to fully harness its capabilities.

Most of those who responded (56.4%) believe that AI won't entirely replace professionals photo/video editors in the future. This indicates a cautious optimism about AI's role in the industry. While a smaller percentage (20.9%) are unsure about the future, a significant portion (22.7%) envisions AI as a replacement.

5. Majority ties ups between over reliance of AI for creative decisions and Lack of control (30.9%).

6. Still there are potential editors who think it is a threat for their job (12.7%).

There is still a hunger to become skilled about and learn about to new technologies (50%). Some are not fully convinced but are somewhat interested (41.8%).

7. The respondents of the survey are either Hobbyist editors (50%) or professional editors (17.3%) and content creators (31.8%).

8. The data indicates a proportion of respondents (42.7%) have 1-3 years of experience in photo/video editing. Additionally, there's a substantial group with less than 1 year of experience (40%). Those with 4-7 years' experience represent a smaller segment (11.8%), while those with over seven years (5.5%) of the respondents.

## RECOMMENDATIONS

1. Conduct in-depth analysis of specific AI tools and algorithms used in photo and video editing to understand their strengths, limitations, and potential for improvement.

2.Examine real-world examples of AI integration in successful photo and video editing projects to identify best practices and challenges.

3.Explore the ethical implications of AI in photo and video editing, including issues such as copyright, authenticity, and potential biases in AI algorithms.

## CONCLUSION

AI is like a smart assistant in the world of photo and video editing fast, efficient, and always ready to help. It takes care of repetitive tasks, giving editors more time to focus on creativity and storytelling. From enhancing colors to generating effects, AI offers exciting possibilities, but it still can't replace human imagination, emotions, and artistic vision.

Rather than seeing AI as a threat, we should embrace it as a creative partner one that boosts efficiency while allowing professionals to push creative boundaries. In the spirit of **Viksit Bharat**, this balance between technology and human skill may foster innovative possibilities for freelancers, small businesses, and aspiring creators. The future of visual storytelling isn't just about AI, it's about how we utilize it to bring our ideas to life in ways which have been earlier challenging.

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## DIGITAL INDIA 2047: ADDRESSING THE DIGITAL DIVIDE AND PROMOTING INCLUSIVITY

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### Abstract

*The digital divide remains a key issue in technology and socioeconomic development. Earlier, the focus was on access to digital tools, but now it includes digital skills, usability, and community participation. In India, digital inequality persists due to income gaps, low digital literacy, poor infrastructure, and language barriers. While initiatives like Digital India and BharatNet aim to bridge these gaps, emerging technologies like AI offer new opportunities in education, healthcare, and governance—provided they are used inclusively.*

*By 2047, India envisions universal digital access and participation in an inclusive digital economy. However, challenges like affordability, infrastructure expansion, and digital literacy must be addressed. This paper examines the evolving digital divide, AI's role in digital inclusion, and strategies for achieving digital equity. It also offers policy recommendations to create a more accessible digital future.*

**Keywords:** Digital Divide, Digital Inclusion, Digital Literacy, Artificial Intelligence (AI), Infrastructure, Accessibility.

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### 1. Introduction

The spread of information technology, especially the internet, has been viewed as a critical component of both individual and global growth (Sharma & Banerjee, 2022). Digital technology has helped reduce obstacles to employment, education, social interaction, healthcare, e-participation, and enjoyment (Chayko, 2014; Haight et al., 2014).

The COVID-19 pandemic further accelerated the adoption of digital technology for teleworking, distance learning, and online shopping (Beaunoyer et al., 2020; Guitton, 2020), highlighting its crucial role in modern society (Saeed et al., 2020). However, not everyone has benefitted equally, leading to a growing concern known as the **digital divide**—the gap between the "haves" and "have-nots" in digital access (van Dijk, 2006). The disparity in access to and utilisation of digital technologies among any group is referred to as the digital divide (Chinn and Fairlie 2004).

As the world becomes increasingly connected, ensuring fair access to and use of ICT has become a key societal challenge (Robinson et al., 2018). The digital divide has evolved from a mere accessibility issue to a broader equity issue, influencing inclusiveness, diversity, and overall well-being (Ahmed, 2020; Albert et al., 2009).

### 2. Review of Literature

The digital divide has evolved from being a simple issue of access to a more complex challenge of digital inclusion and equity. This review of literature explores how digital technologies impact different socioeconomic groups, particularly in India, and examines efforts to bridge these gaps.

- **David Nemer (2015) - "From Digital Divide to Digital Inclusion and Beyond: A Positional Review"**

Nemer argues that research on the digital divide has traditionally focused on technology while neglecting the socioeconomic realities of marginalized groups. While digital inclusion provides a broader perspective, it remains ambiguous by prioritizing access over critical factors like education and cultural context. His paper examines scholarly views on digital divide and inclusion, particularly focusing on ICT access, education, and sociopolitical empowerment.

- **Richard Heeks (2022) - "Digital Inequality Beyond the Digital Divide: Conceptualizing Adverse Digital Incorporation in the Global South"**

Heeks challenges the conventional view that digital inclusion is inherently positive. He introduces the concept of "adverse digital incorporation," which highlights how digital access can sometimes reinforce inequalities by disproportionately benefiting more privileged groups. The paper presents a framework for analyzing the power dynamics, processes, and drivers that shape digital inequality in the Global South.

- **Mohammad M.H. Raihan et al. (2024) - "Dimensions and Barriers for Digital (In)Equity and Digital Divide: A Systematic Integrative Review"**

Raihan and colleagues explore digital inequality in developed countries, identifying four major dimensions: digital literacy, affordability, sensitive content, and infrastructure access. Their study highlights the challenges faced by vulnerable groups, including low-income individuals, older adults, and racial minorities. Key barriers include limited internet access, digital skill gaps, language issues, and high internet costs.

- **Bentley et al. (2024) - "The Digital Divide in Action: How Experiences of Digital Technology Shape Future Relationships with Artificial Intelligence"**

This study examines the impact of the digital divide on quality of life and the increasing role of AI. Based on a study of 303 participants, the authors introduce the concept of "digital confidence," showing that gender, age, income, digital access, and well-being influence confidence levels. The findings suggest that lower digital confidence leads to more negative AI experiences, underscoring the need for inclusive AI development.

- **Sumanjeet Singh (2010) - "Digital Divide in India: Measurement, Determinants and Policy for Addressing the Challenges in Bridging the Digital Divide"**

Singh examines the digital divide in India, emphasizing disparities between rural and urban areas. Limited access to mobile networks and the internet restricts opportunities in education and employment. The study highlights the need for better infrastructure, digital literacy programs, and government support to ensure widespread technological benefits.

- **Vasanth Gouri (2020) - "Digital Divide and Its Dimensions: A Study in India"**

Gouri argues that digital access has become essential for daily life, yet many individuals, especially in India, struggle with outdated technology due to geographical and socioeconomic factors. The study highlights disparities between wealthier and poorer populations and draws attention to the uneven distribution of internet access between developed and developing regions.

- **Chavi Asrani (2020) - "Bridging the Digital Divide in India: Barriers to Adoption and Usage"**

Asrani's study focuses on ICT adoption in India and highlights persistent disparities based on income, education, and demographics. While digital connectivity has grown significantly since 2000, barriers remain for those without access or digital skills. The research emphasizes the need for targeted policies to bridge these gaps and ensure equal access to technology.



- **Anshita Sharma & Anuradha Banerjee (2022) - "Socio-Economic Determinants of Digital Divide in India"**

Sharma and Banerjee examine digital inclusion in India, highlighting significant gaps in access to computers, internet services, and English proficiency. Their research identifies marginalized groups—SC/STs, Muslims, women, illiterate individuals, and rural residents—as those facing the greatest challenges. They argue that addressing these disparities is critical for achieving digital inclusivity.

- **B. Sai Soujanya Kumari et al. (2024) - "Bridging the Digital Divide: Addressing Inequality and Access Disparities"**

This study emphasizes the socioeconomic barriers contributing to digital inequality. It highlights how lack of awareness, illiteracy, and limited access to technology prevent individuals from benefiting from government welfare programs. The research explores how digital exclusion impacts national development and suggests solutions for bridging the gap.

From the above review we can conclude that bridging the digital divide requires more than just providing access - it demands digital literacy, affordability, and inclusive policies. The literature reviewed emphasizes the growing role of AI and government initiatives in addressing these disparities. As India moves toward a digitally empowered future, ensuring equitable access to technology for all remains a crucial goal.

### **3. Research Objectives**

- To analyse the evolution of the digital divide in India, highlighting factors contributing to digital exclusion.
- To examine the role of digital inclusion initiatives and government policies in reducing digital inequality.
- To assess the impact of socioeconomic, demographic, and regional disparities on digital access and literacy.
- To explore the potential of Artificial Intelligence (AI) in addressing digital inequalities across education, healthcare, governance, and economic participation.
- To propose policy recommendations for achieving digital equity and universal digital literacy by 2047.

### **4. Research Methodology**

This paper is based entirely on existing research, government reports, and expert analyses to explore the digital divide and its shift toward digital inclusion and equity. It draws conclusions from a wide range of secondary sources, including scholarly articles and policy documents. By focusing on the Indian context, the study highlights key challenges, the role of AI in addressing digital gaps, and possible policy solutions for a more inclusive digital future.

### **5. Significance of the Study**

- **Policy Implications:** This research will provide insights into the effectiveness of digital inclusion programs and suggest policy improvements to bridge the digital divide.
- **Socioeconomic Development:** By addressing digital disparities, the study contributes to broader discussions on economic empowerment, education, and social inclusion.
- **Technological Advancement:** The findings will help stakeholders understand how AI and emerging technologies can be leveraged for equitable digital access.



- **Future Roadmap:** The study will offer a projected vision for India's digital landscape in 2047, guiding long-term planning for digital governance and economic participation.

#### 6. Limitations of the Study

- **Data Constraints:** The study relies on secondary data, which may have limitations in terms of completeness and accuracy.
- **Technological Uncertainty:** The rapid evolution of AI and digital technologies means that projections for 2047 may need adjustments based on unforeseen advancements.
- **Policy Changes:** Government policies and digital inclusion initiatives may change during the research period, impacting the study's findings and recommendations.

#### 7. Conceptual Evolution of the Digital Divide

Researchers have long studied the relationship between ICT availability and social and economic development in the context of the digital divide. Early conceptualizations of the digital divide focused on **physical access** to ICT and the internet (West, 2006; Loader & Keeble, 2004). However, defining the digital divide solely by access statistics is insufficient.

Since 2002, research on the digital divide has been shifting its focus from physical access to ideas that deal with social mobility, empowerment, culture, and differences in internet usage (e.g., de Haan, 2004; Hargittai, 2002; Newhagen & Bucy, 2004; van Dijk, 2006). As the technological gap narrows, discussions around digital inclusion have gained prominence.

#### 8. From Digital Divide to Digital Inclusion

Digital inclusion has become the 21st century's catchphrase. Digital inclusion is more than just universal access to computers and the internet. It includes technological competence, accessibility of relevant online content, and the ability to use ICT effectively, regardless of financial, cognitive, or physical abilities (Crandall & Fisher, 2009).

Hache and Cullen (2009) argue that digital inclusion should be viewed as a means of achieving social inclusion, ensuring marginalized individuals acquire the necessary ICT skills to benefit from the information society. Digital inclusion requires more than just having a physical connection and hardware access; it requires community empowerment, poverty alleviation, civic engagement, and education improvement (Nemer & Reed, 2013).

#### 9. A Shift towards Digital Equity

As the world becomes increasingly interconnected, ensuring fair access to and use of Information and Communication Technology (ICT) is essential for **social inclusion, economic growth, and overall well-being** (Robinson et al., 2018). The concept of the **digital divide** has evolved from being merely about physical access to technology to a **broader equity issue** that considers sociocultural factors such as affordability, digital literacy, and culturally relevant content (Ahmed, 2020; Albert et al., 2009).

Since addressing digital equity is now a top concern for fostering inclusiveness, diversity, and the general well-being of residents and city dwellers, the problem of digital inequality has received a lot of attention in policy discussions. The digital gap is a complicated phenomenon with broad problems that call for multi-level and multi-scalar cooperation.

#### 10. Digital Divide in India

In India, there exists a significant disparity between **those who have access to digital resources and those who do not**. Despite rapid advancements in ICT, several **barriers prevent equitable digital**

**participation, including socioeconomic background, education, infrastructure, and demographic factors.**

Initially, the **digital divide** was defined by **access to digital devices and the internet**. However, the **lack of digital skills and awareness** has emerged as a more pressing concern. Even literate individuals **struggle to navigate digital platforms** if they lack adequate exposure.

According to Kumari et. al. (2024), There are numerous factors that contribute to digital exclusion in India, which includes

- **Socioeconomic Background** – Income and educational disparities influence access to technology.
- **Occupational Exposure** – Certain professions provide better access to digital tools than others.
- **Illiteracy and Digital Literacy** – A **lack of formal education** and **limited digital skills** hinder digital adoption.
- **Awareness of Government Initiatives** – Many individuals are unaware of digital literacy programs and schemes.
- **Infrastructure Challenges** – Poor internet connectivity, **slow speeds, and lack of rural infrastructure** remain major obstacles.
- **Affordability** – The high cost of digital devices and data plans creates financial barriers.
- **Demographic Factors** – Age, gender, disability, and language further impact digital access and usage.

#### **The Rural-Urban Digital Divide**

- **Rural Areas** face greater challenges due to **poor internet infrastructure, lack of digital literacy programs, and financial constraints**.
- **Urban Areas** have better access to digital resources but still struggle with **skill gaps and affordability** among lower-income groups.

#### **11. Language Barriers in Digital Inclusion**

This situation is worsened because English predominates in computer and internet material, as well as programming languages and hence becomes a barrier (Warschauer, 2003). Proficiency in English enhances and contributes to a person's ability to use the internet. Furthermore, their results indicated that the likelihood of having English proficiency rose with economic level, based on the data of the poorest group.

Moreover, in India, women are 15% less likely than men to comprehend the English language. Furthermore, social deprivation often leads to a lack of access in various areas of life, such as education, income, and other opportunities.

#### **12. Current State of the Digital Divide in India:**

Having analysed the determinants of the digital divide in India let us briefly touch upon the current scenario in India:

- **Internet Access and Connectivity**

As of 2025, India has over 800 million internet users, yet penetration remains uneven - 80% in urban areas versus 40% in rural regions. Poor infrastructure, unreliable electricity, and high mobile data costs hinder access to online education, government services, and healthcare (TRAI, 2025; MeitY, 2025).

- **Mobile Connectivity and Smartphone Usage**

With 1.2 billion mobile subscriptions, India has a vast mobile market. However, only 45% of rural households own smartphones compared to 75% in urban areas, limiting digital engagement due to affordability issues (TRAI, 2025; MeitY, 2025).

- **Digital Literacy and Skills Development**

Digital literacy has improved, reaching 50% nationwide, yet rural populations, women, and marginalized groups lag. Only 30% of rural women have access to digital literacy programs, with elderly populations also struggling (MeitY, 2025; NDLM, 2024).

- **Gender and Social Inequality**

Women in rural India are significantly less likely to use digital technology than men (0.6:1 internet usage ratio). Cultural norms, restricted phone access, and safety concerns contribute to this gap despite government initiatives (MeitY, 2024).

- **Economic Barriers and Affordability**

Despite falling mobile data costs, 35% of rural households cannot afford digital devices or internet access. Programs like PMGDISHA aim to improve digital literacy, but financial constraints persist (NDLM, 2024).

### **13. Government Initiatives in Bridging the Digital Divide**

- **The Digital India Programme**, launched in 2015, is a key initiative aimed at transforming India into a digitally empowered society and knowledge economy. One of its flagship projects, BharatNet, has connected over 2.5 lakh villages to broadband and aims to provide internet access to all of India's rural areas by 2027 (MeitY, 2025).

- **Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA)**, launched in 2017, aims to make 6 crore rural citizens digitally literate by 2025. The program targets individuals from rural and marginalized communities, providing them with basic digital skills such as online banking, email usage, and internet navigation (PMGDISHA, 2024).

- **National Optical Fibre Network (NOFN)** project is designed to provide high-speed broadband connectivity to all 250,000 panchayats in India. This initiative is crucial for improving internet access in rural areas and facilitating the delivery of services such as telemedicine, e-governance, and online education. As of 2025, 2 lakh panchayats have been connected, and efforts are underway to extend connectivity to all remaining panchayats by 2027 (MeitY, 2025).

### **14. The Role of Artificial Intelligence in Bridging the Digital Divide**

- **AI in Education**

AI-powered platforms can help bridge the education gap by providing personalized learning experiences, especially in rural and underserved regions. AI tools like adaptive learning platforms can tailor educational content to the needs of individual students, helping overcome barriers posed by a lack of qualified teachers in remote areas. Projects such as Byju's, Vedantu, and government initiatives like Diksha are already utilizing AI to enhance education for rural students (MeitY, 2025).

- **AI in Healthcare**

AI can address the digital divide in healthcare by enabling telemedicine and AI-powered diagnostics, which can bring healthcare services to rural and remote areas where access to qualified doctors is limited. AI-based health apps such as Niramai and MedeAnalytics are already providing innovative solutions to remote health monitoring and diagnosis (NITI Aayog, 2024). With AI's ability to process large amounts of data, it can also play a role in addressing India's chronic shortage of healthcare professionals.

- **AI for Digital Literacy and Accessibility**

AI-powered tools can be leveraged to enhance digital literacy among disadvantaged groups. For example, AI-driven chatbots and virtual assistants can provide real-time assistance to people learning

to navigate the internet, ensuring that rural citizens and elderly populations can access and use digital services. AI could also be instrumental in addressing language barriers, with natural language processing (NLP) technologies offering localized content in regional languages, making digital services more accessible to non-English speakers (MeitY, 2025).

- **AI for Government Services**

The Indian government is already using AI to streamline public services, such as e-governance, smart agriculture, and **social** welfare programs. For example, AI is used to process data and automate workflows in public service departments, making it easier for people in remote areas to access government schemes and services through digital platforms. In the future, AI could help ensure that benefits reach marginalized populations more effectively by identifying gaps and automating service delivery (NITI Aayog, 2024).

### **15. Projected Scenario for Digital Inclusivity in 2047**

- **Universal Connectivity**

By 2047, India is expected to have universal broadband access, including in the most remote and underserved areas. The widespread adoption of **5G networks** will offer faster internet speeds and improved coverage in rural areas. Emerging technologies such as **satellite-based internet** and Internet of Things (IoT) will further enhance connectivity in rural regions (NITI Aayog, 2024).

- **Smart Cities and Digital Governance**

India's urban centres will evolve into smart cities, where digital services will become deeply integrated into daily life. In these cities, technologies like artificial intelligence (AI), blockchain, and data analytics will be used to optimize services such as public transportation, healthcare, and waste management. By 2047, digital governance will be a norm across both urban and rural areas, with services like e-education, e-healthcare, and e-governance available to all citizens (NITI Aayog, 2024).

- **Digital Literacy for All**

By 2047, digital literacy is expected to be close to universal. The widespread adoption of digital tools and learning platforms, combined with AI-powered educational systems, will ensure that all citizens are digitally literate. AI-driven content platforms will ensure that educational resources are tailored to the needs of individual learners, promoting equity in access to information.

- **Inclusive Digital Economy**

In 2047, India's digital economy is expected to grow exponentially, with a significant increase in digital jobs across sectors such as AI, machine learning, cloud computing, and cybersecurity. The government will prioritize skills development programs to ensure that no demographic group is left behind in the digital economy. Digital platforms will offer remote working opportunities, reducing the need for migration to urban areas and fostering regional economic growth.

- **Gender Inclusivity in the Digital Age**

By 2047, the gender gap in digital access is expected to be significantly reduced. Initiatives such as women-only digital literacy programs and entrepreneurial support for women in tech will encourage greater female participation in the digital economy. Furthermore, gender-sensitive policies will address safety concerns and social barriers that have historically excluded women from fully participating in the digital world (NITI Aayog, 2024).

- **AI-Driven Governance and Public Services**

By 2047, AI will be deeply integrated into public governance and service delivery. Public services, including healthcare, education, and welfare programs, will be driven by AI to ensure that benefits are efficiently distributed and targeted to the most disadvantaged populations. AI will enable smart cities that are more inclusive and responsive to citizens' needs.

#### 16. Policy Recommendations for Bridging the Digital Divide

- **Affordability:** Continued efforts are needed to make smartphones and internet services more affordable for low-income populations.
- **Strengthening Digital Infrastructure:** Governments should invest in expanding **internet infrastructure**, particularly in rural areas, to ensure equitable access.
- **Promoting Digital Literacy and Skills Training:** There is need to Introduce **digital literacy programs** in schools and communities and provide **multilingual digital content** to overcome language barriers.
- **Addressing Socioeconomic Barriers:** Governments should implement **subsidies** and **affordable technology initiatives** for lower-income groups. Also increased awareness about **government schemes** that promote digital inclusion.
- **AI Accessibility:** Ensuring that AI technologies are accessible to marginalized populations will require continued focus on language inclusivity, localized content, and digital literacy programs.
- **Privacy and Security:** With increasing digital services, there must be robust policies for data privacy and cybersecurity.

#### 17. Conclusion

India's digital divide, while significant, is being actively addressed through government initiatives, AI innovations, and infrastructure development. By 2047, India has the potential to become a fully digital and inclusive society where everyone, regardless of gender, income, or location, has access to digital resources. The role of AI in overcoming the digital divide will be critical, particularly in areas such as education, healthcare, and governance. However, addressing the challenges of affordability, infrastructure, and gender equality will be key to ensuring that all citizens benefit from India's digital future.

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## THE EVOLVING LANDSCAPE OF GENDER AND EMPLOYMENT WITH REFERENCE TO MUMBAI SUBURBAN REGION

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### Abstract

*This study demonstrates that despite progress in some areas, gender disparities in employment persist, particularly for women. To achieve true gender equality in the workplace, comprehensive policy interventions and a shift in societal attitudes are essential. The findings of this research highlight the importance of considering the intersectionality of gender in employment. Future studies should focus on exploring the unique experiences of marginalized groups of women. The increasing casualization of labor has disproportionately affected women, exacerbating existing gender inequalities. Policy efforts must prioritize the creation of secure and equitable employment opportunities for all. The data clearly shows that even when women obtain higher education, this does not eliminate the gender disparity in employment. This shows that there are other factors that must be addressed, such as workplace culture, and bias.*

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### INTRODUCTION

The intersection of gender and employment is a complex and crucial area of study. It examines how societal gender norms, roles, and expectations influence and are influenced by the world of work. Traditional gender roles often dictate the types of work considered "suitable" for men and women. This leads to occupational segregation, where certain industries and positions are dominated by one gender. Gender stereotypes can also lead to biases in hiring, promotion, and performance evaluations. **Overall, women in our society often hold a secondary position to men. This inequality manifests in various ways, sometimes subtle and overlooked. Women have limited influence in important decision-making processes across almost all aspects of life, and generally lag behind men in socio-economic indicators. These disparities are frequently the result of intentional actions by those in power, which is why gender discrimination has become a major point of discussion in recent decades.**

Specifically, gender bias is a globally recognized issue, with "equality of opportunity" and "equality of treatment" being seen as crucial for achieving gender equality. It's acknowledged that gender discrimination exists worldwide, regardless of economic development, political systems, or cultural backgrounds. This problem has drawn significant concern from various groups, including academics, politicians, policymakers, and social activists, who are all working to combat discrimination against women. The relationship between gender and employment is a complex and multifaceted issue that has been a subject of extensive research and policy discussions. Here's an introduction to some of the key problems:

#### Core Issues:

- **The Gender Pay Gap:**
  - This is perhaps the most well-known issue. It refers to the persistent difference in earnings between men and women, even when they perform similar work.
- **Occupational Segregation:**
  - This occurs when men and women are concentrated in different types of jobs. Women are often overrepresented in lower-paying sectors like care work and education, while men dominate higher-paying fields like technology and engineering.



- **Lack of Representation in Leadership:**
  - Women are significantly under represented in senior management and leadership positions across various industries. This "glass ceiling" limits their career advancement and decision-making power.
- **Work-Life Balance Challenges:**
  - Women often bear a disproportionate share of caregiving responsibilities, which can create conflicts between work and family life. This can lead to career interruptions, part-time work, or leaving the workforce altogether.
- **Discrimination and Bias:**
  - Gender discrimination and unconscious bias can manifest in various ways, including hiring, promotion, and performance evaluations. These biases can create barriers to women's career advancement.
- **Sexual Harassment and Workplace Violence:**
  - Sexual harassment and workplace violence are serious issues that disproportionately affect women. These experiences can create hostile work environments and have significant negative impacts on women's well-being and career trajectories.
- **Intersectionality:**
  - It is vital to recognize that gender intersects with other social identities, such as race, ethnicity, class, and sexual orientation. Women from marginalized groups face compounded challenges in the labor market.
- **The Informal Economy:**
  - Many women work in the informal economy, where they often lack legal protections, job security, and benefits.

## REVIEW OF LITERATURE

(Ganguly and Chandrima, 2022) The paper titled “**Employment Pattern Gender Issues and Wage Differential in the Organized Manufacturing Sector of India**” investigates the evolving landscape of employment within India's formal manufacturing sector. It will analyze how liberalization and increased labor market flexibility, particularly regarding union influence, have reshaped employment patterns. The study will specifically examine changes in overall job numbers, rural-urban distribution, the prevalence of contract work, and women's participation, while also exploring the resulting wage disparities across industries and the role of worker casualization. This study aims to dissect the transformations in India's organized manufacturing employment, with a particular emphasis on the impact of liberalization on female participation and the rise of contract labor. It will analyze industry-specific factors contributing to employment changes, including wage differentials, and assess how union dynamics influence these trends at national and regional levels. This study examines the changing employment patterns in India's organized manufacturing sector, focusing on the impact of liberalization, unionization, and the rise of contract work. It investigates industry-specific factors affecting total employment, rural-urban distribution, female participation, and inter-industry wage differentials, with a focus on casualization.

(Poonam, 2024) The paper titled “**Gender Disparities in Employment and Wage Rates in Post Reform India A Sectoral Analysis of Regional Inequalities**” Analysis of post-reform Indian labor markets reveals persistent and significant gender disparities in employment across all four income regions (N-C, N-E, N-W, and S&S-W). This disparity exists regardless of location (rural/urban),

economic sector, or educational attainment .Furthermore, these gender disparities have generally worsened in the post-reform era across most regions and sectors, with the notable exception of the tertiary sector. Disparities have also increased across all educational levels in almost all regions and sectors. Examining employment modes further highlights the issue. The ratio of female to male employment has declined, indicating a widening gender gap for self-employed and casual workers in both rural and urban areas across all regions, except for self-employed workers in urban N-E. Conversely, the gender gap has narrowed for regular workers in both rural and urban settings across all four income regions.

**(B C, Manjula 2002)** The paper titled “**An evaluation of employment programmes for women**” describes that Technology plays a crucial role in boosting productivity and reducing poverty, primarily through sector development and a 'trickle-down' effect. However, for marginalized groups to benefit fully, targeted technology adoption and development are essential, supported by strong infrastructure and institutional frameworks. Programs like the Prime Minister's Rozgar Yojana (PMRY) aim to provide employment opportunities and address these gaps. Technology implementation in previous programs was often ad-hoc and inconsistent. The PMRY's stability and increased assistance have created a more consistent environment for technology integration.

**(Gupta and Pampa Sen, 2003)** The paper titled “**Women and work in India a study of some aspects of gender bias**” reveals a persistent and concerning intensity of gender bias across multiple dimensions, particularly evident in labor market segregation. While there has been a slight improvement over the past two decades, the overall scale of the problem remains alarmingly high, demanding targeted policy interventions. Existing research often focuses on gender bias through metrics like relative female workforce participation rates (RFWPR) or indices such as the Human Development Index (HDI) and Gender-related Development Index (GDI). These measures primarily examine the average level of gender inequality. However, this study uniquely provides an in-depth examination of segregation patterns within the Indian labor market. This segregation analysis goes beyond simply looking at the average ratio of female to male employment (Fi/Mi). It also considers the variability of this ratio across different occupations and industries. This approach highlights that while increasing the average female participation is necessary, it is insufficient. To effectively reduce gender bias, policies must simultaneously address the *uneven distribution* of women across the labor market. Without targeting this variability, the impact of policies aimed at increasing overall female participation may be limited.

## RESEARCH GAP

The existing studies did not explore some aspects, which highlighted the need for study. The aspects are

- Why gender-based inequalities in the workplace exist in the first place
- The obstacles women face in advancing their careers and reaching leadership positions
- The factors contributing to the persistent pay gap between men and women
- How to create successful solutions to fix these problems

## RESEACH OBJECTIVES

- To identify and analyse gender disparity.
- To assess the obstacles faced by women in their career opportunities.
- To explore the factors indulged in pay gap between individuals.
- To evaluate the effectiveness of current plans and policies.

## HYPOTHESES

- $H_0$  = There does not exist any significant gender disparity
- $H_1$  = There exists gender disparity
- $H_0$  = There are no significant obstacles faced by women at their work
- $H_2$  = There are obstacles faced by women at their work hampering their career.
- $H_0$  = There does not exist any significant pay gap among the individuals.
- $H_3$  = There exists and women are prone to pay gap
- $H_0$  = The current plans and policies are not significantly applicable everywhere.
- $H_4$  = The plans and policies formulated are applicable

## RESEARCH DESIGN

This study will use descriptive and exploratory research designs. The descriptive design will document the gender inequality and gender biasness while the exploratory design will explore the level of gender biases and what are the main reasons for biasness.

### Population:

The population will consist of all individuals residing in Mumbai Suburban, with various job profiles.

### Sample Size:

Approximately 100 respondents has responded to a structured questionnaire giving their valuable feedback on gender and their employment status based on gender.

## DATA COLLECTION METHODS

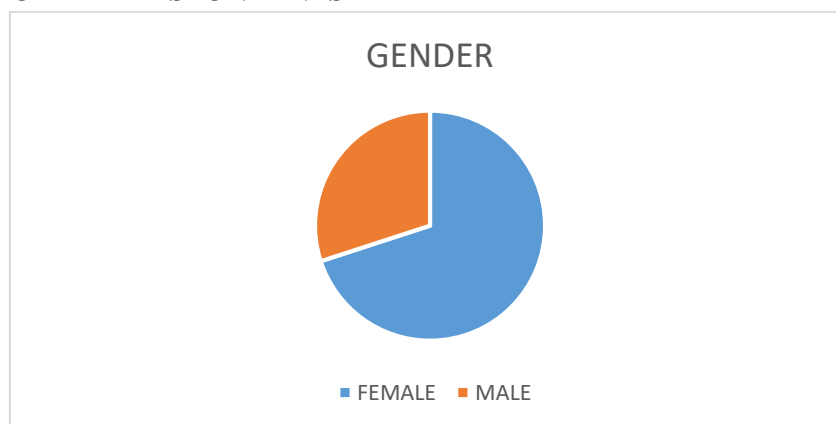
- **Primary Data :** Data will be collected through structured questionnaire for quantitative insights on gender and its relation with employment.
- **Secondary Data:** Secondary Data will be sourced from academic journals, newspaper and government publication to support the study's findings.

## LIMITATIONS OF THE STUDY

- The study will be limited to Mumbai Suburban , which may not reflect the problems of other regions.
- Self- reported data may be subject to biases.
- The sample size of 100 may not fully represent the entire population of individuals in Mumbai Suburban.

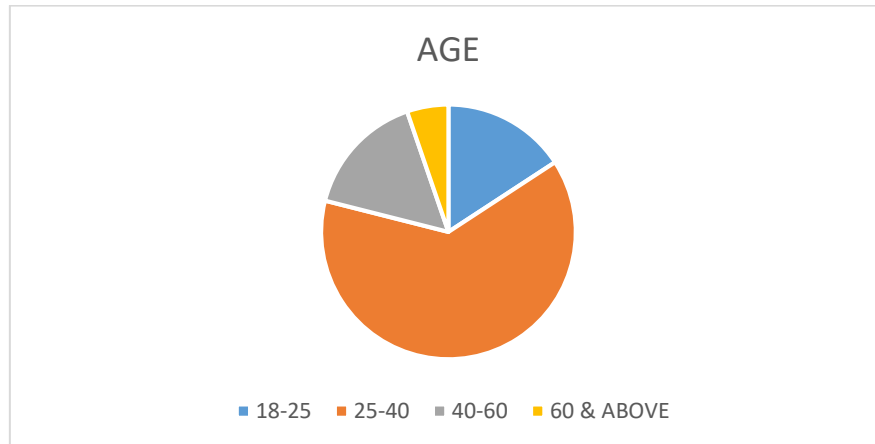
## DATA ANALYSIS AND INTERPRETATION

### 1. GENDER OF THE RESPONDENTS



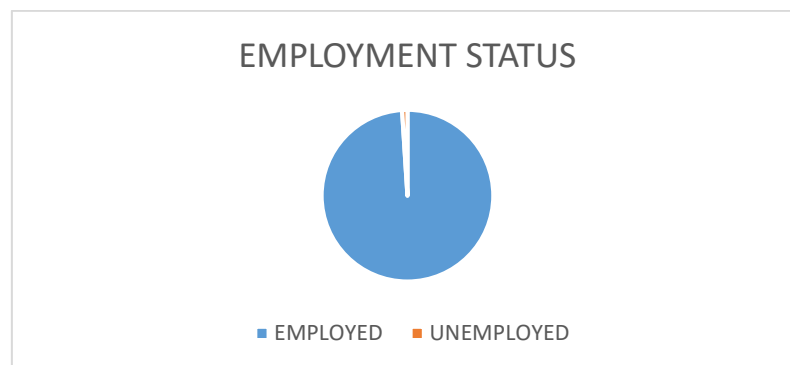
Interpretation : Of the total 100 respondents, 60 are Females and 40 are Males

## 2. AGE OF THE RESPONDENTS



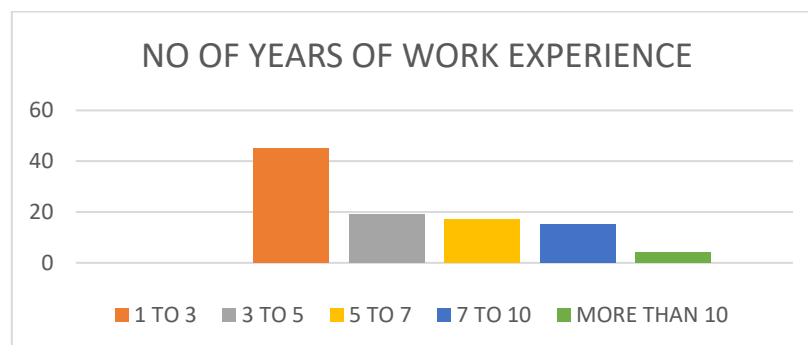
Interpretation: The total respondents are categorised on the basis of age which comprises of 15 individuals from age group of 18 to 25 years, 60 individuals are from age group of 25 to 40 years, 15 individuals comprises from 40 to 60 years and 10 individuals are from 60 and above age group.

## 3. EMPLOYMENT STATUS OF RESPONDENTS



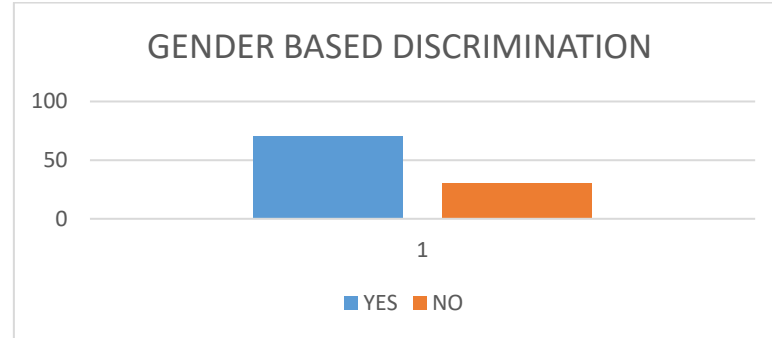
Interpretation: 99% out of 100 respondents are employed and 1% is unemployed.

## 4. HOW MANY YEARS OF EXPERIENCE DO YOU HAVE?



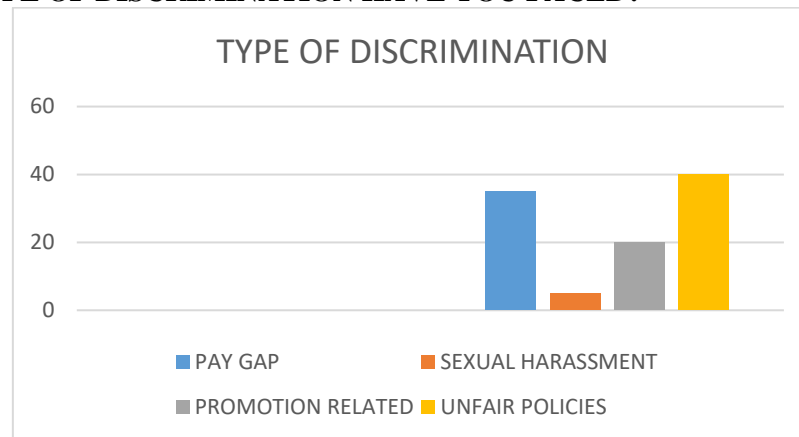
Interpretation : The analysis shows that 45 respondent have around 1-3 years of work experience, whereas 19 respondent have 3-5 years of experience, 17 respondents have 5-7 years of experience, 15 respondents have 7-10 years of experience and 4 respondents have more than 10 years of experience.

### 5. HAVE YOU EVER FACED ANY GENDER BASED DISCRIMINATION?



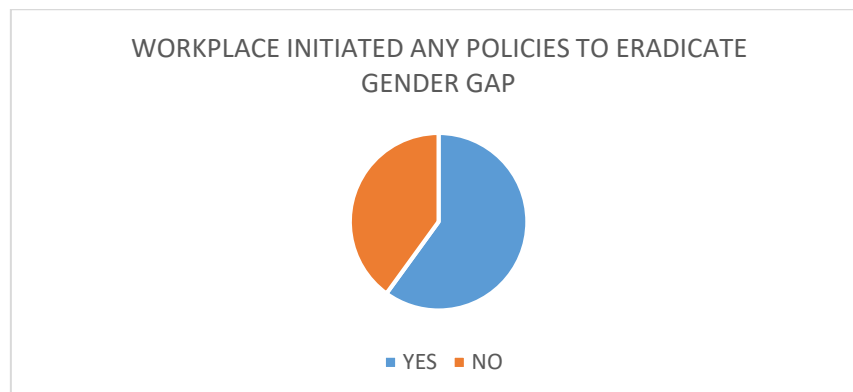
Interpretation: 70% of respondents have faced gender based discrimination whereas 30% have not experienced gender based discrimination against them.

### 6. WHAT TYPE OF DISCRIMINATION HAVE YOU FACED?



Interpretation : Out of the total respondents 35% of individuals have faced discrimination on the basis of pay scale, 5% of individuals have faced sexual harassment at workplace, 20% has faced promotion related discrimination whereas 40% of the respondents have experienced unfair policies like long hours of work, not providing primary sanitization facilities, leave related issues and many more.

### 7. HAVE YOUR WORKPLACE INITIATED ANY POLICIES TO ERADICATE GENDER GAP ?



Interpretation : 60% of the populations workplaces have taken an initiative to eradicate the practices against gender gap but still 40% of the populations workplaces has not taken an initiative to solve such issues.

**8. WHAT WERE THE POLICIES ACCEPTED BY YOUR ORGANISATION?**

Interpretation : 40% of the organisations have started giving equal pay scale irrespective of the gender biasness, 40% of the organisations have started giving promotions on the bases of work and not on bases of gender, 19% of the organisations have taken a step forward to file cases against sexual harassment and 1 % of the organisations have resolved all the issues related to gender and employment.

**CONCLUSION**

- Even with advancements in education and legislation, significant gender disparities in employment remain.
- These disparities manifest in pay gaps, occupational segregation, and limited access to leadership positions.
- Gender intersects with other social categories (race, class, ethnicity, etc.) to create unique experiences of employment inequality.
- Addressing gender disparities in employment requires comprehensive policy interventions, including: Equal pay legislation, Affordable childcare, Flexible work arrangements and Anti-discrimination policies
- Creating inclusive and equitable workplace cultures is essential for advancing gender equality.

**REFERENCES**

*Academic Journals*  
*Reports*  
*Newspapers*  
*Government Agencies.*

## STUDY OF INDIAN BANKS' PERFORMANCE: COMPARISON OF PUBLIC SECTOR BANKS AND PRIVATE SECTOR BANKS

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### **Abstract**

*The development of the country's financial institutions is an essential factor that contributes to economic growth. Bank is the financial institution that is crucial to the nation's progress and development. So, it is imperative that banking sector gives improved positive returns on year-on-year basis to elevate the development of the nation. India's economic performance is underpinned by banking sector performance. The banks in public sector and private sector play significant role in the burgeoning banking sector revenues. This study outlines a comparison between performance metrics of banks in public sector and private sector in India. The study provides a performance analysis of the public sector as well as private sector banks in India from 2019-20 to 2023-24.*

**Keywords:** *Bank performance, Performance metrics, Return on Assets (ROA), Return on Equity (ROE), Net Interest Margin (NIM)*

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### **1. Introduction:**

A "Bank" is a type of financial organization that takes deposits and uses the funds for lending. In addition to producing money, banking institution also handle its security, deposit management, investment management, and even international money transfers. Banks accelerate the progress of the nation economy. Thus, the banking industry is essential to any nation's development and growth. Serving as intermediaries in the financial system, banking institution perform essential duties that might promote economic expansion (Kaushal et al, 2017).

After globalisation and privatisation, there was a spur in the development of all the sector including financial sector in India. It had opened the path for sectors to establish, develop, and progress which ultimately led to the overall growth of the economy. Alongside public sector banks, other private institutions have entered the banking industry and have begun functioning and making a profit. Over the past two decades, private sector banks have also played a significant role in improving the banking industry's performance.

Banking sector stability is an substantial driver of GDP growth (Jokipii et al, 2013). Banks performance has indeed influence on the performance of economy. The development of the financial sector has significantly aided in the nations' economic expansion (Ahmed et al, 1998). Sehrawat and Giri (2015) also confirms that a long-run relationship between financial development and economic evolution for India and recommends appropriate reforms in financial markets to attain sustainable economic growth. Thus, it is essential to comprehend how India's public and private banks contribute to the country's overall economic growth. Understanding the performance of banks in the public and private sectors will help achieve this.

### **2. Review of Literature:**

The Indian financial system has seen substantial changes because of financial sector reforms over the last 35 years. As a result, the growth and development of the financial system has enabled an increasing amount of profitable investment. Financial intermediation has increased throughout time, leading to a



positive feedback cycle of stronger real economic growth, better investment performance, and larger savings. (Joshi S., 2016).

Alam M. S. et al. (2021) examined the relationship over time between banks' performance and growth of the economy of India. A panel of data from 20 banks from public sector covering the years '2009 to 2019' was covered in the study. An analysis shows "a substantial association between interest margin and return on assets with economic growth and also assesses the relationship between interest margin, return on assets, bank investment, and lending capacity of the bank with the nation's GDP".

Singh K. (2024) conducted study for seven years of 12 Banks of Public Sector (PSB) and 10 Banks of non- Public Sector from the Nifty PSU Bank Index and Nifty Private Bank Index. The study demonstrates that the behaviour of indicators of performance and returns volatility for PSBs and non-PSBs differs substantially.

Muthukamu M. (2018) have determined that private sector stocks have produced greater returns than public sector banks and have experienced greater volatility during the study period after examining the performance of banking sector stocks and the volatility related to that performance from January 2008 to June 2018.

Goel C. and Rekhi C. B. (2013) found that public sector banks are not as lucrative as other sectors, and that efficiency and profitability are intertwined. The key to improving performance depends on ROA, ROE, and NIM. This study was undertaken to measure the relative performance of Indian banks.

Chaluvadi et al. (2018) measured and assessed 44 Indian commercial banks' performance efficiency between 2008 and 2013. Private sector banks (PVBs) are more productive than public sector banks (PSBs), according to comparison research comparing the two types of banks.

Overview of different study gives an impetus to understand and gauge India's private as well as public sector banks' performance through measurement of performance metrics.

### **3. Objectives of the study:**

- To compare Return on Assets (ROA) of banks in public sector with private sector
- To compare Return on Equity (ROE) of banks in public sector with private sector
- To compare Net Interest Margin (NIM) of banks in public sector with private sector

### **4. Hypothesis of the study:**

H01: There is no statistically significant difference between ROA of banks in public sector and private sector

H02: There is no statistically significant difference between ROE of banks in public sector and private sector

H03: There is no statistically significant difference between NIM of banks in public sector and private sector

### **5. Limitation:**

- A Generalisations of the result is derived from the limited number of samples.
- Study can be conducted for a longer period of time.

### **6. Research Methodology:**

- Data Collection: The source of research is secondary financial data, collected from the bank's financial statements and other relevant manuals and publications.
- Sample Size: 10 Public Sector banks as well as 10 Private Sector banks listed on NSE and BSE are viewed for study purpose

- Method of Data Analysis: Variables are calculated through EXCEL. Mean and T test statistical tool used to compare variable of two groups.
- Period of study: Five years period i.e., 2019-20 to 2023-24 are covered for the study

## 7. Result and Analysis:

Following are the statistical Calculations of performance metrics of public as well as private sector banks

Statistical Calculations	ROA		ROE		NIM	
	Public Sector Banks	Private Sector Banks	Public Sector Banks	Private Sector Banks	Public Sector Banks	Private Sector Banks
Mean	0.3484	1.2114	5.8234	10.15	2.4278	3.668
Standard Deviation	0.29592912	0.59259808	5.8073364	4.76810915	0.2148373	1.00438903
Observations	10	10	10	10	10	10
Pearson Correlation	0.13769876		0.1818435		-0.2344731	
df	9		9		9	
t Stat	-4.3674464		-2.0088		-3.6474235	
P(T<=t) one-tail	0.00090189		0.037737		0.00266944	
t Critical one-tail	1.83311293		1.8331129		1.83311293	
P(T<=t) two-tail	0.00180379		0.075474		0.00533888	
t Critical two-tail	2.26215716		2.2621572		2.26215716	

The average ROA of banks in private sector (1.21) is significantly greater than the average ROA of public sector banks (0.35). The average ROE of banks in private sector (10.15) is significantly greater than the average ROE of banks in public sector (5.82). The average NIM of banks in private sector (3.67) is significantly greater than the average NIM of banks in public sector (2.43).

Accordingly, mean value of banks in private sector for performance metrics ROA, ROE and NIM shows higher value than public sector banks.

The critical t-value is 2.262 at 0.05 i.e. 5% significant level for 9 degrees of freedom. The t-test indicates significant differences in means of Public Sector Banks as well as Private Sector Banks for ROA and NIM as t value is greater than t critical value whereas with respect to ROE t value is slightly lower than t critical value. Therefore, null hypothesis is rejected. It means there is significant difference between ROA and NIM of public sector banks as well as private sector banks.

The results indicate that private sector banks exceed public sector banks in the context of profitability (ROA, ROE and NIM) and there are significant differences in performance indicators across public and private sector banks.

## 8. Finding Implications:

These results have inferences for policymakers, regulators, and bank managers, highlighting the need to address the performance gaps of the banking sector.

## 9. Conclusion:

In this analysis, the financial results of Indian 'private sector banks' (PVSBS) and 'public sector banks' (PSBs) were compared. The results demonstrate that banks in the private sector outperform those in the public sector in terms of profitability. These performance indicators depend on the factors like governance, management quality, and operational efficiency etc., which require to be improved. In addition to providing stakeholders with useful information to enhance the long-term viability and

competitiveness of public sector banks, this study adds to understanding of the performance dynamics of the Indian banking system.

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### Appendices:

#### Appendix A: Performance Metrics - Public Sector banks

ROE	IM	Mar-24	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19	Mar-18	Mar-17	Mar-16	Mar-15	Mar-14
		16.75	17.46	2.48	2.44	2.42	2.62	2.58	2.82	2.88	2.45	2.56
		14.36	15.85	2.37	2.49	2.55	2.83	2.82	2.87	2.88	2.45	2.56
		6.21	9.08	2.14	2.23	2.45	2.87	2.88	2.87	2.88	2.45	2.56
		16.03	18.69	1.81	2.08	2.15	2.33	2.45	2.33	2.45	2.45	2.56
		2.74	8.39	2.09	2.41	2.18	2.35	2.56	2.35	2.56	2.45	2.56
		18.4	22.24	2.53	2.49	2.62	2.89	3.19	2.89	3.19	2.45	2.56
		11.68	14.94	2.07	2.3	2.33	2.55	2.62	2.55	2.62	2.45	2.56
		8.11	6.78	2.15	2.16	2.41	2.44	2.5	2.44	2.5	2.45	2.56
		12.61	15.38	2.45	2.5	2.49	2.84	2.93	2.84	2.93	2.45	2.56
		8.69	3.83	2.04	2.04	2.18	2.17	1.92	2.17	1.92	2.45	2.56

Sr. No.	Public Sector Banks	ROA					
		Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	Mar-22
1	SBI	0.36	0.45	0.63	0.91	0.98	12.33
2	BOB	0.04	0.07	0.56	0.96	1.12	8.46
3	Central Bank of India	-0.31	-0.24	0.27	0.38	0.57	4.38
4	Canara Bank	-0.3	0.22	0.46	0.78	0.97	9.85
5	Punjab National Bank	0.04	0.16	0.26	0.17	0.52	3.9
6	Bank of Maharashtra	0.23	0.27	0.49	0.97	1.32	9.35
7	Union Bank of India	-0.52	0.27	0.44	0.65	0.98	7.94
8	UCO Bank	-1.03	0.06	0.34	0.61	0.51	4.45
9	Indian Bank	0.24	0.47	0.58	0.74	1.01	10.52
10	Punjab & Sind Bank	-0.98	-2.47	0.85	0.96	0.4	7.41

Source: Moneycontrol.com

Appendix B: Performance Metrics - Private Sector banks

IM					
	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24
2.75	2.93	2.81	3.26	3.37	
3.67	3.71	3.48	3.52	3	
3.02	3.16	3.36	3.92	3.97	
3.74	4	3.91	4.39	4.32	
2.32	2.86	3.03	3.45	3.9	
3.92	3.72	3.73	3.84	4	
3.36	3.43	3.11	3.24	2.99	
6.89	6.57	6.27	5.94	5.8	
2.57	2.74	2.69	2.77	2.68	
3.43	3.16	3.39	3.71	3.6	

Sr. No.	Private Sector Banks	ROA						ROE					
		Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	Mar-20	Mar-21
1	Axis Bank	0.17	0.66	1.1	0.72	1.68	1.91	6.48	11.3	7.63	16.45		
2	HDFC Bank	1.71	1.78	1.78	1.78	1.77	15.35	15.27	15.39	15.74	14.62		
3	ICICI Bank	0.72	1.31	1.65	2.01	2.18	6.99	11.21	13.94	16.13	17.37		
4	Kotak Mahindra Bank	1.65	1.81	1.99	2.23	2.29	12.25	11.01	11.9	13.17	14.24		
5	IDBI Bank	-4.29	0.45	0.8	1.1	1.55	-46.8	4.45	7.34	9.82	13.43		
6	IndusInd Bank	1.43	0.78	1.14	1.61	1.73	12.84	6.58	9.73	13.6	14.31		
7	City Union Bank	0.95	1.11	1.23	1.4	1.43	8.99	10.14	11.54	12.57	12.08		
8	Bandhan Bank	3.29	1.91	0.09	1.4	1.25	19.89	12.66	0.72	11.2	10.31		
9	Federal Bank	0.85	0.78	0.85	1.15	1.2	10.63	9.86	10.05	14	12.79		
10	Karur Vysya Bank	0.34	0.48	0.84	1.22	1.51	3.56	5.16	8.86	12.88	15.98		

Source: Moneycontrol.com

## THE IMPACT OF WORKPLACE MENTAL HEALTH AND WELL-BEING INITIATIVES ON GEN-Z EMPLOYEE ENGAGEMENT: A LITERATURE REVIEW WITH INSIGHTS FROM THE TECHNOLOGY INDUSTRY

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### *Abstract*

*The increasing presence of Generation Z (Gen Z) in the workforce has prompted organizations to reassess their employee engagement strategies. As a generation that prioritizes mental health, work-life balance and well-being, Gen Z employees expect workplaces to provide psychological safety, flexibility and access to mental health resources. This review of literature examines the role of workplace well-being initiatives in enhancing Gen Z employee engagement, with a dedicated attention on the technology Industry, where young professionals constitute a significant proportion of the workforce. This study analyses the available research from peer-reviewed journals, industry reports and empirical studies to explore key mental health initiatives such as Employee Assistance workshops, mindfulness training and flexible work arrangements. The review highlights that companies in the technology sector that actively invest in well-being programs experience higher engagement, productivity and retention among their Gen Z employees. However, challenges remain in measuring the long-term impact of these initiatives and adapting them to fast-paced, high pressure work environments. Moreover, while digital solutions such as AI-driven mental health support tools, virtual therapy sessions and wellness apps are increasingly used in technology industry, their effectiveness in fostering sustained engagement requires further study and exploration. There is also a need for industry-specific frameworks to assess how workplace culture, leadership styles and organizational policies influence Gen Z's well-being and job satisfaction. This study contributes to the current debate on workplace mental health by reviewing existing literature and identifying gaps in the research. It helps HR Executives to formulate efficient programs tailored to Gen Z employees in the technology industry for curbing stress and achieving overall employee well-being.*

**Keywords:** □ Generation Z □ Employee Engagement □ Mental Health Initiatives □ Workplace Wellness □ Technology Industry □ Flexible Work Arrangements

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### **Introduction**

As Generation Z (Gen Z) enters the workforce in larger numbers, companies are realizing the need to adapt their approach to employee engagement. Unlike previous generations, Gen Z emphasises mental health and overall well-being. They look for workplaces that just not give career growth but also ensure psychological safety, flexible work options, and access to mental health support. This shift has made it necessary for organizations to rethink traditional engagement strategies, especially in industries like technology, where young professionals make up a large portion of employees.

The tech industry is known for its fast-paced and high-pressure work environment, which generates stress and burnout. Because of this, organisations understood the need to invest in workplace wellness initiatives, such as Employee Assistance Programs (EAPs), mindfulness training, and social connectivity programs. These initiatives aim to create a healthier work culture and improve employee engagement. However, while workplaces have focused increasingly on mental health, there is still room for clear ideas of how the efforts impact the enthusiasm and commitment of Gen Z's.

This study examines the connection between workplace mental health initiatives and Gen Z engagement, focusing majorly on the technology sector. By reviewing research published between 2015 and 2025, the study explores how wellness programs influence Gen Z employees and whether current workplace strategies are effectively meeting their needs. Previous research, such as the study by **McKenney Jones (2022)**, found that while wellness programs exist, their participation rates remain

low. Additionally, research by **Piecuch-Jodłowiec (2024)** emphasizes the importance of human-centric management in retaining Gen Z employees, showing that companies focusing on mental health and personal development are more successful in keeping young talent engaged.

By analysing existing studies and identifying research gaps, the paper aims to give insights into how mental health programs in the tech industry can be improved for Gen Z. The findings can help professionals, business leaders, and policymakers understand what truly matters to Gen Z workers and to facilitate an environment in organisations that aids their well-being while also improving productivity and retention.

### **Theoretical Framework**

To ground this review, several key theories are relevant:

**Job Demands-Resources (JD-R) Model:** The model puts forward that office resources (like mental health initiatives) can help mitigate job expectations and reduce burnout, leading to higher engagement. For Gen Z employees, the availability of mental health resources may serve as a crucial buffer against high job demands.

**Self-Determination Theory (Deci & Ryan):** This theory highlights the significance of autonomy, relatedness and competence for fostering intrinsic motivation. Gen Z values work environments that satisfy these needs through flexible work options and supportive mental health practices.

**Social Exchange Theory:** This theory suggests that when organizations invest in the well-being of their employees, a reciprocal relationship is established, promoting loyalty and engagement. HR strategies that focus on mental health can enhance this positive exchange, especially for a generation that values authenticity and care.

### **Methodology**

A systematic literature review approach was used to gather and analyse relevant studies on workplace mental health initiatives and their effect on Gen Z engagement. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) framework was followed, ensuring a structured and all-inclusive review of prevailing research work. The **Search Strategy** used here is from Research databases, including Google Scholar, PubMed, IEEE Xplore, and Scopus, which were searched by using keywords such as “Gen Z workplace mental health,” “technology industry employee engagement,” “mental health programs in tech,” and “digital mental health interventions.” **Included sources are** Peer-reviewed journal articles, industry reports, and various empirical research studies published between 2015 and 2024. **Excluded sources are** Opinion articles, non-English publications, and studies that did not address workplace mental health programs. The shortlisted studies were thoroughly studied for their objectives, research methodologies, major findings and future directions for research. Themes related to workplace mental health strategies and Gen Z engagement were identified and synthesized.

### **Results and Discussion**

**3.1 Understanding Gen Z Workplace Expectations** Gen Z employees, typically defined as those born between 1997 and 2012, differ from their predecessors in how they approach work and well-being. Studies suggest that this generation highly values flexibility, inclusivity, and psychological well-being in the workplace (**Twenge, 2020**). Unlike Millennials or Baby Boomers, Gen Z tends to choose an employer on the basis of the availability of resources for mental health and work-life balance (**Deloitte, 2022**).



### **Major Workplace Mental Health Initiatives**

**Employee Assistance Programs (EAPs)** EAPs offer confidential counselling and psychological support services to employees. Research suggests that organizations implementing EAPs report lower stress levels and improved job satisfaction among workers (Attridge, 2019). Leading technology firms such as Google and Microsoft have embraced EAPs to help mitigate burnout and anxiety among their workforce.

**Mindfulness and Stress Management Training** Mindfulness programs and stress management workshops have gained traction as effective tools for enhancing employee engagement. Research shows that employees who take part in mindfulness sessions demonstrate higher emotional resilience and focus at work (Lomas et al., 2017). Tech companies like Salesforce have introduced meditation spaces and mindfulness training to support employee well-being.

### **Flexible Work Models**

In Gen Z employees who value work-life balance, remote and hybrid work environments have become ever more popular. Research by Bloom et al. (2021) indicates that flexible work models contribute to reduced workplace stress and increased job satisfaction. Companies such as Twitter and Spotify have adopted remote-first policies to accommodate employees' evolving expectations.

### **Insights from Correlational Studies on Wellness Programs and Gen Z Engagement**

A study by McKenney Jones (2022) explored whether wellness programs like fitness, nutrition, mindfulness, and social connectivity impact Gen Z workplace engagement. The findings showed no clear link between program participation and engagement. However, Gen Z employees testified higher commitment levels than national averages, even though participation in these programs was generally low. Among the available programs, social connectivity and mindfulness initiatives were the most commonly used, especially by women. The study suggests that workplace wellness programs may need to be more engaging and better suited to Gen Z's needs, and further study in the area is required to understand their long-term effects.

Additionally, Piecuch-Jodłowiec (2024) emphasizes the necessity of adapting HRM practices to align with Generation Z's expectations in an era of human-centric management. The research highlights that Gen Z strongly prefers workplaces that integrate mental health, personal development, and ethical considerations into their core functions. Workplaces that give priority to these factors are in a better position to bring together and preserve young talent while fostering innovation and efficiency. The transition from a productivity-focused approach to a more balanced, well-being-centred strategy highlights the need to create work environments that make employees feel valued and understood. This turn benefits Gen Z and results in a healthier and more inclusive workplace culture, reinforcing the need for evolving HRM strategies to maintain long-term engagement and satisfaction.

### **Digital Mental Health Solutions**

#### **AI-driven Mental Health Assistance**

Artificial intelligence is playing a growing role in workplace mental health programs. AI-powered chatbots and virtual assistants provide on-demand mental health support, offering a convenient alternative to traditional therapy (Fiske et al., 2020). Technology firms, including IBM, have implemented AI-driven mental health platforms to support their employees.

#### **Wellness Apps and Virtual Therapy**

Wellness applications, such as Calm and Headspace, provide employees with meditation and relaxation tools. Virtual therapy sessions, offered by platforms like BetterHelp, have become an integral

part of corporate wellness programs. However, more refined research is required to evaluate the long-term effectiveness of these interventions in workplace settings (**Bakker & Demerouti, 2022**).

### **Challenges in Implementing Workplace Mental Health Programs**

Despite the advantages of workplace well-being initiatives, several challenges exist in their implementation. Measuring the success of such assistance programs remains difficult because of the subjective nature of well-being (**Guest, 2017**). Additionally, the high-pressure environment of the technology sector often limits employees' ability to fully engage in well-being activities.

### **Limitations and Bias**

Many studies rely on self-reported data, which may include response bias. Moreover, voluntary participation in wellness programs can skew results, as employees who opt in might already have a positive outlook on mental health initiatives. Recognizing these limitations is crucial for interpreting the findings and guiding future research.

### **Practical Recommendations**

Based on the reviewed literature and analysis, the following recommendations are advised for organizations aiming to enhance Gen Z engagement through mental health initiatives:

**Normalize Mental Health Conversations:** Develop a workplace culture where discussing mental health is encouraged and free of stigma.

**Integrate Digital and Human Support:** Combine AI-driven tools with personalized, human-led counselling to offer a well-rounded mental health program.

**Tailor Programs to Gen Z Preferences:** Focus on enhancing social connectivity and mindfulness initiatives, as these are favoured by Gen Z, particularly female employees.

**Enhance Flexibility:** Adopt remote and hybrid work models that cater to the work-life balance needs of Gen Z.

**Invest in Leadership Training:** Equip managers with skills to support mental health initiatives and foster a human-centric work environment.

**Develop Robust Evaluation Methods:** Implement comprehensive frameworks to measure the long-term impact of mental health programs on employee engagement and well-being.

### **Recommendations for Future Research**

A need for comprehensive frameworks is inevitable to evaluate the continuing impact of mental health initiatives on Gen Z employees. More focus on longitudinal studies that assess the efficacy of AI-driven mental health interventions and their influence on employee retention should be included in future research. Furthermore, organizations must develop sustainable strategies that prioritize employee well-being while maintaining productivity in a competitive industry.

### **Conclusion**

The incorporation of mental health and well-being initiatives in the workplace is vital for engaging Generation Z, specifically in the fast-paced technology sector. While programs such as EAPs, mindfulness training, flexible work arrangements, and digital interventions have shown promise in enhancing engagement, challenges remain in tailoring these initiatives to the personalised needs of Gen Z and in measuring their long-term impact. By opting for a human-centric management approach and continuously refining their strategies, organizations can make accommodating work environments that not only improve employee contentment and retention but also drive productivity and innovation.

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**A STUDY ON ROLE OF EMERGING TECHNOLOGIES FOR BUSINESS****Asst. Prof- Mrs.Carol Dmello.***Shankar Narayan College of Arts and Science**Bhayandar (east) Email- caroldmellocollege@gmail.com*

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**Abstract**

*Emerging technologies are transforming the entrepreneurial landscape by fostering innovation, improving operational efficiency, and enabling market disruption. In India, these advancements—spanning Artificial Intelligence (AI), blockchain, Internet of Things (IoT), and machine learning—have catalysed the expansion of businesses and reshaped traditional industries. This paper investigates the role of emerging technologies in entrepreneurial success, emphasizing their applications in the context of India. AI is being leveraged for customized experiences for each customer, predictive analytics, and operational automation, while blockchain enhances security and transparency in financial transactions. IoT facilitates real-time data collection, enabling start ups to create creative solutions for urban living and industry-specific challenges. Furthermore, government initiatives like "Startup India" have created a supportive ecosystem by providing funding, mentorship, and regulatory frameworks. Indian companies such as Paytm exemplify the transformative impact of these technologies, using digital platforms to meet local demands and achieve global competitiveness. The democratization of technology through affordable internet access and mobile penetration has further empowered entrepreneurs to access broader markets and talent pools. However, challenges such as skill gaps and data privacy concerns remain significant barriers to adoption. This study underscores the necessity for strategic utilization of emerging technologies to sustain entrepreneurial growth in India while fostering a culture of innovation. By embracing these advancements, Indian entrepreneurs can position themselves at the forefront of global innovation, ensuring financial success as well as societal well-being.*

**Keywords:** *Emerging technologies, Internet of Things (IOT), block chain, Artificial Intelligence (AI), machine learning, entrepreneurship, innovation.*

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**Introduction**

Emerging technologies are essential in transforming India's innovation and growth landscape, enabling firms to alter their traditional methods of operation. These technologies are considered significant for achieving the goals of entrepreneurial firms. Both large and small Businesses can use these technologies to develop competencies that provide a competitive edge in uncertain markets. Pioneering companies that incorporate innovative technologies accelerate entrepreneurial endeavours toward success and sustainability.

Several new trends are changing the technological development in Indian startups. There is a surge in the adoption of technologies such as blockchain, the Internet of Things (IoT), and augmented reality (AR), which have the capacity to transform sectors like finance, healthcare, and manufacturing. Indian startups need to embrace these emerging technologies, focus on sustainability, and forge strategic partnerships to stay ahead

Moreover, improvements in physical and digital infrastructure have contributed to India's booming startup ecosystem. India's road network has grown significantly, making it the second largest in the world. The number of operational airports has also doubled. Internet subscribers have risen substantially, with average monthly data consumption increasing significantly due to low-cost data rates offered by private sector providers. These enhancements has made digital access to markets possible for entrepreneurs, irrespective of location, and have led to India becoming the third-largest startup ecosystem.

## Review of Literature

- Bharadwaj et al. (2013) suggest that digital transformation through emerging technologies allows businesses to obtain a competitive edge by improving efficiency and customer experience. Companies that adopt digital solutions are better equipped to respond to market changes.
- Christensen (1997) introduced the concept of disruptive innovation, emphasizing that emerging technologies often lead to radical changes in traditional business models. Industries such as retail, finance, and healthcare have witnessed significant disruptions due to AI, blockchain, and IoT.
- According to McKinsey & Company (2021), AI-powered chatbots and virtual assistants have enhanced customer service in industries like banking, e-commerce, and healthcare. AI-driven personalization strategies improve customer engagement and sales conversion rates.
- A NASSCOM report (2022) highlights that, Indian startups in fintech, health tech, and ed-tech sectors are leveraging AI for fraud detection, diagnosis, and personalized learning experiences. AI adoption in India has been accelerating due to advancements in cloud computing and big data analytics.
- The Reserve Bank of India (RBI) has explored blockchain for digital currency and secure banking transactions. Studies by PwC (2021) indicate that blockchain-based smart contracts could revolutionize trade finance, reducing reliance on intermediaries.
- Xu, Xu, & Li (2018) describe how IoT innovations are important for Industry 4.0, using for predictive maintenance, real-time monitoring, and automated decision-making in manufacturing. Indian industries like Tata Steel have adopted IoT to optimize energy consumption and reduce waste.
- Research by Tripathi et al. (2020) highlights how IoT applications in precision farming improve yield prediction, water management, and pest control. In India, startups like AgroStar and DeHaat use IoT-based solutions to support farmers.

## Research Gap

In spite of important progress, various gaps remain in the study of emerging technologies in business:

1. **Technology Skills Gap:** Many businesses lack the internal expertise required to adopt AI, IoT, and blockchain effectively.
2. **Integration Challenges:** Companies struggle with implementing new technologies into recent systems.
3. **Regulatory Frameworks:** The lack of clear policies and regulations around emerging technologies hampers adoption.
4. **Sustainability Concerns:** The environmental impact of new technologies is underexplored.
5. **Cultural and Global Adoption:** The adoption of emerging technologies varies across regions and requires deeper analysis.
6. **Measuring ROI:** There is not much standardized performance metrics for evaluating technology-driven business success.

## Objectives

This research aims to:

1. **Examine the Role of Emerging Technologies:** Analyze how AI, blockchain, and IoT influence entrepreneurship in India.
2. **Assess Benefits for Indian Companies:** Evaluate how Indian businesses improve productivity, customer engagement, and market competitiveness.
3. **Identify Challenges and Opportunities:** Explore barriers like skill shortages, regulatory constraints, and cybersecurity risks.
4. **Highlight Case Studies:** Provide real-world examples of Indian companies leveraging emerging technologies.
5. **Explore Government Initiatives:** Assess the impact of "Startup India" and other policies on technological adoption.
6. **Foster Innovation:** Emphasize the importance of an innovation-driven culture in business growth.

### Research Methodology

The research methodology includes:

- **Literature Review:** Analyzing academic journals, industry reports, and business case studies.
- **Case Studies:** Examining Indian businesses that have effectively incorporated emerging technologies.
- **Data Collection:** Gathering information through company reports, interviews, and industry publications.
- **Qualitative Analysis:** Evaluating challenges, benefits, and strategies used in technology adoption.

### Data Analysis & Interpretation

#### Case Study Analysis

To further analyze the influence of emerging technologies, real-world case studies gives valuable insights:

##### Case Study 1: AI in Indian E-commerce (Flipkart & Amazon India)

- Flipkart uses AI-powered recommendation engines to personalize user experiences, increasing conversion rates by 35%.
- AI-driven chatbots handle 60% of customer inquiries, decrease operational costs and improving response times.

##### Case Study 2: Blockchain in Banking (SBI & HDFC Bank)

- The State Bank of India (SBI) has launched a blockchain-based trade finance platform to improve transaction transparency.
- HDFC Bank uses blockchain for secure cross-border payments, reducing settlement time from 2-3 days to a few hours.

##### Case Study 3: IoT in Indian Agriculture (Agro Star & De Haat)

- IoT-enabled sensors in Agro Star farms monitor soil water levels, cutting down on water waste by 40%.
- De Haat uses IoT to track crop health, helping farmers increase yield by 25%.

#### Data Analysis

An analysis of industry-wise adoption rates of AI, Blockchain, IoT, and ML shows significant variations:





### Suggestions

- **Skill Development Programs:** Investment in training and education is crucial for bridging the technology skills gap.
- **Regulatory Frameworks:** Clearer policies on blockchain, AI, and data privacy can encourage wider adoption.
- **Cybersecurity Investments:** Businesses must prioritize cybersecurity to protect digital assets and customer data.
- **Government Support:** Strengthening initiatives like "Startup India" can foster technology adoption.
- **Sustainability Focus:** Companies should explore environmentally friendly deployment strategies for emerging technologies.

### Conclusion

In conclusion, emerging technologies are reshaping the business landscape by offering creative solutions that boost productivity and make the customer experience better and create new opportunities for growth. Technologies such as Artificial Intelligence, IOT, Cloud Computing, Block chain, and 5G are not merely trends; they represent significant shifts in how businesses operate and compete.

The integration of these technologies enables organizations to handle tasks and look at huge amounts of data for informed decision-making, and foster deeper connections with customers. As companies accept digital transformation, they can leverage these tools to develop new business models, streamline operations, and maintain a competitive edge in an ever-evolving market.

However, the journey toward adopting emerging technologies is not without challenges. Organizations have to deal with problems such as cyber security, infrastructure requirements, and the requirement for strategic planning and management. By solving these challenges head-on and investing in the right technologies, businesses can unlock their full potential.

Ultimately the part of emerging technologies in business is pivotal. Companies that proactively adapt to these developments will not only enhance their operational capabilities and also position themselves as leaders in their respective industries. As we look ahead, the ongoing evolution of technology will continue to redefine business practices and create exciting possibilities for innovation and growth.

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## ADOPTION OF MODERN DIGITAL TECHNOLOGY BY WOMEN EMPOWERING THROUGH ENTREPRENEURSHIP IN FOOD PROCESSING INDUSTRY

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### Abstract

*Women's business has the potential to significantly alter society by giving them financial independence and empowerment. The satisfaction of success and self-sufficiency can raise women's self-esteem and general well-being, which can increase their levels of confidence and happiness. Their participation in small businesses is now viewed as a productive effort to increase both household income and national economic growth. This research paper mainly concerned with the women entrepreneurship in Mumbai city, Maharashtra, this is based on secondary data related to adoption of modern digital technology y women entrepreneurs in food processing industry. It also highlights empowering female business owners in the food processing sector including improving access to finance, enhancing skill development opportunities, market linkages and networking, promote modern digital technology, adoption and advocating for public reforms.*

**Keywords:** Women Entrepreneurs, Food Processing, Digital Technology

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### 1. INTRODUCTION

The term "entrepreneur" has been derived from the French word "entrepreneur," which means to undertake. 51% of the capital invested by women or having 51% of women employees in the company is called a women's entrepreneur or women's enterprise as defined by the Government of India.

Women entrepreneurs are coming up from diverse fields of business, such as cosmetics, travel and tourism, fashion and film industries, technical and engineering fields, medical fields, etc. across India. Several government schemes for women and bank support have encouraged women to use their knowledge and skills to start up their own ventures, become self-dependent and fulfil their career goals. We have seen the remarkable achievements of women Career opportunity in Food processing Industry is a multidisciplinary field of study that includes aspects of biology, chemistry, physics, physiology, hygiene, economics, rural development, child development, sociology, communal living, art, nutrition, textiles, and home administration, as well as aspects of science and the arts.

Women's employment rates were 28.5% in 2017 and 52.8 in 2023, a significant increase.

Here are some Best ideas for Women Self Employment in Food Processing Business Ideas with Small Capital-Bakery, Banana Wafer Making, Biscuit Making, Bread Production. Chocolate making, Coconut oil Production, Condensed milk Production, Dalia Production. French making Production, Fruit juice Production, Ginger garlic paste production, Hing making, Honey processing, India, is a very large market with a population of 140 crore and consumers of various types of food goods from domestic, international, and local businesses.

Women own 13.5–15.7 million agribusinesses and MSMEs in India. Thanks to support from banks, governments, and institutions, women's entrepreneurship grew from 14 to 20% in the last decade. However, these figures are still far below the developed nations like the UK and the US and developing countries like Brazil, Russia, Nigeria, etc.

**CURRENT STATISTICAL DATA RELATED TO FOOD PROCESSING IN INDIA**

Women-owned MSMEs contribution to the employment generated by the employment generated by the total UDYAM registered units is 18.73% involving 11.15% of the total investment. The contribution of the women-owned MSMEs to the total turnover of UDYAM register of MSME is 10.22% in 2024. There are estimated 25-lakh unorganized and unregistered micro foods processing enterprises in the country, with 7% of investment in plant & machinery, the unorganized enterprises contribute of 74.3% of employment (a third of which are women), 10% of output and 27% of value addition in the sector. Nearly 66 per cent of these units are located in rural areas and about 80 per cent of them are family-based enterprises. The organized sector with nearly 40,000 units accounts for 93% of the plant & machinery in the sector, in value terms. This segment accounts for 26% of employment and contributes around 90% of output and 72% GVA. Most of the food processing factories are concentrated in the coastal states due to accessibility to marine food processing. Major coastal states include: Andhra Pradesh, Maharashtra, Karnataka, Gujarat, West Bengal etc. Major non-coastal states include: UP, Punjab, Haryana etc. The food processing industry in India contributes to the country's economy in many ways, including: -

**EMPLOYMENT:** The food processing industry employs about 1.93 million people in the registered factory sector and about 5.1 million in the unregistered sector.

**EXPORTS:** The food processing industry contributes 13% to India's total exports.

**INDUSTRIAL INVESTMENT:** The food processing industry contributes 6% of industrial investment in India.

**GDP:** The food processing industry contributes around 13% to India's GDP.

**MARKET SHARE:** The food processing industry contributes around 32% to India's total market.

**2. LITERATURE REVIEW**

1. **Siya Sahni,(2024):** - The paper highlights the economic, social, and cultural significance of empowering women entrepreneurs in the food processing sector, emphasizing their role in driving economic growth, preserving culinary traditions, and challenging gender stereotypes. It also discusses the various obstacles faced by women entrepreneurs, including financial constraints, limited access to markets, and societal expectations, promoting women's entrepreneurship in India, such as government schemes, skill development programs, and networking platforms.
2. **Kavitha Shree et al., (2020):** - This report focuses on the difficulties of women entrepreneurship in food processing sector. The food processing sector will be strengthened by the construction of infrastructure in food processing facilities such as roads, cold chains and power. As a result, this article can assist entrepreneurs, particularly women, in overcoming obstacles such as self-confidence, hard effort, technological training and tenacity in order to become successful food processing businesses.
3. **Kapinga, (2020):** -The purpose of this paper was to create a mobile application that contextualizes Tanzanian women entrepreneurs need for developing business achievement in the food processing sector. The study created mobile application solutions to access market information when running a business. The mobile application improves women entrepreneurs' aptitude to identify potential customers and make informed decisions about the sale and delivery of the goods.

4. **Deepshikha Nagvanshi, (2018):** - To analysis in this paper is food processing facilities requires conducting a market analysis and understanding the business model because both quality and price must be competitive to succeed. Internet use has become increasingly popular in recent years. Women can reach millions of individuals online, not only in the nation where they now reside. The secret to success is effective training and resource allocation. To get the most out of the market in the shortest amount of time, all businesses must keep up with the most recent trends and technology.
5. **Dr. C. S. Joshi, (2024):** - There is a global drive to accelerate the growth and development of nations through innovation and technology. People who have innovative idea, are starting their start-ups with minimum resources This research paper investigates the dynamic landscape of women-led food processing start-ups in Uttarakhand, India, aiming to elucidate the opportunities and challenges encountered by women entrepreneurs in this burgeoning sector. It highlights success stories and case studies of resilient women entrepreneurs who have navigated obstacles to carve a niche in the industry.

### **3. RESEARCH GAP:**

Most of the earlier research studies are on women entrepreneurship in the agricultural sector, tourism or manufacturing sector. Despite the fact that several studies on women entrepreneurship and food processing sector have been undertaken, few academicians have conducted complete assessments of the available literature. There are only a few studies done on women entrepreneurship in food processing sector in ADOPTION OF MODERN DIGITAL TECHNOLOGY by women entrepreneurship in the food processing sector.

### **4. OBJECTIVE OF THE STUDY**

- 1.To study the role of women entrepreneurs in the productivity improvement and achievement of the food processing companies.
2. To list the advantages, benefits, constraints and disadvantages of women's entrepreneurship in food processing sector
- 3.To highlights the challenges and opportunities face by women entrepreneurs in food processing sector in the digital era.
4. To suggest some strategies to be incorporated by women entrepreneurs towards economic development
5. To highlights the prospects of women entrepreneurs in the form of new ideas, new activities and adoption of new technology in food processing sector.

### **5. RESEARCH METHODOLOGY:**

The research methodology adopted for the present research can be **seen** as below

- 1.Research Design: The research paper is descriptive research design.
2. Sources of Data: There are two sources of data namely primary and secondary data. The primary data refers to the data collected for the first time from the selected sample respondents. While the **secondary data** is data taken from the available published sources from books, journals, articles, web sites and case studies and government reports. In the present research the data is taken from the available literature on the subject of research.

### **6. HOW MODERN DIGITAL TECHNOLOGY IS HELP WOMEN ENTREPRENURS TRANSFORMING THE FOOD PROCESSING INDUSTRY (INNOVATIVENESS IN THE STUDY)**

Food and technology experiencing a rapid technology adoption and enhance their business in today's competitive world. Now a days a consumer is very health conscious and expect healthier, safer, cheaper products, then food production should become more efficient, cost-effective and higher in quality, new promising food technology start-ups enter the market every year. Recent data should that the food technology market is expected to go our \$ 360 million in just five years. To compare in 2022, this market was evaluated at \$ 260.07 million.

### **1.FOOD PROCESSING TECHNOLOGY**

Food processing technology is the integration of technological innovation and science into various aspects of the food and beverages industry. It focuses on improving food production, processing, safety and consumption. From enhancing agricultural practices to online food delivery and dietary apps. How emerging technologies in the food industry reshape various food sectors from agriculture and food service to food consumer services aiming to improve efficiency, quality and the overall consumer experience.

#### **1.Agri technology adoption by women entrepreneurs**

**I) Precision agriculture-** Women entrepreneurs use GPS technology, sensors and data analytics to optimize planning, irrigation and harvesting. For instance, tractors equipped with GPS can precisely plants seeds and apply fertilizers, reducing waste and increasing crop yields.

**II)Drone-** Drones are used for aerial crop monitoring. They can capture images and data to access plant health

**III)IOT Sensors-** IOT sensors are used to monitor soil conditions, weather, data and the well-being of livestock

#### **2.Food Science adoption digital technology**

**I)Nanotechnology-** Women entrepreneurs use food and beverages use nanotechnology to enhance food quality and safety for example; - this technology can improve the stability of sensitive food components such as vitamins or flavours.

**II)Sensory analysis:** - Women entrepreneurs use this technology to measure and analyses taste, texture and aroma to fine tune food products and create a consistent consumer experience.

**III)Gene editing** – This technology opens the possibility of improving food security and suitability

#### **3. Food services and modern digital technology**

**I)Point of Sale System:** - Restaurants and cafes use post systems for order processing, payments and inventory management. The technology used in the food service industry streamlines operations and enables data analysis for better decision making.

**II)Table Menus:** - Some restaurants employ table-based menus they allow dinners to browse customize orders and make payments electronically enhancing dining experiences.

**III)AI- Power Chat boats:** - Some restaurants and fast food chains employ AI-Powered chat boats for customer service.

#### **4. Food delivery and modern digital technology**

**I) Food Delivery Apps:** - Companies like uber eats, door dash and other connect consumers with restaurants for convenience online ordering and delivery. GPS tracking in these apps lets customers monitor the delivery process in real time.

**II) Delivery Robots and Drones:** - Currently deliver robots and drones are being tested for autonomous food delivery i.e. reduce times and costs.

**III) AI- Optimized Routing:** -Women entrepreneurs utilize AI algorithms for route optimization. These algorithms consider traffic, delivery windows, order locations to create most efficient delivery routes, reducing delivery time and fuel consumption.

## **2. FOOD TECHNOLOGY AND GOALS IMPELMENTATION**

1. Producing sustainable food and beverages packaging materials and smart packaging to minimize food waste.

2. Food should be ordered and delivered in online delivery platforms

3. Encourage consumers use digital online apps, other digital tools to order online food and nutritional choices, cooking gadgets and smart kitchen technology

## **3. CHALLENGES FACED BY WOMEN ENTREPRENURS ADOPTION OF MODERN DIGITAL TECHNOLOGY IN FOOD PROCESSING INDUSTRY**

The pandemic has facilitated a lot of people to turn entrepreneurs including women who are already making their presence felt as successful AL innovator. Women entrepreneurs faced lots of challenges such as funding, networking, membership for business skills optimize their business efficiency, accessing banking services. These women entrepreneurs need specialized technical knowledge

### **1. Financial technology**

Financial technology such as payment links, cyber security data protection uses credit cards, women owned firms and enterprises that receive little funding.

### **2. Cloud computing and data storage analysis and privacy**

Data management and storage of data centres is not only a high expense but also restrictive success. Cloud computing is help to storage but only customized data sharing and overall data management. Among start-ups and MSMEs its additional advantage is the low or helping in reducing costs.

### **3. Technology training and skill development**

With the help of a technology expertise women entrepreneurs can enjoy a competitive advantage it will also act as a driver of business results. The best method for upgrading technology teams' abilities is technology skill development through upskilling and reskilling workshops.

### **4. New product development**

To capture the market, it is necessary to improve the quality of product, many tech companies can quickly assess and build MYP funding. Post funding these companies can further enhance and maintain the product.

### **5. Building online portals and mobile applications**

Today all the business, big or small have their presence through online portals and mobile applications. Building your online presence will help in improving your brand identity and strong digital platforms, and communication between internal and external customers.

## **SOME EXAMPLES OF WOMEN ENHANCE THEIR BUISNESSES ADOPTION OF MODRDN DIGITAL TECHNOLOGY IN FOOD PROCESSING INDUSTRY**

### **1) PATIL KAKI**

In 2016, when Geeta Patil's husband lost his job, she decided to turn her love for making authentic Maharashtrian snacks and sweets into a full-time business. With two kids to support and a household to run, she saw this as an opportunity to use her talents to provide for her family. Starting small with 'Patil Kaki', she began selling snacks like *modak*, *puranpoli*, *chakli*, *poha*, and *chivda* with minimal investment. Over time, her business grew, and now, she serves more than 3,000 customers annually, making over Rs 1 crore in revenue. Vinit (her son) worked on increasing the revenue from Rs 12,000



lakh annually to almost Rs 1.4 crore, he says. “We have taken up a 1,200 sqft space in Santacruz where we operate from. We also have 25 other women who work with us at the workshop. Vinit (her son) worked on increasing the revenue from Rs 12,000 lakh annually to almost Rs 1.4 crore, he says. “We have taken up a 1,200 sqft space in Santacruz where we operate from. We also have 25 other women who work with us at the workshop. They use modern digital technology such as mobile, face book, Instagram to enhance their business. This has been all thanks to Vinit,” she says. With over 3,000 orders being shipped out every month, the brand is looking to expand their service to other cities very soon.

## 2)KIMMU’S KITCHEN

In 2020, Kamaljit Kaur from Punjab began ‘Kimmu’s Kitchen’. Her goal was to sell pure Bilona ghee without any additives or harmful chemicals. It was this desire to bring the taste she grew up with to Mumbai that led to her business idea. he used the traditional Bilona method from her village in Ludhiana to make this happen, selling it not only across India but also to international customers. Today, she clocks a monthly revenue of Rs 20 lakh and ships out over 4,500 bottles of ghee each month.

## 3)KOKANRAJ

Pune’s Lalita Khaire runs ‘Kokanraj’ to sell her homemade kokum *sharbat*. But before starting her entrepreneurial journey, she had to face many ups and downs — from having to sell her home to face the ire of relatives for wanting to run her own business. With this business, she clocks an annual revenue of Rs 2.5 crore. Over the years the couple has built a strong network of **distributors across India**. Some of their distributors include Big Basket, Reliance Fresh, D-Mart, Big Bazaar, Durable’s and Star Bazaar.

## 4) URMILA AND AARTI SAMANT

Urmila and Arti Samant run the Mumbai-based company Masala Tokri, which sells premium masalas. Urmila started by sharing spice mixes with friends and family and then expanded to exporting masalas to other countries. Aarti took over sales, marketing and promotion use of modern technology such as digital marketing, e-commerce, Linkedin, Instagram etc. Some of the retail outlets where masala Tokri products are available are- Shital Innovative foods, Amazon, Flipkart and O basket etc. Masala Tokri founder Aarti and Urmila aims to reach a Rs. 1 crore turnover at the end of the year 2021 and clocked Rs. 20 lakhs in previous year.

## 8. KEY INITIATIVES OF THE GOVERNMENT SCHEMES TO PROMOTE MODERN DIGITALIZATION IN FOOD PROCESSING INDUSTRY BY WOMEN ENTEREPRENURS

**1.Pradhan Mantri Kisan Sampada Yojana (PMKSY):** To create modern infrastructure for the processing and preservation of agriculture and food processing sector.

**2.Mega Food Parks Scheme:** Modern food processing infrastructure for the processing units based on a cluster approach.

**3.Integrated Cold Chain:** Promotion of cold chain facilities without any break from the farm gate to the consumer.

**4.Scheme for Creation of Infrastructure for Agro Processing Clusters:** Two basic components i.e., Basic Enabling Infrastructure (roads, water supply, power supply, drainage, ETP etc.) and Core Infrastructure/Common facilities.

**5.Production Linked Incentive Scheme for Food Processing Industry (PLISFPI):** To support creation of global food manufacturing champions

## 9. SUGGESTIONS AND RECOMMENDATIONS



Empowering female business owners in the food processing sector in India requires a comprehensive approach that addresses various aspects of their entrepreneurial journey. Here are some practical suggestions to achieve this:

1. Female entrepreneurs by promoting government schemes like Stand-Up India and MUDRA, specifically targeting women-owned enterprises in the food processing sector. Provide financial literacy training to help women understand the loan application process and manage their finances effectively.
2. Specialized Skill Development and training programs and skill development initiatives focused on food processing techniques, food safety standards, product innovation, and marketing strategies tailored for women entrepreneurs.
3. Create platforms for female entrepreneurs in the food processing sector to network, collaborate, and share best practices. Organize trade fairs, exhibitions, and networking events where women can showcase their products, build business connections, and explore new market opportunities.
4. To Promote the adoption of technology and digital tools in food processing businesses owned by women. Provide training and support for using technology for production processes, quality control, inventory management, and online marketing. Encourage the use of ecommerce platforms to reach a wider customer base.
5. To Improve access to infrastructure and facilities required for food processing operations, such as food processing units, storage facilities, packaging materials, and transportation services. Develop food processing clusters or industrial parks with dedicated infrastructure for women-owned businesses.
6. Establishing smart food processing hubs equipped with advanced technologies like Internet of Things (IoT), artificial intelligence (AI), and blockchain. These hubs can monitor the entire food supply chain, from farm to table, ensuring quality, traceability, and efficiency.
7. Developing a range of functional and nutraceutical foods tailored to specific health needs. These could include foods fortified with essential nutrients, probiotics, and bioactive compounds to address prevalent health concerns in the Indian population.

## 10. CONCLUSION:

This paper proposed a systematic review to find and examine the recent research on women entrepreneurship and digital technology adoption in food processing industry. The expansion of the food processing business, in general, creates more opportunities for women to work as packaging, quality control and marketing operations are particularly well suited to women. As a result, research focusing on women entrepreneurship in food processing sector would be extremely valuable for country's economic growth and development.

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*Dr. C. S. Joshi, (2024) Empowering Women Through Food Processing startups : Opportunities and Challenges in Uttarakhand, M.B.Govt.P.G College, Haldwani, Uttarakhand, India, MAH MUL/03051/2012 ISSN: 2319 9318 i d y a w a r t a Peer-Reviewed International Journal April To June 2024 Issue-50, Vol-01 [vidyavarta : Interdisciplinary Multilingual Refereed Journal Impact Factor 9.29 IIJIF*  
<https://easternpeak.com/blog/how-technology-is-transforming-the-food-industry/>  
<https://yourstory.com/herstory/2022/09/access-tech-partners-key-callenges-for-women>  
<https://www.news18.com/news/indiwo/work-and-career-9-schemes-for-women-entreprenurs-in-india-1522125.html>

## A STUDY ON THE ROLE OF CUSTOMER EXPERIENCE IN BUILDING BRAND LOYALTY IN DIGITAL ERA

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### **Abstract**

*Customer Experience and Brand Loyalty looks at how brands can encourage loyalty by prioritizing their quality of service, personalization and consistency. Drawing on surveys, interviews, and case studies, it shows how positive experiences lead to word-of-mouth recommendations, repeat purchases, and positive brand perception. Personalized service creates emotional connections that lead to customer loyalty over the long term. Consistent experiences across physical and digital environments are key to sustaining consumer trust and confidence.*

*In today's tech-driven world, technology has one of the crucial roles in improving the customer experience. AI-powered chatbots, personalized recommendations, and many more such instances offer seamless engagement. Through real-time feedback collection and data analytics, businesses can easily understand the changing customer needs. It allows them to refine their services and improve overall customer satisfaction. Digital payments, e-commerce websites, and social media interactions also improve customer convenience and make brands highly accessible.*

*Customer loyalty is also crucial for economic growth, supporting Viksit Bharat—India's vision for progress. Higher brand loyalty eventually will lead to more sales, which means more business growth, more jobs, and greater economic prosperity. As companies thrive, their contributions to GDP strengthen India's finances. Moreover, higher consumer spending improves the standard of living, creating a prosperous and self-sufficient society. Digital transformation in customer service supports financial inclusion.*

*So, in essence, customer experience is not just a business imperative but also a nation-building imperative. By embracing customer-centric approaches and harnessing the power of digital tools, businesses can create loyalty, and help realise the vision of Viksit Bharat.*

**Keywords** – Customer Experience, Brand Loyalty, Viksit Bharat, Economic Development, Job Creation, Word Of Mouth, Digital Era,

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### **Introduction**

The moment you enter your favourite store—and the staff there knows your name, remembers your preferences, and asks how your weekend was, it feels pretty good, right? That's a positive customer experience (CX) for people.

Today, CX goes beyond brick-and-mortar stores. It's about providing consistent, personalized experiences across all channels—the digital platforms and even AI-powered chatbots. Companies that prioritize technology can offer highly-personalized recommendations, on-demand support, and frictionless transactions, which boosts customer happiness. A seamless digital experience creates convenience, so customers will return and recommend your brand.

But why does CX matter if your customers are only happy? Because a good experience leads to loyalty. Satisfied customers are more likely to buy from you again and become brand advocates. They promote your business through word-of-mouth and social media, resulting in organic growth.

CX is also essential for economic development in alignment with the objective of Viksit Bharat (developed India). Improved customer experience leads to increased sales, which in turn leads to growth of the business and creation of jobs. The growth of ecommerce, fintech, and digital services is not only revolutionizing the way we interact with customers, but also creating jobs and encouraging

entrepreneurship. More successful businesses lead to a stronger economy, higher GDP, to promote a higher standard of living for citizens.

Businesses must abandon the universal approach and personalize interactions, embrace digital innovation, and continuously improve CX. Because in the end success isn't just about selling—it's about maintaining strong relationships that drive long-term growth and contribute to the prosperity of India.

### Review of Literature

**Johnson et al. (2022)** examined the relationship between customer experience and brand loyalty in retail. The authors surveyed 1,000 consumers and found that personalized experiences were associated with loyalty; 72% showed a greater tendency to remain with brands that provided tailored interactions. The authors emphasized the role of data-driven personalization in sustaining customer relationships over time.

A meta-analysis by **Rodriguez et al. (2023)** analyzed 50 studies on customer experience and brand loyalty across industries, and concluded that positive customer experiences positively influenced brand loyalty, but noted that the impact was greatest in service industries, where human interactions were more central to the experience.

**Chen et al. (2021)** examined the role of digital customer experiences in brand loyalty among millennials. The study found that omnichannel experiences are critical for building loyalty, with 85% of participants indicating a higher likelihood to remain loyal to brands that provide consistent experiences across online and offline touchpoints. The findings further indicated that mobile experiences are increasingly important for fostering loyalty.

**Sharma et al. (2023)** conducted a longitudinal study on the connection between customer experience and brand affinity in the hospitality industry. The researchers tracked customer behavior over a three-year period and discovered that hotels regularly delivered positive experiences had a 40% increase in repeat bookings compared to hotels with inconsistent service quality. The study highlighted the cumulative effect of positive experiences on long-term loyalty.

A cross-cultural examination of the relationship between customer experience and brand loyalty by **Thompson et al. (2022)** discovered that favourable experiences were important in both Western and Asian markets, but cultural differences impacted which parts of the experience were most important. For example, Asian consumers prioritized social proof and community engagement, whereas Western consumers prioritized personalization and efficiency.

### Research Gap

1. Limited study of how Customer Experience contributes to Building Brand Allegiance in the Digital Space.
2. Lack of research on how personalized online experiences help keep customers be loyal to a brand.
3. Limited research on how online customer interactions influence long-term brand loyalty.

### Objectives

1. To study why customer experience is necessary in building Brand Loyalty in today's digital era
2. To study brand loyalty through customer experience
3. To assess the effect of customer experience in building Brand Allegiance to increase the economic development
4. To determine the significance of experiential customer experience in building Brand Loyalty

**Hypothesis**

H1: Customer experience is necessary for building Brand Loyalty

H0: Customer experience is not necessary in building Brand Loyalty

H1: Brand Loyalty can be measured through customer experience

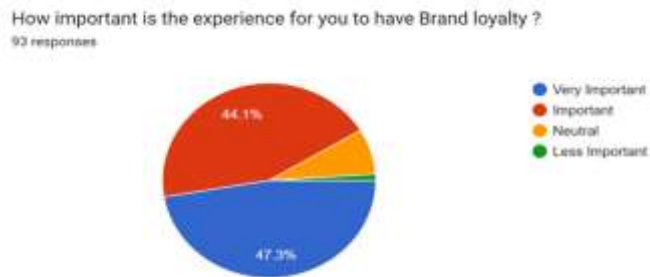
H0: Brand Loyalty cannot be measured through customer experience

**Research Methodology****Primary Data**

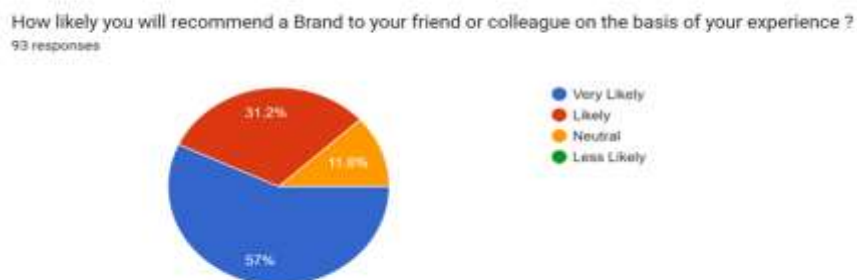
1. Data was collected from - 93 people
2. Survey instrument - Google form
3. Sampling methods - Simple random sampling
4. Research design - Descriptive Research

**Secondary data**

The study made use of existing data from various sources, including scholarly publications, blogs, research papers, and journals, to examine the role of customer experience in building brand loyalty.

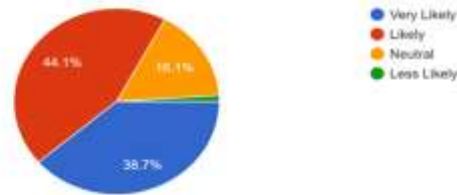
**Analysis**

From the given pie chart, it clearly shows that for 47.3% of people, it is very important for them to have experience to build brand loyalty, and important for 44.1% adding up to 91.4 % of importance in having customer experience for building brand loyalty. Therefore proving, H1, Customer experience is necessary for building Brand Loyalty.



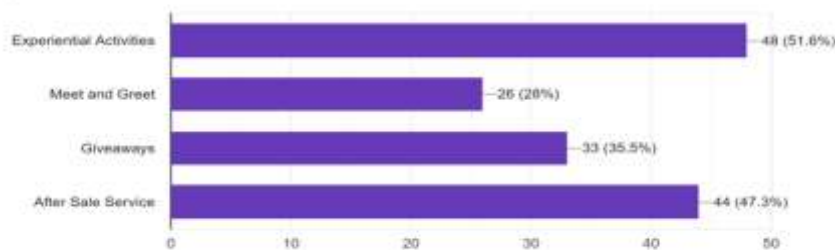
The given pie chart shows that it's 57% very likely and 31.2% are likely to recommend a brand to their peers, according to their good experience adding up to 88.2%. Thereby making them a brand loyal. Hence H1 is proved, Brand Loyalty can be measured through customer experience.

How likely are you to purchase a product or service from a Brand you are loyal to based on your experience ?  
93 responses



The given pie chart clearly states that 44.1% of people, are likely and 38.7% are very likely, and 16.1% are neutral to purchase a product or service from a brand they are loyal to according to their experience. Thereby proving the objective, to assess the effect of customer experience in building Brand Loyalty.

What type of Brand interactions or experience make you more Brand Loyal?  
93 responses



The given graph clearly states that for 51.6% of people, the experiential activities are an important exposure for building brand loyalty, and for 47.3% people after sales service is important for building brand loyalty. Hence proving the objective, to understand the importance of experiential customer experience in building Brand Loyalty.

### Data Findings

1. 59.1% of people state that customer service is also important for building brand loyalty, for 55.9% people experience is important, for 43% people variety, and for 38.7% price.
2. It states that 37.6% people are likely to forgive a brand, and 24.7% are very likely, whereas 32.3% are neutral, and 5.4% are less likely, if they have a negative experience, but make it right by providing excellent customer service.
3. 57% people state that it is easy, 18.3% people find it very easy, and 22.6% people find it difficult for them to find information or resolve issues with their favourite brand,
4. 32.3% people indicate that they are prone to as well as neutral, and 9.7% are very likely whereas 25.8% are less likely, in purchasing from the brand if they have had negative experience.
5. It states that 58.1% people are satisfied with the services, and 34.4% people are very satisfied, provided by their brands, thereby strengthening brand loyalty.
6. 32.3% of users mention that they are happy with the overall experience provided by their favourite brand.
7. It shows that 44.1% people are likely to purchase a product or service from the brand based on their experience, 47.3% people based on of after sales service, 35.5% people based on giveaways, and 28% people based on meet and greet.

**Recommendations**

1. Make training investments for staff to enhance customer service
2. Make Use of Innovation and Technology
3. Make investments for digital softwares
4. Be flexible and adjust to changes in the market.
- 5 Provide a dependable multi channel user experience

**Conclusion**

The bottom line is that Customer experience is the key to driving brand loyalty. This report demonstrates that great customer experience—characterized by superior service, personalization, emotional connection, and consistency—lays the groundwork for long-term customer relationships. When customers feel like they're valued and understood, they're more likely to stay loyal and recommend the brand to others. Ensuring brand consistency across all touchpoints and actively seeking consumer feedback further enhances customer trust and satisfaction.

Today, companies must use technology to improve customer experience. AI-powered support, data-driven personalization, and frictionless omnichannel interactions help brands create a more convenient and engaging journey. Digital platforms, ecommerce, and fintech services enable customers to access faster, more efficient, and customized experiences, leading to higher retention and satisfaction.

Apart from this, customer loyalty also contributes to the goal of Viksit Bharat—a developed India. As the amount of customers increases, the sales continues to rise, resulting in expansion and investment. As the businesses grow, employment opportunities increase, entrepreneurship develops, and the GDP also increases. With the advent of digital services, financial inclusion is also possible. This enables small businesses and startups to compete in the market and flourish.

Brand loyalty can be sustained only if companies adopt a customer-centric mindset and are able to evolve with changing consumer expectations. By focusing on delivering consistent, seamless experiences across all touchpoints, businesses can forge stronger relationships, drive long-term profitability and contribute to India's economic growth. Digitally empowered customer experience is not just a business imperative, but a national growth engine supporting Viksit Bharat's vision of prosperity and development.

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A Study on the role of Customer Experience in Building Brand Loyalty in Digital Era  
 Abstract: Customer Experience (CX) is a critical factor in building brand loyalty in the digital era. This study explores how brands can leverage CX to foster loyalty, focusing on personalized services, digital payments, and social media interactions. Drawing on surveys, interviews, and case studies, it shows how positive experiences lead to word-of-mouth recommendations, repeat purchases, and positive brand perceptions. Personalized services create emotional connections that lead to customer loyalty over the long term. Consistent experiences across physical and digital environments are key to sustaining consumer trust and confidence. In today's tech-driven world, technology has one of the crucial roles in improving the customer experience. AI-powered chatbots, personalized recommendations, and many more such instances offer seamless engagement. Through real-time feedback collection and data analysis, businesses can easily understand the changing customer needs. It allows them to refine their services and improve overall customer satisfaction. Digital payments, e-commerce websites, and social media interactions also improve customer convenience and make brands highly accessible. Customer loyalty is also crucial for economic growth, supporting local brands – that's vision for progress. Higher brand loyalty eventually will lead to more sales, which means more business growth, more jobs, and a greener economic prosperity. As businesses thrive, their contributions to

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Hypothesis H1: Customer experience is necessary for building Brand Loyalty. H0: Customer experience is not necessary in building Brand Loyalty. H1: Brand Loyalty can be measured through customer experience. H0: Brand Loyalty cannot be measured through customer experience. Research Methodology: Primary Data: 1. Data was collected from - 80 people. 2. Survey instrument: Google form. 3. Sampling method: Simple random sampling. Research design: Descriptive Research. Secondary data: The study made use of existing data from various sources, including scholarly publications, blogs, research papers, and journals. To examine the role of customer experience in building brand loyalty. Analysis from the given pie chart, it clearly shows that for 47% of people, it is very important for them to have experience to build brand loyalty and important for 44% of people to have a good experience in having customer experience for building brand loyalty. Therefore, proving H1: Customer experience is necessary for building Brand Loyalty. The given pie chart shows that 10% of people are likely to recommend a brand to their peers, according to their good experience adding up to 88.2%, thereby making them a brand loyal. Hence H1 is proved, Brand Loyalty can be measured through customer experience. The given pie chart clearly states that 44% of people, are likely and 33% are very likely, and 16% are neutral to purchase a product or service from a brand they are loyal to according to

## THE RISE OF NATURAL BRANDS: AN OVERVIEW OF MARKET TRENDS, OPPORTUNITIES, AND CHALLENGES IN THE FMCG SECTOR

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### **Abstract**

*The rise of natural brands within the fast-moving consumer goods (FMCG) sector has been driven by shifting consumer preferences towards health-conscious, eco-friendly, and ethically sourced products. This research paper aims to analyze market trends, opportunities, and challenges associated with the fast growth of natural brands in the FMCG industry. Through secondary data analysis, including industry reports, market surveys, and relevant academic literature, the study explores how natural brands are carving a niche in an increasingly competitive marketplace. The paper identifies key drivers such as growing health awareness, environmental concerns, and increasing demand for sustainable products. It also highlights the barriers these brands face, including high production costs and catering to mass-market demands. By examining the trends across various markets and product segments this paper highlights the opportunities and obstacles that natural brands encounter, this research aims to bring forth market insights for businesses seeking to capitalize on the growing demand for natural products. The objective of the study is to provide a comprehensive understanding of how natural brands are reshaping the FMCG landscape, offering strategic recommendations for brands looking to establish or strengthen their presence in the market.*

**Key words:** *Natural brands, Sustainable, FMCG, Personal Care*

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### **Introduction:**

The rise of natural brands within the Fast-Moving Consumer Goods (FMCG) sector has been driven by shifting consumer preferences towards health-conscious, eco-friendly, and ethically sourced products. This change in consumer preference is attributed to the aftermath of the recent pandemic that the world faced and the growing awareness amongst the consumers about the impact of their consumption on environment. The growing younger population of the world comprising of Millennials and Gen Zs are the harbingers of demand for sustainable products. These consumers comprise of the biggest portion of the working population which has seen the repercussions of the pandemic and the climate change and are conscious of the impact of their consumption on environment. There is heightened sense of health awareness, environmental concerns leading to increased consumption of sustainable products. Globally there is an increase in income levels (*Visualizing Global Income Distribution Over 200 Years - Visual Capitalist*, n.d.) which has led to more spending and better lifestyle. This research paper aims to analyze market trends, opportunities, and challenges associated with the fast growth of natural brands in the FMCG industry.

### **Objective of the study**

The study aims to provide an over view of how natural brands are reshaping the FMCG landscape and offer suggestions to brands looking to establish or strengthen their presence in the industry.

### **Need for the study**

Natural Brands are a category of product that need to be adopted by firms to combat environmental concerns and to work towards sustainable commerce. This study traces the reasons for growth of natural brands across product categories around the various global markets and collates the findings to give an overview of the natural brand segment.

### Research Questions

Is there a sustainable growth of natural brands? What are the contributory factors of this growth? And what are the opportunities for businesses that delve into this segment?

### Research Methodology

Qualitative research is used to study the market dynamics, opportunities, and challenges.

### Research Design:

- **Descriptive research** involving analyzing secondary data (market reports, industry studies, etc.) to identify the trends, growth patterns, and consumer preferences for natural brands.

### Data Collection:

- **Secondary Data Analysis:** The study will rely heavily on secondary data, sourced from the following:
  - **Industry Reports and Market Studies, Academic Journals and Articles.**
- **Data Analysis Techniques:**
  - **Qualitative Analysis:**
  - **Thematic Analysis:** For analyzing content from industry reports, academic papers, and company documents to identify common themes regarding the factors responsible for growth and the challenges faced by natural brands.
  - **SWOT Analysis:** Conducting a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of key natural brand segment in the FMCG sector to highlight their market position, challenges, and opportunities.

### Scope of Study

This study is based on secondary data sources like research article, publications and industry reports and is confined to the FMCG product category.

### Limitations

- The secondary data is limited with respect to the details of sub-segments of the FMCG product category.
- A few reports considered for this study are from the pandemic times and may not be relevant now.
- Global reports may not duly cover all the regions of the world proportionately and therefore regional variations in consumer preferences for natural brands may not be fully captured due to limitations of secondary data.

### Review of Literature

The demand for natural brands is predicted to surpass demand for conventional products as per a report by research agency Boston Consultancy Group (*Pure Growth from Natural Products*, 2021). Natural brand refers to a brand that is perceived by the consumer to be natural and meets certain quality, certifications and claims. This definition comes from SPINS, a US based company that specialises in analysis of consumer data for the natural products category. The study analysed the increase in unit sales from 2015 to 2019 in the consumer's packaged goods category and states that the market for natural products grew by 25% for natural products.

The SPINS report attributes the growth of revenue of natural brands to an increase in consumption based on the content of the product and not on the basis of price offerings. Of the categories under study, second to general merchandise was the body care product in the natural product segment that showed the most sales of natural brands based on product features. This increase in consumption of

natural brands was a result of the increased awareness amongst the consumers about their social and environmental responsibility which led the consumers to buy products that were good for them and for the environment. The study attributes the increase in sales of natural brands to increase in competitive offerings, affordable private label brands, and natural offerings from conventional brands.

As per (*Pure Growth from Natural Products*, 2021) a study done in US, the natural and organic industry was at \$302 billion, with a projected growth rate of 5.1% for 2024, indicating a robust and sustained expansion in the sector. Another industry where natural brands are flourishing is the natural segment of the beauty industry which is valued at \$5.5 billion and which accounts for 29% of the overall growth in the beauty sector. The natural segment has grown by 20.2% over 2020 outpacing conventional beauty products.

The global market for natural brands within the Fast-Moving Consumer Goods (FMCG) sector has seen a considerable growth, particularly in categories like personal care and natural cosmetics, driven by an increase in the demand for products perceived as healthier and more environmentally friendly.

#### **Market Size and Growth Rates:**

According to a report on Natural Cosmetics market, (*Natural Cosmetics Market Size, Share & Growth Report 2030*, n.d.) the global market for natural cosmetics which was valued at about USD 31.84 billion in 2023 is expected to grow at a compound annual growth rate (CAGR) of 5.3% between 2024 and 2030.

The main factors responsible for the growth include concerns regarding chemical composition of the cosmetics and its impact on the skin, increase in purchasing power due to increase in working population worldwide, growing government support for environment friendly businesses, exponential growth in access and use of Internet and the ease of purchase and availability due to burgeoning e-commerce industry.

The largest demand for natural skin care product comes from Europe accounting for 33.2% of global revenue in this segment. As per a study conducted in Europe on natural products (*Natruie Study Finds 'Naturalness' Top Driver in EU Beauty Purchases*, 2021), the study was conducted in Germany and France over 2000 consumers between the age of 18 and 65 and it found that 'naturalness' was the key consideration factor for purchase of beauty products. This aspect ranked above other factors like performance, application, convenience and value for money. The demand for natural skin care products in the Asia-Pacific region is likely to see a 6.8% CAGR between 2022 and 2030 fuelled by the demand for natural products especially in India and China. The North American market is proposed to grow at 6.7% from 2022-2030 owing to the consumer willingness to pay a premium for youthful appearance and glowing skin.

The market share of natural brands within the FMCG sector varies across different product categories and regions. While comprehensive global data encompassing all FMCG categories is limited, specific segments such as natural cosmetics and personal care product category provide valuable insights.

According to a report on natural personal care product category (*Natural and Organic Personal Care Market Statistics - 2034*, n.d.) The market for natural and organic personal care products was valued at USD 21.6 billion in 2022 and is expected to reach USD 66.1 billion by 2033, signifying a CAGR of 9.7%. The report emphasises the role of young consumers in driving the market for clean, healthy, natural and organic brands.

The findings of the report (*Natural Skin Care Products Market Report, 2022-2030*, n.d.) suggest that the **Natural Skin Care Products global market** is expected to grow at a CAGR of 6.6% from 2022 to

2030 and is likely to reach USD 11.87 billion by 2030. This growth is attributed to a growing level of awareness about the ill-effects of chemicals on the skin, heightened by the increase in awareness about the benefits of organic ingredient-based items leading to customers looking for eco-friendly, natural skin care products.

The growing demand for natural ingredients has attracted celebrities like Hailey Bieber and Jessica Alba to associate with natural brands like 'bareMinerals' and 'The Honest Company' respectively, giving a boost to the growth of the natural brand market.

Natural brands must reach the masses in order to make it the first choice. In an interview with **Jimmy Fallon** (*The Tonight Show on Instagram*, 2025), Microsoft founder **Bill Gate** presses the need for business to bring clean products to the masses by investing in technology that can make the clean , green product cheaper than the other option.

Natural products are linked to the perception of higher quality standards, safe to use, good for health and trustworthy. According to a report ("FMCG Gurus," 2022) Asia Pacific region is the world's largest market for natural products due to the rise in awareness of natural products. The report highlights the fact that consumers are paying more attentive to the ingredient listings on the product labels. In the groceries category the research found 74% of consumers prioritising all natural products, associating them with healthier, better quality and more trustworthy. The study further highlights that consumers of all ages in Asia-Pacific were not overly familiar in terms of what makes a product organic. The report further highlights the increasing consumer inclination toward clean label personal care products, presenting opportunities for brands in the FMCG sector.

A report on Indian market (Sakai, 2024) suggests that Indian Gen Z consumer is driving the sale of natural brands and brand are targeting these younger consumers by incorporating high-quality ingredients, promoting health, beauty, and other values, and using natural and organic ingredients along with environmentally friendly packaging and designs that appeal to younger consumers.

According to a study by Persistence Market Research firm (*Natural and Organic Personal Care Market Statistics - 2034*, n.d.) there is a significant growth in the global natural and organic personal care market, with a forecast of compound annual growth rate of 9.7% from 2023 to 2033. The report attributes the change in consumer preference to the growing awareness amongst the consumers about the benefit of Organic and Natural products. The only restraint comes from the premium pricing of the product. This report also brings forth the rise in competition in this market and the entry of multinational companies in this category. This study points out the role of internet and mobile phone usage as a growth driver for personal care products.

The main factors contributing to the growth in this sector are increase in health-conscious lifestyle of the consumer who are spending more on products related to health and hygiene. With growing awareness about the probable risks linked with chemical ingredients coupled with competitive natural offerings in the market leading to an increase in consumption of natural brands. Increasing disposable income has fuelled the demand for premium natural cosmetic products as well.

The challenge in dealing with natural brand is lack of proper regulations governing natural ingredients and a challenge in finding natural preservatives that can work in industrial settings this limits the shelf life of natural products.

### **Data Analysis**

Content analysis of the secondary reviewed for this study was used to conduct a SWOC analysis of the natural brand segment in the FMCG industry.

#### **Strengths**



- The growing concern for environment by the consumers is an advantage for the natural brand segment.
- The product attributes of being skin and health friendly is an advantage for this product category
- Increase in young consumers who are environment conscious
- Increase in income and the ability to spend on personal care
- Increase in expenditure on wellness and clean products

**Weakness**

- High cost of production and preservation
- Lack of regulations governing the natural product composition
- Issues in managing ingredients that support shelf life of the product

**Opportunity**

- The growing consumer base of Gen Z and Gen Alpha that is looking for sustainable products.
- Scope of market expansion

**Challenge**

- Misuse of 'natural' label due to lack of regulations
- Difference in consumer preference across regions based on income, culture and regulatory environments.

**Findings**

The increase in demand of natural brands is linked to evolving consumer preference for products free of chemicals and good for the environment. There is a increase in awareness of sustainable products and environmental impact of consumption amongst the users. Consumers demand for transparency in product ingredients and sourcing and availability of clear and honest information. The over increase in global demand for natural brands due to market expansion and shifting consumer preference in the FMCG product category is an indicator of a growth trajectory for natural brands in the FMCG market.

**Conclusion**

Brands seeking to get into natural brand category are advised to bring in products for the masses without hindering the level of product quality and performance. There is a scope for increasing promotion of benefits accruing out of natural ingredients to the masses to boost sales. The firms also need to look into research and development in order to bring down the cost pf production of natural brands. The study also highlights the importance of influencer marketing to boost sales.

**Further scope of research:**

Primary-data based research can be conducted to understand the market forces that drive sales and analyse the trend in consumption behaviour.

Specific study related to Indian audience can be undertaken to understand the demand for natural brands in India rather than relying on research based in other geographical locations.

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## A STUDY OF MUTUAL FUND SCHEMES WITH REFERENCE TO EQUITY LINKED SAVING SCHEMES (ELSS)

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### Abstract

*Mutual funds have become a vital source of capital and have played a significant role in the growth of India's financial market. The best investing option for the average person is a mutual fund plan, which offers a professionally managed stock market, minimal risk, and maximum profits. In this study we have selected some ELSS mutual fund schemes and tried to find the returns of various schemes using monthly Net Asset Values (NAV). And also applied Mathematical and statistical techniques to know the performance of the schemes. It helps the investor to take decisions on best saving plan.*

**Keywords:** NAV, Monthly returns, Sharpe Ratio, Treynor Ratio, Jensen Ratio

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### Introduction

To develop the country a strong financial market with good participation is required. With this objective RBI has introduced mutual funds in the year 1963 called Unit Trust of India (UTI) to inculcate saving habits among citizens of India and to develop the country. In the past years mutual fund industry is growing significantly.

To integrate the Indian economy with the global economy, the Indian government implemented economic reforms in the areas of trade, industry, and commerce. Investor size has rapidly expanded along with the expansion of India's capital market and economy. India's capital market is increasing year by year. Increase in domestic savings in the market will lead to improvement in capital markets. Mutual Fund Schemes will not give fixed or guaranteed returns. Returns are depending upon the market conditions. Investments in Mutual funds involve risks. Sometimes investor may get high returns, low returns and moderate returns. Investor has to monitor continuously about their investments to get good returns. In this context, fund managers need to meticulously monitor and assess mutual funds to ensure they become the most robust and preferred investment option in the Indian capital market in the coming years. So, it is very important to be vigilant about performance of mutual fund schemes. Fund managers play a key role in getting returns and investing in best mutual fund schemes.

### Types of Mutual fund schemes

Mutual funds are basically divided into open ended, closed ended and interval funds as per their maturity period.

As per the investment objective it is divided as Equity Funds, Debt Funds, Hybrid Funds, Solution Oriented Funds and other schemes. Based on the underlying assets these funds are categorised.

Equity Mutual Funds primarily invest in stocks and shares, focusing on equity markets. Debt Funds invest mainly in debt instruments such as bonds and fixed-income securities. Hybrid Funds allocate investments across both equity and debt instruments, providing a balanced approach.

Equity Linked Savings Schemes (ELSS) are a type of mutual fund schemes, designed to offer tax benefits. It is also called as tax-saving funds. Under section 80c, it allows the taxpayers to invest up to Rs. 1,50,000 in specific securities and claim it as a deduction from their taxable income. For the current study researcher has considered 16 ELSS schemes of various companies.

### **Review of Literature**

Dr. Amir Rehmani (2022) analyzed the performance of various mutual fund schemes from April 2010 to March 2020, comparing them against a risk-free rate and market indices. The study employed risk-adjusted measures to evaluate the performance of these schemes. Dr. Rehmani found that the sample funds performed exceptionally well, and that fund managers played a crucial role in the selection and management of these funds.

Dr. Amit Gupta (2020) conducted a study on investors' perceptions of risk and their expectations regarding mutual funds.

Dr. Chirappa I. B. (2023) assessed the performance of various mutual fund schemes and compared their returns to SBI domestic term deposit rates. The study concluded that most mutual fund schemes did not achieve returns like funds, those offered by SBI domestic term deposits.

Dr. D. Devarajan and R. Poornima (2018) explored various mutual fund schemes available to the public in India, detailing their benefits, tax implications, risks, and rewards.

Komal B. Sharma (2020) investigated debt mutual fund schemes, analyzing the risk and return of five specific debt mutual funds. The study found that three of these funds performed well, while the other two did not achieve satisfactory performance.

Krishna Samaddar (2018) analyzed ten equity mutual fund schemes from April 2017 to March 2018 using various performance measures. The study concluded that all the sampled schemes delivered higher average returns compared to market returns. Additionally, it was found that the HDFC Small Cap Fund outperformed all the other funds included in the study.

B. Sharmila and Dr. R. Khanchana examined various equity mutual fund schemes to identify the best investment alternative among a wide range of options. They utilized time series analysis to understand market conditions and determine the most favourable alternative.

Shivangi Agarwal and Nawazish Mirza (2017) evaluated the performance of 100 mutual fund schemes available in India by applying various performance parameters, including the Sharpe Ratio, Treynor Ratio, Jensen's Alpha and Value at Risk. Covering the period from January 2013 to June 2016, their study found that 90% of the schemes outperformed their benchmarks.

Dr. K. Mahesh and Sujatha S.L. (2020) analyzed the yield and associated risks of various mutual fund schemes, examining price fluctuations relative to the NIFTY index. Their study revealed that mutual fund schemes focused on the construction and metal product sectors ranked among the top five.

Dr. Naliniprava Tripathy (2004) evaluated the performance of 31 equity-linked savings schemes in India using various performance measures, including Rate of Return, Treynor Measure, Sharpe Measure, Jensen Measure, Sharpe Differential Return, and Fama's Decomposition Measure. The study found that only one fund demonstrated a linear relationship between return and risk. Additionally, 13 mutual fund schemes exhibited significant fluctuations in returns, while 9 schemes performed exceptionally well, delivering high returns.

Pal, Ms & Chandani, Arti. (2014), studied critical Analysis of Selected income or debt Mutual Funds in India and found that the schemes were increased from 91 as on 31st march 2001 to 330 on 31<sup>st</sup> march

2010. They also have observed first fall in the year 2003 and the second fall was in the year 2010 in the entire decade.

Madugula, Jayadev. (1996), analysed various performance of various Mutual Fund schemes performances using monthly returns. Authors selected stock market index and riskfree returns as benchmarks to compare the returns of different schemes. And concluded that 33 schemes have linear relationship between return and risk. Also revealed that 30 schemes out of 44 schemes have performed better than total risk and 24 schemes performed better than systematic risk.

Maheswari, Y. (2021), examined Performance of Selected Mutual Funds in India, and revealed that corporate sector performed better than nationalized sector.

### Objectives:

1. To study the returns of selected tax saving mutual fund schemes.
2. To compare the performance of selected mutual fund schemes as per performance parameters.
3. To find best tax saving mutual fund scheme.

### Data Collection:

From the Association of Mutual Funds India (AMFI) website secondary data was collected. For the study, Net Asset Value (NAV) of various tax saving (ELSS) mutual funds schemes from April 2023 to March 2024 was collected. The collected data was analyzed using mathematical and statistical techniques.

### Methodology:

To analyse the data, monthly returns and monthly average returns are calculated using monthly NAVs. To identify robust scheme, various performance measures like Sharpe ratio, Treynor Ratio and Jensen's Ratio was calculated. The outcome of the analysis is presented in the following sections

### Tools & technique used:

The following measures were used to analyse the data.

**Sharp Ratio:** The Sharpe Ratio is a tool for the calculation of the risk-adjusted return of an investment. It allows investors to evaluate the returns against risk.

$$\text{Sharp Ratio} = (R_p - R_f) / \sigma$$

$R_p$  = Portfolio Return,  $R_f$  = Risk free rate,  $\sigma$  = Standard deviation of portfolio.

**Treynor ratio:** The Treynor Ratio quantifies the excess returns an investment generates relative to the market risk. It indicates how much additional return is earned above the risk-free rate for each unit of market risk assumed.

$$\text{Treynor Ratio} = (R_p - R_f) / \beta$$

$R_p$  = Portfolio Return,  $R_f$  = Risk free rate,  $\beta$  = Portfolio beta

**Jenson Measure:** It assesses a portfolio's risk-adjusted performance by comparing its returns to the expected market return, which is represented by the portfolio's alpha ( $\alpha$ ).

$$\text{Jenson Ratio} = R_p - (R_f + \beta * (R_m - R_f))$$

$R_p$  = Portfolio Return,  $R_f$  = Risk free rate,  $\beta$  = Portfolio beta.  $R_m$  = Market Returns.

A positive alpha ( $\alpha$ ) signifies that a portfolio has outperformed expectations, while a negative alpha indicates underperformance relative to the market.

**Standard deviation:** It shows the historical volatility

$$\sigma = \sqrt{\frac{\sum R^2}{n} - \bar{R}^2}$$

**Beta:** It measures the volatility of a portfolio with comparison to the market as a whole

$$\beta = \frac{COV(R_p, R_m)}{Variance(R_m)}$$

R<sub>p</sub>= Portfolio Return, R<sub>m</sub>= Market Returns.

**Risk free rate (R<sub>f</sub>):** The risk-free rate reflects the return an investor would receive from an investment with no risk over a given period. It represents the baseline interest earned from a completely secure investment.

### Results:

Monthly NAV values are selected from Association of Mutual Funds of India (AMFI) website from 1<sup>st</sup> April 2023 to 31<sup>st</sup> March 2024 of selected 16 ELSS mutual fund schemes and Nifty 50 index is selected from Nifty website and the values are represented in the following table.

		1	2	3	4	5	6	7
Date	Nifty 50 index	DSP ELSS Tax Saver Fund - Regular Plan - Growth	HDFC ELSS Tax saver - Growth Plan	Quant ELSS Tax Saver Fund - Growth Option - Regular Plan	Franklin India ELSS Tax Saver Fund- Growth	SBI Long Duration Fund - Regular Plan - Growth	Motilal Oswal ELSS Tax Saver Fund - Regular Plan - Growth	Kotak ELSS Tax Saver Fund- Growth
03-Apr-23	17,428.05	80.447	799.766	226.0091	873.6381	10.2148	26.8018	74.131
02-May-23	18,180.25	83.251	828.905	237.1012	904.4721	10.4403	27.7148	77.038
01-Jun-23	18,580.30	85.984	847.908	240.8587	932.3856	10.6141	29.0865	78.829
03-Jul-23	19,345.10	90.091	897.112	254.9982	977.645	10.4596	30.7508	82.651
01-Aug-23	19,795.60	94.313	932.629	267.4729	1026.571	10.5241	31.3949	85.808
01-Sep-23	19,458.55	94.313	943.998	271.9302	1041.235	10.6038	32.1103	86.633
03-Oct-23	19,623.20	96.298	949.186	275.7712	1060.239	10.5640	32.8835	87.218
01-Nov-23	19,096.05	93.001	931.494	268.0915	1034.170	10.5145	31.9107	84.355
01-Dec-23	20,291.55	101.901	1020.696	295.5415	1117.016	10.5637	35.4799	90.132
01-Jan-24	21,834.35	109.441	1090.107	324.4847	1198.501	10.7326	37.9036	94.803
01-Feb-24	21,832.95	111.018	1121.224	341.5133	1220.766	11.0952	39.0028	95.654
01-Mar-24	22,353.30	115.253	1162.848	356.9009	1271.206	11.2074	40.5774	101.184
31-Mar-24	22,455.00	112.514	1161.339	350.9804	1262.788	11.284	41.3021	101.764

8	9	10	11	12	13	14	15	16
Mirae Asset ELSS Tax Saver Fund - Regular Plan - Growth	Canara Robeco ELSS Tax Saver - Regular Plan - IDCW (Payout)	Bandhan ELSS Tax Saver Fund - Regular Plan - Growth	Baroda Bnp Paribas ELSS Tax Saver Fund - Regular Growth	Investo India ELSS Tax Saver Fund - Growth	Sundaram ELSS Tax Saver Fund Regular Growth	Mahindra Manulife ELSS Tax Saver Fund- Regular Plan - Growth	Nippon India Tax Saver (ELSS) Fund- Growth Plan- Growth Option	Union ELSS Tax Saver Fund Growth Option
30.334	35.19	98.832	56.5154	75.27	326.525	18.7786	77.4358	41.3

31.512	36.47	102.468	58.5595	78.19	338.2169	19.4035	80.1701	42.68
32.379	37.64	107.317	60.7884	81.57	349.8798	20.0666	82.2360	44.49
33.998	39.40	112.176	63.9758	86.46	369.8731	21.1888	87.1455	46.64
35.422	40.36	117.561	65.6202	88.75	382.0475	21.7368	91.0125	48.35
35.764	40.21	119.153	66.1844	89.95	383.9399	22.0332	91.8529	48.91
35.829	40.54	119.373	66.4668	91.03	386.4084	22.3026	92.7332	49.44
34.415	39.37	119.373	64.9759	89.01	374.5283	21.2942	89.9455	48.06
37.215	41.65	123.906	72.2768	97.16	401.6022	22.8141	97.8173	52.07
39.939	44.12	130.264	76.969	102.39	423.8026	24.2144	105.0432	54.43
40.315	44.40	133.948	77.5518	105.11	422.1147	24.6000	106.5364	55.07
41.397	44.55	137.869	79.8624	107.35	440.7349	24.9881	109.8577	56.91
40.821	44.59	137.434	80.2345	106.08	442.8181	24.8712	109.8035	56.72

Source: Data compiled by researchers

Monthly returns based on NAV is calculated and are represented in the following table. Also, various measures like standard deviation, Sharpe ratio, Treynor ratio and Jensen ratios are calculated and presented in the following table.

#### Monthly Returns

Date	Nifty Returns	1	2	3	4	5
		DSP ELSS Tax Saver Fund - Regular Plan - Growth	HDFC ELSS Tax saver - Growth Plan	Quant ELSS Tax Saver Fund - Growth Option - Regular Plan	Franklin India ELSS Tax Saver Fund- Growth	SBI Long Duration Fund - Regular Plan - Growth
03-Apr-23	-	-	-	-	-	-
02-May-23	4.32	3.49	3.64	4.91	3.53	2.21
01-Jun-23	2.20	3.28	2.30	1.58	3.01	1.66
03-Jul-23	4.12	4.78	5.80	5.87	4.85	-1.46
01-Aug-23	2.33	4.69	3.96	4.9	5.00	0.62
01-Sep-23	-1.70	0.00	1.22	1.67	1.43	0.76
03-Oct-23	0.85	2.1	0.55	1.41	1.83	-0.38
01-Nov-23	-2.69	-3.42	-1.86	-2.78	-2.46	-0.47
01-Dec-23	6.26	9.57	9.58	10.23	8.01	0.47
01-Jan-24	7.60	7.40	6.80	9.80	7.30	1.60
01-Feb-24	-0.01	1.44	2.85	5.25	1.86	3.38
01-Mar-24	2.38	3.81	3.71	4.51	4.13	1.01
31-Mar-24	0.45	-2.38	-0.13	-1.66	-0.66	0.69
Total	26.11	34.76	38.42	45.69	37.83	10.09

Average Return	2.18	2.9	3.2	3.81	3.15	0.84
Annualized Return	28.84	39.86	45.21	55.29	44.54	10.47
Monthly SD	3.06	3.71	3.16	3.99	3.02	1.29
Annualized SD	10.6	12.85	10.95	13.82	10.46	4.47
Beta	-	1.1	0.92	1.12	0.9	0.04
Risk Free Rate	7.1					
Sharpe Ratio	2.051	2.55	3.48	3.49	3.58	0.75
Treynor ratio	-	29.78	41.42	43.03	41.60	84.18
Jensen Ratio	-	8.85	18.11	23.84	17.87	2.50

	6	7	8	9	10
Date	Motilal Oswal ELSS Tax Saver Fund - Regular Plan - Growth Option	Kotak ELSS Tax Saver Fund- Growth	Mirae Asset ELSS Tax Saver Fund - Regular Plan - Growth	Canara Robeco ELSS Tax Saver - Regular Plan - IDCW (Payout)	Bandhan ELSS Tax Saver Fund - Regular Plan - Growth
03-Apr-23	-	-	-	-	-
02-May-23	3.41	3.92	3.88	3.64	3.68
01-Jun-23	4.95	2.32	2.75	3.21	4.73
03-Jul-23	5.72	4.85	5.00	4.68	4.53
01-Aug-23	2.09	3.82	4.19	2.44	4.80
01-Sep-23	2.28	0.96	0.97	-0.37	1.35
03-Oct-23	2.41	0.68	0.18	0.82	0.18
01-Nov-23	-2.96	-3.28	-3.95	-2.89	0.00
01-Dec-23	11.18	6.85	8.14	5.79	3.80
01-Jan-24	6.83	5.18	7.32	5.93	5.13
01-Feb-24	2.90	0.90	0.94	0.63	2.83
01-Mar-24	4.04	5.78	2.68	0.34	2.93
31-Mar-24	1.79	0.57	-1.40	0.90	-0.32
Total	44.64	32.55	30.7	25.12	33.64
Average Return	3.72	2.71	2.56	2.09	2.80
Annualized Return	54.1	37.28	34.57	26.71	39.06
Monthly SD	3.39	2.88	3.48	2.66	2.01
Annualized SD	11.74	9.98	12.06	9.21	6.96
Beta	0.93	0.82	1.05	0.82	0.49
Sharpe Ratio	4.00357	3.02364	2.27792	2.12944	4.5917
Treynor ratio	50.5397	36.7999	26.1636	23.9172	65.2208
Jensen Ratio	26.78	12.3458	4.64055	1.78204	21.3036

	11	12	13	14	15	16
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Date	Baroda Bnp Paribas ELSS Tax Saver Fund - Regular - Growth Option	Invesco India ELSS Tax Saver Fund - Growth	Sundaram ELSS Tax Saver Fund Regular Growth	Mahindra Manulife ELSS Tax Saver Fund- Regular Plan - Growth	Nippon India Tax Saver (ELSS) Fund- Growth Plan- Growth Option	Union ELSS Tax Saver Fund - Growth Option
03-Apr-23	-	-	-	-	-	-
02-May-23	3.62	3.88	3.58	3.33	3.53	3.34
01-Jun-23	3.81	4.32	3.44	3.42	2.58	4.24
03-Jul-23	5.24	5.99	5.71	5.59	5.97	4.83
01-Aug-23	2.57	2.65	3.29	2.59	4.44	3.67
01-Sep-23	0.86	1.35	0.5	1.36	0.92	1.16
03-Oct-23	0.43	1.2	0.64	1.22	0.96	1.08
01-Nov-23	-2.24	-2.22	-3.07	-4.52	-3.01	-2.79
01-Dec-23	11.24	9.16	7.23	7.14	8.75	8.34
01-Jan-24	6.49	5.38	5.53	6.14	7.39	4.53
01-Feb-24	0.76	2.66	-0.4	1.59	1.42	1.18
01-Mar-24	2.98	2.13	4.41	1.58	3.12	3.34
31-Mar-24	0.47	-1.18	0.47	-0.47	-0.05	-0.33
Total	36.23	35.32	31.33	28.97	36.02	32.59
Average Return	3.02	2.94	2.61	2.41	3.00	2.72
Annualized Return	41.97	40.93	35.62	32.44	41.8	37.34
Monthly SD	3.52	3.11	3.00	3.14	3.30	2.87
Annualized SD	12.19	10.77	10.39	10.88	11.43	9.94
Beta	1.02	0.85	0.90	0.91	1.00	0.80
Sharpe Ratio	2.86	3.14	2.74	2.33	3.04	3.04
Treynor ratio	34.19	39.80	31.68	27.85	34.70	37.80
Jensen Ratio	12.69	15.35	8.95	5.56	12.96	12.84

As per above table Maximum average returns are provided by Quant ELSS Tax Saver Fund - Growth Option - Regular Plan, Returns followed by Motilal Oswal ELSS Tax Saver Fund - Regular Plan - Growth Option>Returns, HDFC ELSS Tax saver - Growth Plan Returns and Franklin India ELSS Tax Saver Fund-Growth Returns.

Ranks are assigned and represented in the following table based on performance measures Sharpe ratio, Treynor ratio and Jensen Ratio.

S. No.	Name of ELSS Scheme	Sharpe Ratio	Rank	Treynor Ratio	Rank	Jensen Ratio	Rank
1	DSP ELSS Tax Saver Fund - Regular Plan - Growth	2.55	12	29.78	13	8.85	12
2	HDFC ELSS Tax saver - Growth Plan	3.48	5	41.42	6	18.11	4
3	Quant ELSS Tax Saver Fund - Growth Option - Regular Plan	3.49	4	43.03	4	23.84	2



4	Franklin India ELSS Tax Saver Fund-Growth	3.58	3	41.6	5	17.87	5
5	SBI Long Duration Fund - Regular Plan - Growth	0.75	16	84.18	1	2.5	15
6	Motilal Oswal ELSS Tax Saver Fund - Regular Plan - Growth Option	4	2	50.54	3	26.78	1
7	Kotak ELSS Tax Saver Fund-Growth	3.02	9	36.8	8	12.35	10
8	Mirae Asset ELSS Tax Saver Fund - Regular Plan - Growth	2.28	14	26.16	15	4.64	14
9	Canara Robeco ELSS Tax Saver - Regular Plan -IDCW (Payout)	2.13	15	23.92	16	1.78	16
10	Bandhan ELSS Tax Saver Fund - Regular Plan - Growth	4.59	1	65.22	2	21.3	3
11	Baroda Bnp Paribas ELSS Tax Saver Fund - Regular - Growth Option	2.86	10	34.19	11	12.69	9
12	Invesco India ELSS Tax Saver Fund - Growth	3.14	6	39.8	7	15.35	6
13	Sundaram ELSS Tax Saver Fund Regular Growth	2.74	11	31.68	12	8.95	11
14	Mahindra Manulife ELSS Tax Saver Fund- Regular Plan - Growth	2.33	13	27.85	14	5.56	13
15	Nippon India Tax Saver (ELSS) Fund-Growth Plan-Growth Option	3.03	8	34.7	10	12.96	7
16	Union ELSS Tax Saver Fund - Growth Option	3.04	7	37.8	9	12.84	8

In above table ranks are assigned based on Sharpe ratio, Tryner ratio and Jensen ratio. By comparing all schemes with the performance measures, Bandhan ELSS Tax Saver Fund, Motilal Oswal ELSS Tax Saver Fund and Quant ELSS Tax saver fund and SBI Long Duration Fund performed well are assigned first rank as per performance ratios. Investors can invest in these banks to gain more profits.

#### Summery:

When considering ELSS funds for investment, the top-performing options not only provide high returns but also manage risk effectively, making them suitable choices for investors looking to maximize their investments while benefiting from tax advantages. In the current study, Bandhan ELSS Tax Saver Fund offers superior risk-adjusted returns and strong performance. Motilal Oswal ELSS Tax Saver Fund and Quant ELSS provide excellent returns with good risk management. SBI Long Duration Fund and Canara Robeco ELSS tax saver show that high Treynor ratios don't always equate to overall strong performance.

This investigation illustrates that mutual funds, particularly diversified equity funds, can be an excellent investment vehicle for small investors in India. By analyzing historical performance through key ratios, investors can make informed decisions that align with their financial goals. The findings underscore the

importance of selecting funds based on comprehensive performance evaluations, ultimately aiding in achieving better investment outcomes.

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## EVALUATING THE FINANCIAL PERFORMANCE OF BANDHAN BANK: AN EXPLORATION OF ITS ROLE IN PROMOTING VIKSIT BHARAT

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### **Abstract**

*Bandhan Bank, established in the year 2015, is a leading private sector bank. It caters to under banked and non-banked sections of India. It focuses its service towards low-income groups, small enterprises and women entrepreneurs. Since its establishment, it has played a crucial in India's financial ecosystem by providing microloans and other banking services to rural and semi-urban regions of India. Financial performance is the ability of an entity to generate revenue and regulate expenses resulting in profitability over a period. It is important indicator of financial results and financial position of an organisation. It shows financial health and operating efficiency of the organisation. This paper intent to evaluate financial performance of Bandhan Bank. It also intent to understand strategic initiatives taken by bank for enhancement of their financial performance. The research also intent to study whether bank can contribute to achieve Viksit Bharat, the plan of present government. The study concludes that Bandhan Bank is growing continuously in terms of financial performance with the help of various ratios.*

**Keywords:** *Bandhan Bank, Financial Performance, Bank, Viksit Bharat, Ratio Analysis.*

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### **Introduction**

Bandhan Bank, established in the year 2015, is a leading private sector bank. It caters to under banked and non-banked sections of India. It focuses its service towards low-income groups, small enterprises and women entrepreneurs. Since its establishment, it has played a crucial in India's financial ecosystem by providing microloans and other banking services to rural and semi-urban regions of India. The bank has broaden its activities and started catering to retail and corporate clients by the way of providing financial and wealth management services.

Financial performance means the ability of an entity to generate revenue and regulate expenses resulting in profitability over a period. It is important indicator of financial results and financial position of an organisation. It shows financial health and operating efficiency of the organisation. Analysis of financial performance helps in taking decisions by various stakeholders of the organisation. It assess an organisation's profitability, stability and overall growth potentials.

Financial performance indicators are yardsticks used to evaluate a company's financial health. These indicators can be classified as:

1. **Profitability Ratios** – Measures company's ability to generate profits
2. **Liquidity Ratios** – suggests company's ability to meet short-term obligations
3. **Solvency Ratios** – Indicates company's long-term financial stability and ability to meet its debts
4. **Efficiency Ratios** – Helps to evaluate effective utilisation of company's assets
5. **Market Performance Ratios** – Reflects investor's perception and market value

By analyzing these indicators, stakeholders can make informed decisions, identify financial strengths and weaknesses, and strategize for sustainable growth.

Viksit Bharat is an initiative of Government of India, which aims at transforming India in to a developed country by 2047 – the year, which marks 100 years of India's Independence. The four major aspects,

which it focuses, are Agriculture, Youth, Poor and Women. Government have launch various schemes and reforms aligning this goal to achieve self-reliant and competitive India.

### **Review of Literature**

The researcher could not find much research paper on Bandhan bank so review of literature is done using articles, case study, Field Research report etc. done on Bandhan bank.

**Annu (2019)** in her research paper titled 'An Analysis of Financial Performance of Bandhan: Post Transformation Period' analysed financial performance of Bandhan Bank with the help of various ratios after its transformation from Non-banking financial company in to a bank. The study concluded that the bank is continuously growing and has a sound financial position.

**Shukla and Deo (2019)** focused on performance analysis of Bandhan Bank and studied satisfaction level of its customer. A survey was done on 300 customers of Bandhan bank. The data collected was analysed using perform factor analysis and T Test. The study inferred that the bank has made its presence in the eastern part of the country where other commercial banks were not present. Customers are very much satisfied with the services of the bank.

**Manepalli and Ramkumar (2019)** studied the performance of Bandhan Bank journey from its inception as an NGO till Micro Finance Lending Bank. The study concluded that bank has played an important role in creating awareness about financial products throughout India. It has emerged as Bank of Excellence focusing on financial inclusion and economic empowerment of weaker and disadvantaged section of the society.

**Jagtap (2017)** in its study 'Transformation From Financing Unit To Bank: Case Study of Bandhan, Kolkata.' narrates a brief history of Bandhan Bank which provides micro finance to poor rural section. The study also highlights the important parameters of the progress of Bandhan Bank. It also mentioned that this was the first micro finance institution to be transformed into bank in India.

### **Statement of the Problem**

Bandhan Bank has played a crucial role in promoting financial inclusion, especially through microfinance and small business lending which is aligning with India's vision of *Viksit Bharat 2047*. However, there is limited research about evaluating its financial performance. Financial performance indicators suggest profitability and stability of a company / organisation. The bank has enlarged its activities and reached among underserved communities; questions remain about its financial stability, profitability, asset quality, and overall impact on economic empowerment.

The research paper aims to bridge the gap by evaluating financial performance of Bandhan Bank employing key financial indicators and examining its role in fostering entrepreneurship, women's financial inclusion, and economic growth. The research aims at providing understanding into whether the bank's financial health supports its developmental objectives and what challenges it faces in sustaining long-term contributions to *Viksit Bharat*.

### **Objectives of the study**

1. To evaluate the financial performance of Bandhan Bank using Profitability ratios, Asset Quality Ratio, Liquidity Ratio, Capital Adequacy Ratio and Efficiency Ratio
2. To understand the strategic initiatives of Bandhan Bank to strengthen its financial performance

### **Research Design and Methodology**

For the research, secondary data is used. The Audited Financial Statement of Bandhan Bank is used to evaluate the financial performance of the bank. The study covers a period of 3 years i.e. from Financial Year 2021-22 to 2023-24. The performance is evaluated using Ratio analysis.

### Data analysis and Findings

The Financial Statements of last 3 years i.e. from the financial year 2021-22 to 2023-24 is use to evaluate Financial Performance of Bandhan Bank.

- a. Evaluation of Profitability of Bandhan bank was done by calculating Net Profit Ratio, Return on Assets and Return on Equity.

Ratios	2021-22 %	2022-23 %	2023-24 %
Net Profit Ratio	0.75	11.94	10.59
Return on Assets	0.09	1.40	1.25
Return on Equity	0.72	11.56	10.33

All profitability metrics were significantly low in 2021-22 due to the economic slowdown caused by the **second wave of COVID-19**. 2022-23 showed a **post-pandemic recovery**, improved business activity, and stronger financial management. The decline in 2023-24 is due to **slowdown in income growth**.

- b. Evaluation of Asset Quality of Bandhan bank was done by calculating Gross Non-Performing Assets Ratio, Net Non-Performing Assets Ratio and Provision Coverage Ratio

Ratios	2021-22 %	2022-23 %	2023-24 %
Gross Non-Performing Assets Ratio	6.46	4.47	3.84
Net Non-Performing Assets Ratio	1.66	1.17	1.11
Provision Coverage Ratio	75.48	76.82	71.84

The above table clearly shows that there is decline in NPA over the years, which shows improved asset quality of the bank. A slight reduction in Provision Coverage Ratio in 2023-24 is due to increase in buffer against potential NPAs.

- c. Determination of the Liquidity of Bandhan Bank was done using Credit-Deposit Ratio

Ratios	2021-22 %	2022-23 %	2023-24 %
Credit-Deposit Ratio	97.55	96.93	89.59

The Bank has maintained high Credit-Deposit ratio indicating strong loan disbursement. A slight dip in the year 2023-24 may be due to risk management measures or deposit growth is outpacing lending capacity.

- d. Capital Adequacy of Bandhan Bank was understood using Capital Adequacy Ratio and Tier 2 Capital Ratio

Ratios	2021-22 %	2022-23 %	2023-24 %
Capital Adequacy Ratio	20.9	19.76	18.28
Tier 2 Capital Ratio	1.21	1.06	1.07

Continuous decline in Capital Adequacy Ratio indicates reduction in capital buffer. But the ratio is above regulatory requirements.

- e. Evaluation of Efficiency of Bandhan Bank was done by calculating Cost to Income Ratio and Earnings Per Share

Ratios	2021-22	2022-23	2023-24
Cost to Income Ratio (%)	21.1	25.23	27.81
Earnings Per Share (Rs.)	0.78	13.62	13.84

Increase in operating ratio indicates expenses are growing faster than the income, which in turn will affect profitability. A higher EPS in 2022-23 shows stronger recovery post pandemic period.

### Strategic Initiatives of Bandhan Bank

The Bank has adopted several strategic initiatives to strengthen its financial performance. Few of the important strategies are listed below:

- Expansion of Banking Network
- Digital Transformation
- Microfinance and Financial Inclusion
- Diversification of Loan Portfolio
- Strengthening Risk Management and Asset Quality
- Partnerships and Collaborations
- Sustainable and Inclusive Growth

These initiatives have helped Bandhan Bank strengthen its market presence and position itself as a key player in India's financial inclusion journey.

### Conclusions

Bandhan Bank has shown **substantial enhancement in financial performance** over the last three years. There is good recovery in their performance post pandemic period. **Profitability** saw a sharp increase in **2022-23**, but a **minor dip in 2023-24** indicates the need for careful management of costs and income. There is decline in NPAs, which indicates that improvement in asset quality. The banks liquidity position is stable. Its capital adequacy ratio is strong. All the positive results of the bank shows that the bank is well-positioned to contribute to Visit Bharat, 2047. It focuses on Micro Finance, Financial Inclusion, Rural development, women empowerment and digital banking will enable it to contribute in Viksit Bharat.

### Suggestions

The Bandhan Bank is doing very well as far as financial results are concerned. It will positively contribute in economic development and financial inclusion. The Bank will play a pivotal role in achieving India's dream of Viksit Bharat. The bank needs to focus on earnings. Its operational efficiency needs attention. Slight reduction in Provision Coverage Ratio calls for caution. Credit-Deposit Ratio of the banks suggests a more conservative approach in lending the money. The bank also needs to optimize its capital.

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## EFFECT OF GST ON LOCAL RETAILERS IN THE AREAS OF WESTERN SUBURBS OF MUMBAI - LITERATURE REVIEW

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### Abstract

*The implementation of the Goods and Services Tax (GST) in India marked a significant shift in the country's taxation system, replacing multiple indirect taxes with a unified structure. This study examines the impact of GST on local retailers in the western suburbs of Mumbai, focusing on operational changes, compliance burdens, and overall business performance. While GST was introduced to simplify tax compliance and enhance transparency, many small retailers have faced challenges in adapting to the new system, including increased documentation requirements and initial confusion regarding tax rates. The study explores the mixed responses from retailers—some benefiting from input tax credit and streamlined logistics, while others struggle with higher compliance costs and technical challenges. Additionally, consumer demand fluctuations due to pricing adjustments post-GST are analyzed. The findings indicate that although GST aims to create a more efficient tax system, its impact on small retailers varies based on business scale, awareness, and adaptability. The study concludes that further refinements in GST policies, including simplified compliance procedures and better awareness programs, could enhance its effectiveness for small businesses.*

**Keywords:** Goods and Services Tax (GST), Local Retailers, Tax Compliance

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### INTRODUCTION TO REVIEW OF LITERATURE:

The review of literature provides an in-depth analysis of existing research on the impact of the Goods and Services Tax (GST) on the retail sector, particularly focusing on small and local retailers. Various studies have explored the implications of GST on business operations, tax compliance, and overall market efficiency. While some researchers emphasize the benefits of GST, such as streamlined taxation, reduced cascading effects, and enhanced supply chain efficiency, others highlight the difficulties faced by small retailers, including increased compliance costs, lack of awareness, and challenges in adapting to digital tax systems. The literature review aims to identify key trends, gaps in research, and the broader economic impact of GST on local retailers. This analysis helps in understanding how GST has influenced retail businesses in different regions and sectors, paving the way for further research in this domain.

### OBJECTIVES FOR REVIEW OF LITERATURE:

1. To examine the existing studies on the impact of GST on small and local retailers, focusing on both advantages and challenges.
2. To identify research gaps and areas where further investigation is needed, particularly concerning local retailers in suburban regions.
3. To analyze different perspectives from global and Indian studies to understand how GST implementation has varied across regions and economic conditions.

### LITERATURE REVIEW:

B.D. Hansraj & M. Naga Sulochna (2018) in their research paper explored the impact of GST on the retail sector and found that the effects would be positive, both in terms of operations and taxation. The implementation of GST is expected to foster growth in retail businesses, which in turn would contribute to the overall economic development of India. The system will eliminate multiple indirect taxes,

improve supply chain efficiency, and enable input tax credit, ultimately leading to lower prices for consumers. Overall, GST is viewed as a significant boost for the retail sector, despite some clauses, and is considered a major advancement with the introduction of a uniform tax rate.

Bar Hate (2018) pointed out that there is strong belief in the benefits GST will bring, regardless of business type or legal status, as many are frustrated with the current complicated tax system. A majority of respondents are optimistic that GST will lead to financial gains for their businesses and do not foresee any considerable rise in tax compliance costs. Interestingly, they anticipate a reduction in compliance expenditures after GST's implementation. However, the lack of awareness and indifference towards reforms may delay its smooth execution, particularly in smaller towns where no orientation programs have been organized by the authorities.

Poona M (2018) highlighted that GST could address some of the key issues in India's tax system, such as the cascading effect, tax evasion, and distortions. By merging state, central, and local taxes, it will enhance the competitiveness of industries, exporters, and companies. The expanded tax base resulting from GST implementation can also generate additional revenue, which could be utilized for national development.

Abhinav Jain, Co-founder & Director of Beacon (22 June 2017), noted that while GST is reducing costs at the backend, it is creating challenges for the retail sector. Specifically, rental costs, which are subject to a 15% service tax, cannot be avoided by retailers, making them an additional expense, unlike in other industries.

Krish Iyer, President & CEO of Wal-Mart India (June 1, 2017), expressed that GST represents a new approach to doing business. He emphasized that it will create a unified national market, which will improve the efficiency of supply chains and the Indian retail sector. The implementation of GST is expected to eliminate bottlenecks such as checkpoints and octroi payments, reducing the time trucks spend waiting and facilitating smoother movement of goods across states.

Vinod Kaushik (2016) observed that India's retail industry is growing rapidly, with projections estimating it will reach US \$1.3 trillion by 2020, growing at a compound annual rate of 16.7% from 2015-2020. Retail growth is expanding not only in major cities but also in Tier-II and Tier-III towns. The government has also implemented reforms to attract foreign investment, including allowing 51% FDI in multi-brand retail and 100% in single-brand retail.

Dr. Manmohan Singh, Former Prime Minister, Former RBI Governor (2017): The hasty implementation of the Goods and Services Tax slowed down the economic growth soon after demonetisation. Both demonetisation and the GST have had some impact on the GDP growth. The GDP growth rate came down from 7.2 per cent in 2015-16 to 5.7 per cent. The small industries and traders were badly hit by the implementation of GST.

The study concludes that most of the retailers are worrying about the fact that complex formalities and documentation coupled with vague or low clarity provisions has been adversely affected the retailers in their daily routine. Pre-GST is preferred to Post-GST in certain aspects constituting demand for products, services and compliance costs whereas post-GST is dominated in transparency and tax credit availability. The study discovered that the implementation of GST created a bleak impact even though various wholesalers and retailers had benefitted from the same. Despite the idea is tenable and exemplary, still GST has made certain problems to the business to operate. The major portion of the respondents have an opinion that GST can be revamped to an ideal system by eliminating technicality issues, diminishing tax rates, more clarity on provisions and avoiding needless complications. It can be

concluded that GST is a scientific system of taxation but in India it needs lot of amendments, convenience and rationalizations.

Agogo Mawuli (2014) cautioned that GST may not be suitable for low-income countries and recommended keeping the GST rate below 10% to promote growth.

Nitin Kumar (2014) noted that GST would eliminate distortions caused by the current tax system and foster a fairer tax structure regardless of location.

Nishitha Guptha (2014) believed GST's implementation would bring commercial benefits and contribute to economic growth, benefiting various sectors including trade, agriculture, and consumers.

Jaiprakash (2014) emphasized that GST would provide relief to industries and consumers by broadening the tax base and subsuming multiple taxes, suggesting that the current economic conditions are favorable for its introduction.

Saravanan Venkadasalam (2014) analyzed the impact of GST on national growth in ASEAN countries and found that while some nations saw positive effects, others like the Philippines and Thailand experienced negative outcomes. The success of GST depends on its design and compliance controls.

Benjamin Liu, Allen Huang, Brett Freudenberg (2014) The purpose of this paper was to investigate the impact of the Goods and Services Tax (GST) on mortgage pricing and to measure the GST shifting ratio of Australian credit unions. Using the proprietary data from 79 credit unions in Australia, they performed multivariate regression analysis on the effect of the GST on mortgage effective yield spreads and interest margins, respectively. The findings were that the introduction of the GST in July 2000 led to the substantial rise in mortgage costs charged by credit unions in the post-GST periods.

The New Zealand Government (2012) examined GST and import duties on goods in New Zealand, discussing exemptions and the application of taxes on imports, including those ordered online.

Dr. R. Vasanthagopal (2011) argued that transitioning to GST from India's current complex tax system would positively impact the growing Indian economy. He believed that the success of GST would lead to its adoption by over 130 countries, making it the preferred indirect tax system in Asia.

Ehtisham Ahmed and Satya Poddar (2009) noted that GST would simplify the tax system and increase economic output in India, but its benefits depend on the system's design. They highlighted that many countries have adopted GST, with some like India proposing a dual GST system involving both central and state taxes.

Govinda Rao (2009) discussed the shortcomings of the proposed GST model and suggested improvements to overcome the issues faced by the current VAT system. He emphasized the need for clarity and better implementation of GST in India.

Saira et al. (2010) reviewed global GST implementation and found that while it positively impacted revenues in most countries, Malaysians still felt uncertain about its benefits despite its success.

Torgler (2011) emphasized that tax morale plays a key role in taxpayer awareness, while Tekeli (2011) found that tax morale had little impact on tax awareness, supporting his conclusions with multiple regression analysis.

Research by Mustapha and Palil (2011) confirmed that tax compliance behavior is influenced by individual awareness, a finding supported by Razak and Adafula (2013) and Santi (2012), who showed a significant link between taxpayer awareness and compliance.

Jana V. M., Sarma, and V. Bhaskar (2012) provided a roadmap for GST implementation, detailing the constitutional changes required in India. Beri Yogita (2012) discussed the challenges and benefits of implementing GST, which would simplify the tax base by subsuming existing indirect taxes.

Syed Mohd Ali Taqvi (2013) explained that GST aims to create a unified market in India, benefiting all sectors, and would be implemented by both central and state governments as CGST and SGST.

Pall et al. (2013) found a significant relationship between tax awareness and knowledge. Individuals with more knowledge about tax systems are more likely to comply with tax regulations, as supported by Jatmiko (2006) and Tayib (1998).

Djawadi and Fahr (2013) confirmed that tax knowledge positively affects tax awareness, making taxpayers more informed and compliant with the system.

Agogo Mawuli (2014) cautioned that GST might not be suitable for low-income countries and should have a lower rate (under 10%) for growth. Jaiprakash (2014) emphasized that GST would benefit industries, trade, agriculture, and consumers by providing wider coverage of input tax credits and phasing out other taxes.

Nitin Kumar (2014) argued that GST would eliminate distortions in India's indirect tax system and promote an unbiased tax structure.

Girish Garg (2014) highlighted that GST is a logical step in India's indirect tax reform, aiming to create a unified market, improve tax collection, and strengthen the economy by reducing tax barriers between states.

Pinki, Supriya Kamna, and Richa Verma (2014) highlighted that GST is India's most ambitious tax reform aimed at eliminating the cascading tax effect. Initially proposed in 2008, GST was meant to be implemented by 2010 but faced delays. With over 150 countries already adopting GST, it is seen as a key driver of economic growth. The authors concluded that the new Indian government supports GST implementation, which would benefit the central and state governments, as well as consumers, provided it is supported by robust IT infrastructure.

Boonyarat et al. (2014) used Structural Equation Modeling (SEM) to study the relationship between tax knowledge and awareness. Their findings revealed that a higher level of tax knowledge leads to greater awareness among taxpayers about the tax system.

Venkadasalam (2014) examined the effects of GST on national growth in ASEAN countries. He found that most ASEAN nations have already implemented GST, and the results show that consumer spending and government expenditure positively correlate with GDP growth, although the impact of GST varies by country.

Mohammad Ali Roshidi (2016) conducted a study in Malaysia to assess taxpayer awareness and perceptions of GST implementation. The results showed that most respondents had a negative view of GST, leading to resistance to its implementation.

A 2016 study in the *International Journal of Innovative Studies in Sociology and Humanities* discussed the benefits and challenges of GST implementation, highlighting its potential to bring significant changes to the current tax system.

The *Times of India* (July 27, 2017) reported that the GST rates for the same product can vary widely depending on where it is sold, leading to confusion among consumers. For example, Rasamalai is taxed at 5% when sold at a shop, but at 18% when served in a hotel, causing unexpected price differences for consumers.

Shakwiphee (2017) studied the level of awareness about GST among small business owners in Rajasthan and found that issues such as training and software availability need to be addressed to improve understanding and compliance.

Vineet Chauhan (2018) surveyed 148 small business owners in Rajasthan to assess their awareness of GST. The study identified challenges faced by business owners regarding GST implementation and the relief provided under the new law.

### RESEARCH GAP:

Despite extensive studies on the impact of GST in India, there is a noticeable lack of comprehensive research focusing specifically on its effects on local retailers in suburban areas, particularly in the western suburbs of Mumbai. While existing literature highlights the broader economic and business implications of GST, it does not adequately address the specific operational and financial challenges faced by small retailers. Furthermore, most studies have primarily examined GST's impact on large-scale industries and organized retail, leaving a gap in understanding how micro and small retailers have adapted to the new tax regime.

Additionally, there is limited research on the awareness levels and perceptions of small business owners regarding GST compliance, its benefits, and associated difficulties. The role of government initiatives in easing GST implementation for local businesses also remains underexplored. Moreover, studies have not sufficiently analyzed consumer behavior changes due to GST and their influence on small retailers. This study aims to bridge these gaps by providing empirical insights into the real-time challenges and benefits experienced by local retailers, evaluating policy effectiveness, and suggesting measures for improving GST implementation to better support small businesses.

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## KEY CHALLENGES IN IMPLEMENTING PEDAGOGICAL INNOVATIONS IN INDIAN COLLEGES

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### **Abstract**

*The National Education Policy (NEP) 2020 has set ambitious goals for transforming the educational landscape in India, particularly through the adoption of innovative pedagogical practices. However, the implementation of these innovations in Indian colleges faces several challenges, including infrastructural deficiencies, resistance to change among educators, and disparities in access to technology. This research paper explores these key challenges, offering a comprehensive analysis of their implications for effective teaching and learning. Through a mixed-methods approach that combines qualitative and quantitative data, this study highlights the barriers to implementing pedagogical innovations and suggests potential solutions to overcome these obstacles.*

**Keywords:** Pedagogical Innovations, Higher Education, National Education Policy 2020, Implementation Challenges, India

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### ➤ **INTRODUCTION**

The landscape of higher education in India is undergoing significant changes with the introduction of the National Education Policy (NEP) 2020. This policy aims to enhance the quality of education by promoting innovative teaching methodologies that foster critical thinking, creativity, and problem-solving skills among students. However, despite the potential benefits of these pedagogical innovations, their implementation in Indian colleges is fraught with challenges. Understanding these challenges is crucial for educators, policymakers, and stakeholders who aim to improve educational outcomes.

### ➤ **RESEARCH METHODOLOGY**

This study employs a mixed-methods approach combining qualitative and quantitative research methods. The data collection process involved:

**Surveys:** A structured questionnaire was distributed among faculty members across various colleges in India to gather quantitative data on their experiences with implementing pedagogical innovations.

**Interviews:** In-depth interviews were conducted with selected educators and administrators to gain qualitative insights into the challenges they face.

**Focus Groups:** Focus group discussions with students provided additional perspectives on how pedagogical innovations impact their learning experiences.

**Data Analysis:** Quantitative data were analyzed using statistical software, while qualitative data were coded thematically for emerging patterns.

### ➤ **PROBLEMS IN IMPLEMENTING PEDAGOGICAL INNOVATIONS**

#### **1. Infrastructural Deficiencies**

One of the most pressing challenges in implementing pedagogical innovations is the lack of adequate infrastructure. Many colleges in rural areas face issues such as insufficient access to technology, inadequate classroom facilities, and unreliable internet connectivity. These infrastructural shortcomings hinder the effective integration of innovative teaching practices.

#### **2. Resistance to Change**

Resistance to change is a significant barrier to adopting new pedagogical approaches. Many educators are accustomed to traditional teaching methods that emphasize rote learning and standardized testing.



This reluctance to embrace innovative practices can stem from a lack of awareness about their benefits or fear of the unknown.

### **3. Disparities in Access to Technology**

The digital divide presents another challenge in implementing pedagogical innovations. While urban institutions may have access to advanced technological tools and resources, rural colleges often struggle with basic technological infrastructure. This disparity limits opportunities for students and educators alike.

### **4. Insufficient Teacher Training**

Effective implementation of innovative pedagogies requires well-trained educators who are equipped with the necessary skills and knowledge. However, many teachers lack adequate training in new teaching methodologies and technologies, which can impede their ability to implement these innovations effectively.

### **5. Curriculum Constraints**

Existing curricula may not be designed to accommodate innovative teaching practices. Rigid curricular structures can limit educators' flexibility in adopting new methodologies that promote active learning and student engagement.

## **➤ STRATEGIES FOR TRAINING TEACHERS TO USE PEDAGOGICAL INNOVATIONS**

Integrating pedagogical innovations into teaching practices requires effective training strategies for educators. Here are some of the most effective strategies for training teachers to use these innovations:

### **1. Ongoing Professional Development**

**Continuous Learning:** Implementing regular professional development programs ensures that teachers stay updated on the latest pedagogical strategies and technologies. Workshops, seminars, and online courses can be tailored to focus on innovative teaching methods, allowing educators to explore and practice new techniques in a supportive environment.

### **2. Collaborative Learning Communities**

**Peer Collaboration:** Establishing professional learning communities (PLCs) encourages teachers to collaborate, share best practices, and support each other in implementing innovative pedagogies. This collaborative approach fosters a culture of continuous improvement and helps educators feel less isolated in their efforts.

### **3. Mentorship Programs**

**Experienced Guidance:** Pairing less experienced teachers with mentors who are skilled in innovative teaching methods provides personalized support. Mentors can offer practical advice, model effective strategies, and help mentees navigate challenges in adopting new pedagogies.

### **4. Hands-On Training**

**Practical Workshops:** Conducting hands-on workshops where teachers can experiment with innovative teaching tools and methodologies is crucial. This experiential learning approach allows educators to gain confidence in using new techniques before implementing them in their classrooms.

### **5. Technology Integration Training**

**Focus on EdTech Tools:** Providing specific training on educational technology tools can empower teachers to leverage technology effectively in their teaching. This includes training on using learning management systems, interactive whiteboards, and other digital resources that enhance student engagement.

## 6. Feedback Mechanisms

**Constructive Feedback:** Establishing systems for peer observation and feedback allows teachers to receive constructive criticism on their teaching practices. This process encourages reflection and helps educators refine their approaches to innovative pedagogy.

## 7. Flexible Curriculum Design

**Adaptable Frameworks:** Training should include guidance on how to design flexible curricula that accommodate various teaching methods. Educators should learn how to integrate project-based learning, flipped classrooms, and inquiry-based approaches into their lesson plans.

## 8. Student-Centered Approaches

**Emphasizing Engagement:** Training programs should emphasize student-centered teaching methods that prioritize active learning, critical thinking, and collaboration among students. Educators should be equipped with strategies to foster an engaging classroom environment.

## 9. Assessment Reform Training

**Innovative Assessment Practices:** Teachers need training on how to adapt assessment practices to align with innovative pedagogies. This includes developing formative assessments that measure student understanding in real-time rather than relying solely on traditional testing methods.

## 10. Utilizing Online Resources

**Access to Digital Content:** Providing access to online resources, such as webinars, instructional videos, and educational blogs, allows teachers to explore innovative practices at their own pace. This self-directed learning can complement formal training sessions

### ➤ COMPARISON OF CHALLENGES ACROSS DIFFERENT INSTITUTIONS

To better understand how these challenges manifest across various institutions, a comparative analysis was conducted involving urban colleges, rural colleges, and private institutions

Challenge	Urban Colleges	Rural Colleges	Private Institutions
Infrastructural Deficiencies	Generally well-equipped	Limited access to technology	Often well-resourced
Resistance to Change	Moderate resistance	High resistance due to tradition	Lower resistance due to innovation culture
Disparities in Access	Minimal disparities	Significant disparities	Access varies by funding
Insufficient Teacher Training	Regular professional development	Limited training opportunities	Focus on continuous training
Curriculum Constraints	Flexible curricula	Rigid curricula	More adaptable curricula

### ➤ THE KEY BARRIERS TO INTEGRATING TECHNOLOGY INTO THE CURRICULUM IN INDIAN COLLEGES

Integrating technology into the curriculum of Indian colleges presents several key barriers that hinder effective implementation. These challenges encompass infrastructural issues, lack of training, and disparities in access to resources. Here's a detailed overview of the primary barriers based on the search results:

### 1. Infrastructural Deficiencies

**Insufficient Infrastructure:** Many educational institutions, particularly in rural areas, lack the necessary infrastructure to support technology integration. This includes inadequate access to computers, unreliable internet connectivity, and insufficient electricity supply, which are crucial for utilizing technological tools effectively.

**Resource Limitations:** The financial constraints faced by many colleges prevent them from acquiring the latest technological gadgets and maintaining existing equipment. This lack of funding can lead to outdated hardware and software, further complicating efforts to integrate technology into the curriculum.

### 2. Lack of Teacher Training

**Insufficient Training Programs:** A significant barrier to technology integration is the lack of effective training for educators. Many teachers do not have the skills or knowledge necessary to incorporate technology into their teaching practices. This gap in training results in a reliance on traditional teaching methods and reluctance to adopt innovative approaches.

**Resistance to Change:** Even when training is available, some educators may resist adopting new technologies due to comfort with existing methodologies or skepticism about their effectiveness. This cultural resistance can stifle innovation within the classroom.

### 3. Disparities in Access

**Digital Divide:** There is a pronounced digital divide between urban and rural institutions in India. While urban colleges may have better access to technology and resources, rural colleges often struggle with basic technological infrastructure.

**Limited Student Access:** Many students do not have personal access to computers or reliable internet at home, which can hinder their ability to engage with technology-based learning tools effectively. This lack of access can create additional barriers to learning and limit the effectiveness of technology integration efforts.

### 4. Curriculum Constraints

**Rigid Curricula:** Existing curricula may not be designed to accommodate innovative teaching practices that utilize technology effectively. Rigid structures can limit educators' flexibility in adopting new methodologies that promote active learning and student engagement.

### 5. Technical Challenges

**Maintenance Issues:** The need for regular maintenance of technological tools is another barrier. Many institutions lack qualified personnel to handle technical issues, leading to prolonged downtimes and disruptions in the learning process.

### ➤ FINDINGS

The findings reveal several key insights regarding the challenges faced by Indian colleges in implementing pedagogical innovations:

**Infrastructural Issues:** A significant proportion of respondents from rural colleges reported inadequate technological resources as a major barrier.

**Resistance among Educators:** Many educators expressed skepticism about new teaching methods due to a lack of familiarity or perceived effectiveness.

**Digital Literacy Gaps:** Both students and teachers exhibited varying levels of digital literacy, impacting their ability to engage with new technologies effectively.

**Need for Professional Development:** There was a strong consensus on the necessity for ongoing professional development programs tailored to equip educators with innovative teaching strategies.

## ➤ **SOLUTIONS FOR RURAL COLLEGES OVERCOME THE CHALLENGES OF LIMITED INTERNET ACCESS**

### **1. Assess Current Infrastructure**

Before implementing solutions, colleges should conduct a thorough assessment of their existing infrastructure. This includes identifying hardware, software, and connectivity issues that need to be addressed. Understanding the current state will help in planning effective interventions.

### **2. Community Partnerships**

Forming partnerships with local governments, community organizations, and internet service providers (ISPs) can be instrumental in enhancing internet access. Collaborating with these entities can help leverage existing resources and financial support to improve connectivity.

### **3. Funding and Grants**

Rural colleges should actively seek government grants and funding opportunities specifically designed to enhance internet access in underserved areas. Programs aimed at closing the digital divide can provide financial assistance for infrastructure improvements.

### **4. Satellite Internet Solutions**

In remote areas where traditional broadband may not be feasible, satellite internet can serve as a viable alternative. This technology can provide reliable connectivity for educational institutions, enabling them to access online resources effectively.

### **5. Mobile Hotspots**

Providing students with mobile hotspots can be a cost-effective solution to enhance internet access. These devices allow students to connect to the internet from home or other locations, supplementing in-school connectivity.

### **6. Digital Literacy Training**

Implementing digital literacy programs is crucial for ensuring that both students and educators are proficient in using the internet for educational purposes. Training should cover internet safety, online research skills, and responsible online behavior.

### **7. Cloud-Based Resources**

Utilizing cloud-based educational resources and digital textbooks that can be accessed offline is an effective strategy for overcoming connectivity issues. This allows students to continue learning when they have limited or no internet access.

### **8. Parent and Community Involvement**

Engaging parents and the broader community in improved internet access is essential. Their support can play a significant role in lobbying for changes at local and governmental levels.

### **9. Pilot Programs**

Starting with a pilot program to implement internet access in select classrooms or grade levels allows institutions to learn from initial implementations before scaling up efforts across the college.

### **10. Sustainability Plans**

Developing sustainability plans ensures that once internet access is established, it is maintained and upgraded as needed. This may involve ongoing partnerships with ISPs and continuous funding strategies.

➤ **Using of mobile hotspots be effectively utilized to support remote learning in rural areas**

Mobile hotspots can be effectively utilized to support remote learning in rural areas through several strategies:

1. **Bridging the Digital Divide:** Mobile hotspots can provide a secure and consistent high-speed internet connection to students who lack internet access at home, bridging the gap between those who have access and those who don't.
2. **Flexibility and Deployment:** Hotspot devices are easy to deploy and redeploy, making them a versatile solution for various educational needs. They can be used in multiple scenarios, including:
3. **Equitable Expansion of Virtual Instruction:** By providing reliable internet access, Wi-Fi hotspots support the equitable expansion of virtual instruction, ensuring that students can continue learning regardless of external factors such as weather or other events that keep them away from school.
4. **Supporting Students with Limited Device Access:** Recognizing that mobile phones are often the primary connection to online resources for some students, optimizing for mobile-friendly content
5. **Digital Literacy Training:** To maximize the impact of wireless technology, educators should incorporate digital literacy programs into the curriculum.
6. **Addressing Social Isolation:** Schools can use mobile hotspots to bridge connectivity gaps, helping students engage with teachers and peers, and reducing feelings of isolation associated with remote learning.
7. **Community Access Points:** In addition to individual hotspots, schools can establish community access points where students can connect safely, further extending the reach of internet access.
8. **Combination with Offline Resources:** Mobile hotspots can be combined with resources like RACHEL devices.
9. **Mobile-Optimized Content:** Rural colleges can focus on mobile-enabled solutions, making it possible for students to study anywhere, anytime.

➤ **IMPROVE INFRASTRUCTURE TO SUPPORT TECHNOLOGY INTEGRATION**

To improve infrastructure and support technology integration, Indian colleges can focus on several key areas:

- **Invest in robust and reliable internet infrastructure** To ensure high-speed connectivity, colleges need to invest in broadband connections and Wi-Fi networks that can support a large number of devices. Colleges should assess their existing infrastructure to identify hardware, software, and connectivity issues that need to be addressed.
- **Ensure access to computing devices** Colleges need to ensure they have a sufficient number of computing devices such as computers, laptops, or tablets to facilitate ICT-based learning.
- **Upgrade facilities** Upgrading facilities such as classrooms, libraries, and laboratories is essential to create an environment conducive to technology integration. Some schools have embraced virtual classrooms and web conferencing tools to conduct live online sessions.
- **Implement e-learning platforms** These platforms provide a centralized hub for educational resources, assignments, and collaborative learning, enhancing communication between teachers and students and supporting remote learning initiatives. Existing platforms like

SWAYAM and DIKSHA can be leveraged to provide access to high-quality educational resources and online courses.

- **Focus on digital literacy and teacher training** Colleges should conduct training programs for teachers, students, and school administrators to enhance digital literacy skills. This includes training on using ICT tools, accessing online resources, and integrating technology into the curriculum.

➤ **KEY ROLES OF VOCATIONAL TRAINING PROGRAMS:**

- **Employability Enhancement:** Vocational courses equip students with practical skills and knowledge directly applicable to the job market, enhancing their employability. By 2025, the NEP 2020 aims to ensure that at least 50% of learners have exposure to vocational education.
- **Integrated Curriculum:** The NEP 2020 envisions a curriculum that seamlessly integrates vocational education with academic studies, adopting a multidisciplinary approach.
- **Early Exposure:** A fundamental principle of the NEP 2020 is the introduction of vocational education at an early stage. Vocational training is to be integrated into mainstream education from Grade 6 onwards.
- **Skill Development:** Vocational training is crucial for developing essential skills and fostering personal growth. The Skill India initiative, launched in 2015, aims to empower a large population with job-ready skills, emphasizing the importance of vocational training for employability.
- **Addressing Skill Gaps:** Vocational education and training (VET) is seen as a key route to overcome persisting skills gaps and pursue inclusive growth. It helps in creating skilled manpower and enhancing industrial productivity.
- **Flexibility and Mobility:** Vocational education should provide vertical and horizontal mobility for progressively gaining further qualifications. The General Education Council (GEC) will set up facilitative norms for credit transfer and equivalence between vocational and general education.
- **Alignment with Industry:** Vocational courses are developed in discussion with Sector Skill Councils (SSCs) and industry representatives. The courses cater to the new and emerging skill demands of the industry, particularly for Industry 4.0, Artificial Intelligence, Robotics, and Internet of Things (IoT).
- **Holistic Development:** The NEP 2020 envisions a holistic, student-centric, and outcome-driven education system that places a strong emphasis on vocational courses. This helps to empower students with employable skills, reduce unemployment, and foster entrepreneurship.

These initiatives signify a shift from traditional rote-based learning to a system that values practical skills and prepares students for the demands of a rapidly evolving job market

➤ **ROLE OF GOVERNMENT INITIATIVES FOR THE DIGITAL DIVIDE IN INDIAN COLLEGES**

Government initiatives play a crucial role in bridging the digital divide in Indian colleges, particularly by enhancing access to technology and improving digital literacy. Here are several key ways these initiatives contribute to this goal:



## 1. Infrastructure Development

- **BharatNet Project:** Launched to connect 250,000 panchayats through optical fiber, this initiative aims to provide high-speed internet connectivity to rural areas, enabling colleges to access digital resources and online learning platforms more effectively.
- **Optical Fiber Network (NOF-N):** This project focuses on ensuring broadband connectivity to over 200,000 gram panchayats, which is essential for supporting educational institutions in remote areas.

## 2. Digital Literacy Programs

- **National Digital Literacy Mission:** This initiative aims to enhance digital literacy across the country, ensuring that students and educators in rural colleges possess the necessary skills to utilize technology effectively.
- **PM Gramin Digital SakshartaAbhiyan:** Launched in 2017, this program focuses on improving digital literacy among rural households, which indirectly benefits students by equipping their families with essential digital skills.

## 3. National Digital University (NDU)

- The establishment of the National Digital University aims to democratize higher education by providing flexible and accessible online learning opportunities.

## 4. Collaboration with EdTech Platforms

- The government encourages partnerships between colleges and EdTech platforms, enabling institutions to offer online courses and broaden access to quality education.

## 5. Digital Infrastructure for Schools

- Initiatives like the **DIKSHA (Digital Infrastructure for Knowledge Sharing)** platform provide a centralized hub for educational resources, making it easier for colleges to access high-quality content that can enhance their curricula.

## 6. One Class One TV Channel Initiative

- Under the PM e-Vidya scheme, this initiative aims to expand educational reach through dedicated TV channels for different classes, addressing learning losses caused by school closures during the pandemic.

## 7. Common Service Centers (CSCs)

- The establishment of CSCs in partnership with the Ministry of Electronics and Information Technology (MeitY) provides high-quality internet access in remote areas.

## 8. Regulatory Support for Online Education

- The University Grants Commission (UGC) has modified regulations to allow universities to offer online courses more freely, provided they meet certain criteria.

## ➤ CONCLUSION

Implementing pedagogical innovations in Indian colleges presents numerous challenges that must be addressed for effective educational reform under NEP 2020. Infrastructural deficiencies, resistance to change among educators, disparities in access to technology, insufficient teacher training, and rigid curricula are significant barriers that hinder progress. To overcome these challenges, it is essential for policymakers and educational leaders to invest in infrastructure development, provide comprehensive training programs for educators, and foster a culture of innovation within institutions. By addressing these issues head-on, Indian higher education can move towards a more dynamic and effective system that meets the needs of 21st-century learners.

This outline provides a structured framework for developing a comprehensive research paper on the key challenges faced by Indian colleges in implementing pedagogical innovations. Each section can be



expanded with detailed analysis and relevant case studies or statistical data as needed to meet the desired word count while maintaining clarity and coherence throughout the paper.

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## A STUDY ON ASSESSMENT OF FINANCIAL LITERACY LEVELS AMONG AUTO DRIVERS OF MUMBAI SUBURBAN.

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### **Abstract**

*A significant portion of Indian society is still financially illiterate even after 75 years of freedom. Programmes for financial inclusion and financial literacy have been promoted in recent years by the RBI and the government. The goal of this study is to investigate the level of financial literacy among auto drives of Mumbai suburban based on their attitudes, and awareness related to financial instruments. The study also seeks to determine the relationship between economic condition and educational levels and financial literacy. A standardised questionnaire was used to obtain the survey data, which was collected in the Mumbai Suburban. 102 replies were gathered through a descriptive research that collected data. A greater number of auto drivers of Mumbai suburban who just lack the financial literacy required to make informed financial decisions growing. In India, auto drivers are highly important to the cities and suburbs. They significantly improve the available public transport options. Many people enter this field with the hopes of supporting themselves and their family financially with a reasonable salary. Auto drivers, still, struggle financially due to their poor incomes and savings.*

**Key words:** Financial, Economic, Literacy, Education, Auto, Suburban.

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### **INTRODUCTION:**

Although the modern world is getting increasingly digital, many people still lack financial literacy, which is a good thing. Financial literacy remains a low priority in India, in contrast to other developed nations worldwide. Poor financial decisions and investments are always the result of a lack of basic financial information. To fulfil their own goals, the majority of individuals in our nation invest in physical assets and short-term plans, which only provides short-term gains and does not contribute to the nation's economic progress (Naman Jain, Sohal & surana 2020).

In terms of financial literacy, India comes in at number 73 out of 144 nations with a rate of 24%, according to the Global Financial Literacy Survey, the largest and strongest one in the world. (Standard & Poor's, 2023). Due to its direct correlation with a nation's economic progress, financial literacy is emerging as one of the most important topics for the majority of the world today. The fact that India's rate of financial literacy is lower than that of other nations is concerning. A global survey indicates that an astonishing 76% of Indians do not know even the most basic financial principles, making them regrettably financially illiterate in this day and age.

According to the conduct surveys India's financial literacy percentage has continuously lagged behind the rest of the globe. It is past time for developing nations like India to understand the value of financial literacy, as the country's low level of financial literacy might seriously damage its hopes of developing as a global economic powerhouse in the years to come. As a result, we must make every effort to increase our financial literacy. It all comes down to understanding how to make, spend, invest, and save money. It is the ability to manage your money effectively by getting the most out of the financial tools and products that are useful to you. (Miloni Sanghani & Barath, 2020).

The RBI has continuously engaged the public over the years through media coverage, social media platforms, outreach activities, and financial literacy campaigns. The public is also empowered by the

Reserve Bank of India, which educates people about their rights and obligations regarding banking concerns and informs them about the services and facilities they might anticipate from banks and financial institutions through a "public awareness campaign." The campaigns are run on a regular basis in newspapers, on TV, radio, in movies, on digital media, via SMS, and hoardings with the slogan "RBI Kehta Hai"(NCFE).

Auto-rickshaw transportation is a vital part of suburban life as an alternative mode of transportation. (Sajikumar S, Anoop G A , 2023). When opposed to taxis, auto rickshaws require a smaller space on the road. Auto rickshaws reduce fuel consumption and pollution by 50% compared to taxis, which run petrol at a rate of 12 km per litter. The auto rickshaw sector in India offers many job opportunities to the country's unemployed workforce. The majority of people in the nation work in the unorganised sector to support themselves. Across the world, the unorganised sector has been the foundation of every economy. In terms of employment and the manufacturing of products and services, this industry makes a major contribution to the global economy.

Under these circumstances, these individuals are not eligible for various welfare and social security benefits related to living and working conditions, such as old age pensions, provision funds, maternity benefits, accidents claims, medical benefits, and many others. Auto-rickshaws are a step towards raising the standard of living in Indian cities and sustainable modes of transportation. By using auto-rickshaw services as a feeder mode, public transport networks are enhanced and provide simple access and connectivity across the city. Additionally, auto rickshaws serve as a substitute for private automobiles by bridging the gap between door-to-door services and public transportation.

Many individuals own autos. Individuals who own many autos often rent them to drivers. The majority of drivers of autos are from low-income families with limited literacy skills. (Chaya Bagrecha, 2015). This demographic has limited access to basic essentials like education, housing, and financial services like bank accounts and insurance. One possible explanation is their financial health.

#### **REVIEW OF LITERATURE :**

According to Shivakami, (2008) The study of auto rickshaw owners and drivers in the district Thootukodi, Tamil Nadu Studied socio-economic conditions of auto drivers. It was discovered that banks were the primary source of auto-rickshaw financing for the majority of owners/drivers of these autos, followed by money lenders. The cost of education rises with the owner-driver's income, while auto-rickshaw drivers are protected from this pattern. Both were dealing with a lot of issues related to their line of work, including middlemen who handled licences and traffic cops.

According to Akshay Mani and Pallavi, (2011) A detailed study on literature review of the auto rickshaw sector. The study's main conclusions included the lack of sensible licence regulations in different cities as well as a transparent, analytical framework for setting auto rates and revising them.

According to Aggarwal and Gupta, (2014) Study discovered a level of education and discipline positiveness influence on financial literacy. When compared to females, males were shown to have comparatively higher levels of financial awareness. It has been discovered that a number of demographic characteristics, including levels of discipline and education, significantly influence overall financial awareness. Early life is a perfect time to teach personal financial literacy. To create a collaborative and successful national financial education framework, more conversations involving parents, educators, financial institutions, and policy makers is necessary.

According to Anitha Ramachander, (2015) A study on the financial well-being of auto drivers in Bangalore city found that their lives are complicated with financial difficulties, such as low incomes

and savings. This paper examines the relationship between education and several aspects of financial well-being.

According to Rajesh Ranjan, (2015) A study investigates the relationship between Mumbai auto rickshaw drivers' quality of life and work-life balance. The writer has evaluated each aspect of time balance in relation to work-life balance. In addition to offering helpful information and drawing attention to the declining health of auto rickshaw drivers and highlighting their lives at work, the study serves as a provisional beginning point for a deeper comprehension of the current environment in which these drivers carry out their duties. According to this study, people who prioritise their family over their job or driving have a higher quality of life than those who perform the opposite.

According to sharma and Dixit, (2017) In their research, they attempted to investigate the connection between Mumbai City residents' financial literacy and demographic characteristics. They used a survey approach using questionnaires and conducted an exploratory sort of study. There were 250 people in the sample. Once more, scores were used as the basis for analysis, and chi-square was employed to make conclusions. They discovered that whereas age and educational level are significantly correlated with literacy rate, gender and literacy rate do not significantly correlate. Furthermore, there is no clear link between financial literacy and income.

### **RESEARCH METHODOLOGY :**

Research technique is a methodical strategy to addressing the research challenge. The core foundation for the entire research project is methodology, a research strategy that directs the selection of the best methodologies. It is necessary to distinguish between the two concepts that are meant by the terms "research methods" and "research methodology." Any methodology or procedure that will be employed in the research article might be considered a research method. Research methodology, which is far more comprehensive than research methodologies, is the first step in any research project.

Research methodology also explains how to carry out a study, where to look for information, and how to present the material that has been gathered. For example in the case, when building a structure, an architect must clarify each and every detail, analyze each choice he makes, and describe the outcome. Each research issue may require a distinct research methodology.

### **Objectives Of The Study :**

- 1) To understand financial concepts of auto drivers mumbai suburban.
- 2) To Analyse the relationship between economic status & financial literacy of auto drivers of mumbai suburban.
- 3) To Investigate the relationship between education level and monthly investment out of savings at auto drivers of mumbai suburban.

### **Hypothesis Of The Study :**

#### **Hypothesis 1**

H0 - There is no significant association between education level and monthly investment out of savings at auto drivers of mumbai suburban.

H1 - There is a significant association between education level and monthly investment out of savings at auto drivers of mumbai suburban.

#### **Hypothesis 2**

H0 - There is no significant relationship between economic status and financial literacy of auto drivers of mumbai suburban.

H1 - There is a significant relationship between economic status and financial literacy of auto drivers of mumbai suburban.

**Economic Status** We checked on years of auto-rickshaw driving experience, nature of residence, and number of members in the auto driver's family.

**Financial Literacy** We examine the basics of financial attitudes such as the importance of following a monthly expenditure plan, try to get all the information from all the authoritative sources and then invest the money.

**Financial Literacy** We have examined the level of awareness of financial instruments like fixed deposits, shares, mutual funds etc.

### **Data collection :**

Primary data has been used for the study. 102 respondents of auto drivers from Mumbai suburbs constituted the sample size for this study.

### **Limitations :**

Since it is hard to cover every aspect of the topic, every research project has some limitations. Additionally, variables and unpredictable situations may generate limitations in a study. The research efforts are less precise due to the constraints of the study. The following are some of the limitations of the study:

1. This study was place in a smaller geographic area and during a shorter length of time.
2. Several of the responders didn't accurately and thoughtfully respond to the questions.
3. The research would have been accurate if the sample size had been larger, it was little and constrained.

### **DATA ANALYSIS :**

- ✓ Out of 102 auto drivers, 46.10% belong to the age group 25 to 35 years.
- ✓ 48% of them have not received any formal education.
- ✓ 54.90% of the drivers have their own Auto and 45.10% of the people who have only auto driver.
- ✓ 71.60% of the auto drives earn around below 15,000 per month. However, 26.40% of people earn between 15,001 to 25,000 and only 2% of drivers earn up to 25,001 to 35,000 rupees per month.
- ✓ 65.70% of the driver's are unable to save their earnings and 32.30% of the driver's are able to save their earnings for their future requirements and 2.00% of them are able to save between 7,501 to 12,500.
- ✓ 70.60% of the driver's are unable to invest their earnings and 25.50% of the driver's are able to invest their earnings for their future requirements and 2.90% of them are able to invest between 5,001 to 10,000 and 1.00% are able to invest between 10,001 to 12,500.
- ✓ The majority of the drivers 94.10% are married.
- ✓ Out of 102 auto drives, 43.10% auto drivers have 5 to 10 years experience in auto driving and 34.30% have 11 to 15 years experience and 13.70% have more than 15 years experience and other have less than 5 years.
- ✓ 53.90% are residence in chawl on rent, 43.10% are having ownership room in chawl, 2.00% and 1.00% are having rental house and owned house.
- ✓ The majority of auto drives 61.80% have more than three members in there family.

The results of hypothesis testing are presented on based of below.

- A. Correlation Analysis.
- B. Chi Square Analysis.

## Correlation Analysis :

Correlation between Education level and monthly investment out of savings.

Statistics	Education level	Monthly investment out of savings
Pearson Correlation	49	72
	26	26
	13	3
	10	1
	4	0

Parameter	Value
Pearson correlation coefficient (r)	0.9859
$r^2$	0.9719
P-value	0.002013
Covariance	543.05
Sample size (n)	5
Statistic	10.192

Table 1

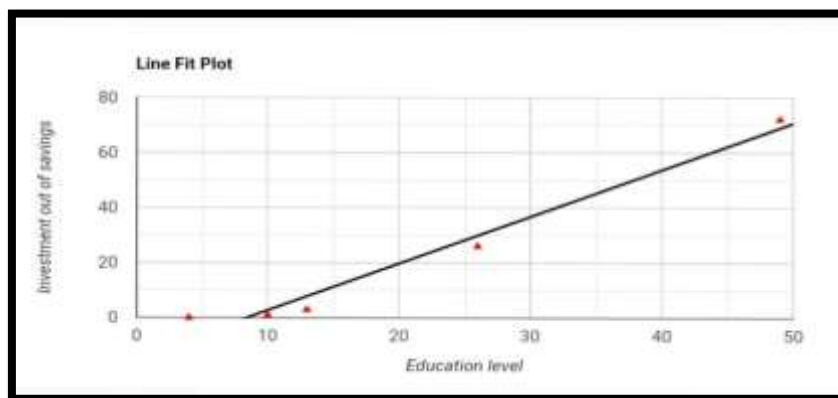


Figure 1

## Reporting correlation in APA Format

Results of the pearson correlation indicated that there is a significant large positive relationship between Education level and Investment out of savings, ( $r(3) = .986$ ,  $p = .002$ ).

$$r = 0.9859$$

Correlation-test, using T(df:3) distribution (two-tailed)[Validation]

We test the correlation using the t-distribution as the null correlation is zero.

The correlation's distribution is not symmetrical when  $r \neq 0$ , hence we use the Z distribution over Fisher transformation to create the confidence interval.

## 1. H0 hypothesis

H0 is rejected since the p-value is less than  $\alpha$ .

The population's correlation is considered to be not equal to the expected correlation (0).

In other words, the difference between the sample correlation and the expected correlation is big enough to be statistically significant.

## 2. P-value

The p-value equals 0.002013, ( $P(x \leq 10.192) = 0.999$ ). It means that the chance of type I error (rejecting a correct  $H_0$ ) is small: 0.002013 (0.2%).  $H_1$  is more strongly supported by p-values that are smaller.

### 3. Test statistic

The test statistic T equals 10.192, which is not in the 95% region of acceptance: [-3.1824, 3.1824].

The correlation (0.9859), is not in the 95% region of acceptance: [-0.8783, 0.8783].

The 95% confidence interval of correlation is: [0.7957, 0.9991].

There is a significant association between education level and monthly investment out of savings at auto drivers of mumbai suburban.

### Chi Square Analysis 1 :

Chi square analysis on economic status (years of auto-rickshaw driving experience ) and Financial literacy checked on financial attitudes such as the importance of following a monthly expenditure plan.

Number of categories	k	5
Sample size	n	102
Chi square test statistic	$\chi^2$	44.3461
Df = k-m-1= 5-0-1 = 4	DF	4
$\Phi = \sqrt{(\chi^2/n)}$	Phi effect ( $\Phi$ )	0.659368

Table 2.1

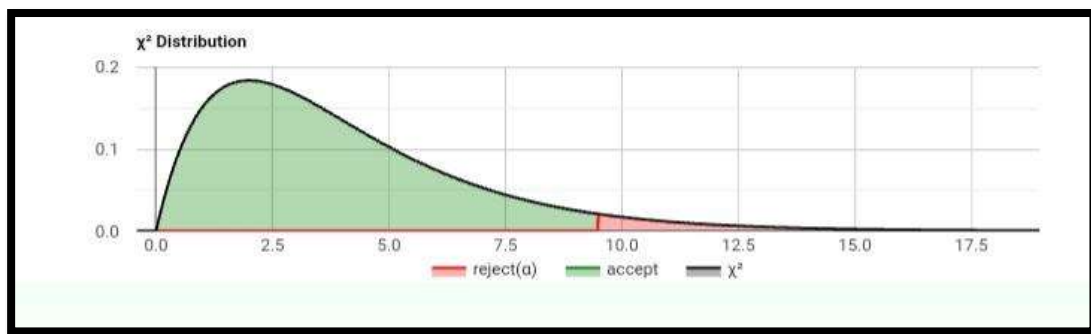


Figure 2.1

Validation of goodness of fit using the right-tailed  $\chi^2$  distribution (DF=4).

#### 1. $H_0$ hypothesis

Since  $p\text{-value} < \alpha$ ,  $H_0$  is rejected.

The observation do not suit the statistical model.

#### 2. P-value

The p-value equals  $5.437e-9$ , ( $p(x \leq \chi^2) = 1$ ). It means that the chance of type I error (rejecting a correct  $H_0$ ) is small:  $5.437e-9$  (5.4e-7%).

$H_1$  is more strongly supported by p-values that are smaller.

#### 3. The statistics

The test statistic  $\chi^2$  equals 44.3461, which is not in the 95% region of acceptance:  $[-\infty : 9.4877]$ .

#### 4. Effect size

The observed effect size phi is large, 0.66. This indicates that the magnitude of the difference between the observed data and the expected data is large.

### Chi Square Analysis 2 :



Chi square analysis on economic status (nature of residence) and financial literacy checked on financial attitudes such as try to get all the information from all the authoritative sources and then invest the money.

Number of categories	k	5
Sample size	n	102
Chi square test statistic	$\chi^2$	135.976406
Df = k-m-1 = 5-0-1 = 4	DF	4
$\Phi = \sqrt{(\chi^2/n)}$	Phi effect ( $\Phi$ )	1.1546

Table 2.2

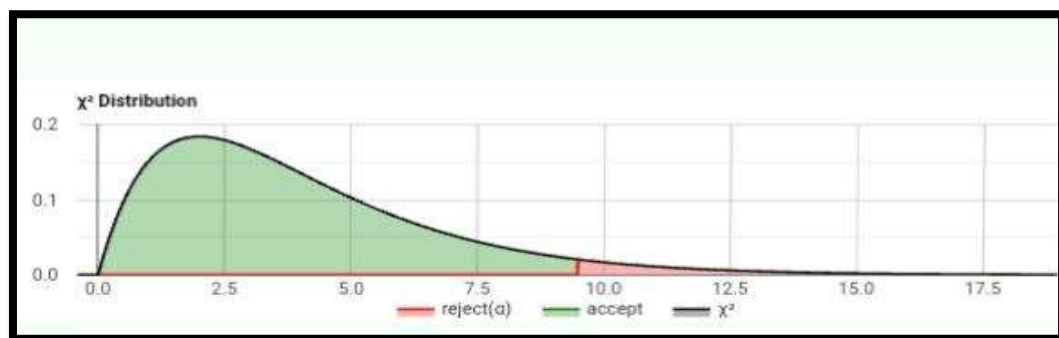


Figure 2.2

Validation of goodness of fit using the right-tailed  $\chi^2$  distribution (DF=4).

#### 1. H0 hypothesis

The H0 theory p-value  $< \alpha$  indicates the rejection of H0.

The observation do not suit the statistical model.

#### 2. P-value

The p-value equals 0, (  $p(x \leq \chi^2) = 1$  ). It indicates that there is a low probability of type I error, or rejecting a valid H0: 0 (0%).

The more strongly H1 is supported, the smaller the p-value.

#### 3. The statistics

The test statistic  $\chi^2$  equals 135.9764, which is not in the 95% region of acceptance:  $[-\infty : 9.4877]$ .

#### 4. Effect size

The observed effect size phi is large, 1.15. This indicates that the magnitude of the difference between the observed data and the expected data is large.

#### Chi Square Analysis 3 :

Chi square analysis on economic Status (number of members in the auto driver's family) and Financial Literacy We have examined the level of awareness of financial instruments like shares.

Number of categories	k	5
Sample size	n	102
Chi square test statistic	$\chi^2$	808.233333

$Df = k-m-1 = 5-0-1 = 4$	DF	4
$\Phi = \sqrt{(\chi^2/n)}$	Phi effect ( $\Phi$ )	2.814934

Table 2.3

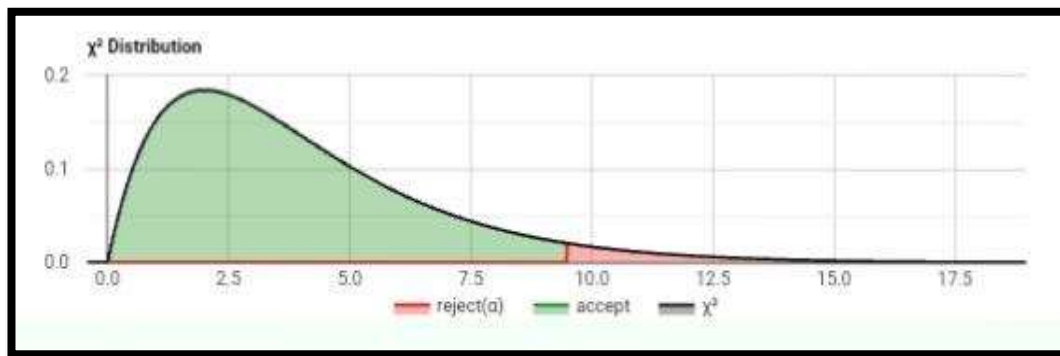


Figure 2.3

Validation of goodness of fit using the  $\chi^2$  distribution (DF=4) (right-tailed).

1. H0 hypothesis

Since p-value <  $\alpha$ , H0 is rejected.

The observation do not suit the statistical model.

2. P-value

The p-value equals 0, (  $p(x \leq \chi^2) = 1$  ). It indicates that there is a low probability of type I error, or rejecting a valid H0: 0 (0%).

The more strongly H1 is supported, the smaller the p-value.

3. The statistics

The test statistic  $\chi^2$  equals 808.2333, which is not in the 95% region of acceptance:  $[-\infty : 9.4877]$ .

4. Effect size

The observed effect size phi is large, 2.81. This indicates that the magnitude of the difference between the observed data and the expected data is large.

There is a significant relationship between economic status and financial literacy of auto drivers of mumbai suburban.

### Testing of Hypothesis :

Since there is a substantial correlation between education level and monthly savings investment among suburban Mumbai auto drivers, we can conclude that our hypothesis is supported by the survey and its evaluation.

We can conclude from the survey and analysis that our hypothesis is supported since there is a substantial correlation between the financial literacy and economic position of suburban Mumbai drivers.

### CONCLUSION:

The auto-rickshaw sector, while providing essential transportation services and employment opportunities, largely comprises individuals from economically disadvantaged backgrounds with limited access to education, housing, and financial services. This segment of the population often faces barriers to financial inclusion and is excluded from various welfare and social security benefits due to their informal employment status.

Based on the data analysis presented, it's evident that there is a significant association between education level and monthly investment out of savings among auto drivers in Mumbai suburban areas. Additionally, there is a significant relationship between economic status and financial literacy among these auto drivers.

These findings underscore the importance of addressing financial literacy among auto drivers, particularly focusing on education and economic empowerment initiatives. By improving financial literacy, these individuals can make better financial decisions, invest their earnings more wisely, and potentially improve their economic status over time.

Efforts should be made to provide accessible and tailored financial education programs to empower auto drivers and enhance their financial well-being. This could include workshops, seminars, and online resources specifically designed to meet their needs and improve their understanding of financial concepts and practices.

Overall, addressing financial literacy among auto drivers has the potential to positively impact their financial well-being and contribute to the overall economic development of Mumbai suburban areas.

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## ASSESSING THE SUSTAINABILITY AND CORPORATE SOCIAL RESPONSIBILITY INITIATIVES OF KOTAK MAHINDRA BANK: A COMPREHENSIVE ANALYSIS

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### Abstract

*An increasing understanding of corporate duties beyond profit production has led to the essential nature of sustainability and corporate social responsibility (CSR) activities in the business sector. The Kotak Mahindra Bank has established a reputation for taking an inventive approach to banking by launching a number of customer-friendly programs and digital banking services. The bank prioritizes advancing healthcare, education, and skill development as part of its CSR initiatives. The purpose of conducting this research is to assess the sustainability and CSR initiatives of Kotak Mahindra Bank. It was found from the three-year financial report (2022-2023, 2021-2022 and 2020-2021) that describes Kotak Mahindra Bank's Corporate Social Responsibility (CSR) initiatives that the bank has made major contributions to a number of important sectors, such as Relief and rehabilitation, Healthcare, Education and livelihood and sport. However, the Bank did not take up any initiative towards sports in the financial year 2021-2022.*

**Keywords:** Corporate social responsibility, sustainability, Banking

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### Introduction:

In the modern business world, Corporate social responsibility (CSR) has gained a lot of recognition and has become one of the regular practices adopted by organizations. "Corporate social responsibility" (CSR) describes commercial practices involving socially beneficial projects. In general, CSR is regarded as a company's method of balancing the demands of investors and the stakeholders with the economic, environmental, and social imperatives (also known as the "Triple Bottom Line Approach"). The Companies Act 1956 did not have any clause for CSR, it was the "Ministry of Corporate Affairs" that established the CSR guidelines in 2009 as an optional activity. However, under the New Companies Act of 2013, businesses must comply with the CSR standard if they have "a net worth of at least Rs. 500 crore, a turnover of Rs 1,000 crore or more, and a minimum net profit of Rs 5 crore in a fiscal year." Section 135 of the Companies Act 2013 states that these businesses are required to allocate "at least two percent of the average net profits of the company made during the three immediately preceding financial years" to CSR initiatives. (Dua, S. 2018). Furthermore, a committee on CSR of the relevant board of directors must be established. This committee is responsible for developing and suggesting to the board the CSR initiatives that the business can pursue. In order to achieve sustainable development, the Reserve Bank of India (RBI) recognized the critical importance of CSR and required banks to give incorporation of social and environmental concerns extra consideration. (Dua, S. 2018).

### Environmental Social Governance of Kotak Mahindra Bank

In the year 2007, the Kotak Mahindra Bank started their Kotak Mahindra Education Foundation (KEF). Under this scheme, the Bank is providing education to the urban poor. The other CSR activities of the bank are as follows:

#### Advancing livelihood and education

- KEF helps the urban poor by using an innovative and comprehensive strategy.

- Seven locations provide livelihood training.
- An initiative called School Leadership Development Intervention (SLDI) was launched in an effort to increase access to high-quality education. These programs have given 53 school leaders more authority.
- The School Teacher's Enrichment Programme (STEP) is a comprehensive platform designed to improve educators' instructional techniques.
- 33 unique seminars were held in order to raise awareness among the instructors about specific topics.
- The Parent Intervention Programme was launched with the aim of raising parental awareness on the significance of education.
- Nine sessions were held to empower and sensitize 2393 parents from 15 schools.
- Kotak Udaan provides marginalized pupils with various activities aimed at enhancing their self-esteem.
- Kotak offers scholarships to kids who have excelled academically in spite of difficult circumstances.

#### **Medical Care and Hygiene**

- The implementation of the midday meal plan resulted in 4870 kids receiving benefits.
- The “Majhi Swachcha Shala” campaign aims to instil in kids a value of cleanliness.
- 45 urinals and 33 toilets were constructed and fixed.
- Enough potable water was supplied to eight schools.
- Gaining Proficiency
- A vocational training project called Kotak Unnati is available to impoverished school and college dropouts.
- At a college in Mumbai, a scheme called Earn While You Learn was implemented.

#### **Participation of employees and volunteers**

- Camps for blood donation were set up.
- Thirty workers helped the people with painting and installing bricks.

#### **Offering assistance in times of natural disasters**

- During the floods in Chennai, the bank provided medical aid and interest-free loans to its staff.
- The Bank partnered with The Banyan, an NGO, to rehabilitate flood-affected households.
- Kotak Mahindra Bank is helping 10 Latur villages in Maharashtra that are experiencing a severe drought by providing them with drinkable water.

A major participant in the Indian banking industry, Kotak Mahindra Bank, is the primary subject of the study's sustainability and corporate social responsibility initiatives. An investigation of the bank's strategic goals and how they relate to CSR and sustainability goals is the purpose of the study. While providing insightful information on Kotak Mahindra Bank, this study lays the groundwork for future investigations into the broader effects of sustainability and corporate social responsibility (CSR) in the financial services sector.

#### **Review of Literature:**

1. **Dua, S. (2018).** This research examined the many corporate social responsibility programs implemented by private banks in India. The study discovered that by implementing CSR activities, the Indian banking industry is actively improving society and the environment. Private banks showed a

keen interest in incorporating sustainability into their business plans, realizing that corporate social responsibility was no longer just seen as a charitable endeavour. Rather, it was perceived as a way to promote their goods and improve their company's reputation. It was also mentioned that more money must be spent on CSR initiatives to comply with the new "Companies Act 2013". Due to fierce competition, banks realized they had to go above and beyond for their clients, which is why CSR an integral part of their operations.

2. **Kanika, Dhingra. (2023).** According to the authors, the study's purpose was to determine how corporate social responsibility (CSR) activities affected the net profit and total assets of the participating firms. Regression analysis, correlation tools, and SPSS software were utilized in the study to examine the data. The study's findings demonstrated a practical relationship between a company's total assets and profit after tax (PAT) in regard to its CSR initiatives. Furthermore, the regression analyses involving CSR with PAT and PAT with total assets revealed a significant level of less than 5%, indicating that CSR had a noteworthy influence on the organization's financial success. While CSR significantly contributed to changes in PAR and total assets, the report also showed that other factors were involved in these financial transactions.

3. **Kumar, K., & Prakash, A. (2019).** In order to classify and evaluate Indian financial institutions according to their performance in sustainable banking, the authors of this study looked at how much each institution has implemented sustainable banking practises. The study's findings showed that the Indian banking industry was only beginning to embrace global sustainability norms. According to the report, Indian banking institutions gave top priority to sustainability concerns that were directly connected to their main lines of business. These efforts included encouraging financial inclusion, raising financial literacy, and increasing energy efficiency. Interestingly, the study showed that these financial institutions were less concerned with sustainability reporting and more with addressing the social aspects of sustainability through their operations. Other equally crucial components of sustainable banking include environmental management and the creation of green goods and services.

4. **Mani, M. (2022).** This study examined the many sustainability initiatives that Indian private banks have implemented. This study aimed to examine the sustainability reporting procedures used by Indian banks. Ten Indian banks participated in this study, which examined and contrasted them based on four fundamental reporting principles: materiality, sustainability, inclusivity, and trustworthiness. Out of the ten banks examined, the analysis's findings showed that just four of them used the international sustainability reporting methodology. In addition to providing external audit assurance and identifying significant sustainability concerns in their reports, these institutions have actively engaged with their stakeholders. The study's author believes that banks and politicians may both benefit greatly from it.

5. **Sharma, M., & Choubey, A. (2022).** The focus of this paper was to propose a conceptual model of green banking initiatives: green CSR, internal process, product development, two potential outcomes, green brand image and trust. According to the study's findings, a significant portion of participants said that their particular banks were actively developing green banking services and goods (63%), incorporating green internal procedures into regular business operations (53%), and starting various green corporate social responsibility projects (78%). Furthermore, the survey found that over 60% of participants believed that the bank's improved green brand image was a contributing factor to the recovery of customer trust through green banking activities. Considering the dearth of prior research

on green banking in India, this qualitative study contributes to the body of knowledge in the subject and lays the foundation for future studies on green banking and its role in promoting sustainable development.

**6. Dutt, R., & Grewal, H. (2018).** This study sought to understand how various State Bank of India (SBI) stakeholders see, understand, and evaluate corporate social responsibility (CSR). The findings indicated that SBI's CSR initiatives were primarily focused on fostering skill development and livelihood creation. Furthermore, SBI aggressively promoted the interests of disadvantaged communities by providing funds for deserving initiatives in the fields of sports, healthcare, education, and sanitation. According to the poll, SBI's employees really felt that the corporation cared about society's long-term welfare. As the largest public sector bank in India, the company was accomplishing its objectives and had a well-defined strategy for meeting the needs of the community.

**7. Pratihari, S. K., & Uzma, S. H. (2020).** This research aimed to examine bankers' viewpoints on the integrated approach to corporate social responsibility (CSR) initiatives and their strategic importance in achieving long-term success in the banking sector. The study claims that bankers view corporate social responsibility (CSR) as a moral obligation that extends beyond routine banking tasks and is focused on improving public welfare. The study also found that the bank's image, brand, and reputation—as well as the development of a strong sense of trust between management and employees—were significantly impacted by CSR initiatives. Additionally, these CSR activities gave the banks a competitive edge by raising the bar for customer service and encouraging the development of a more positive corporate culture.

#### **Objectives of the Study:**

- To assess the sustainability and corporate social responsibility initiatives of Kotak Mahindra Bank for the financial year 2022-2023.
- To assess the sustainability and corporate social responsibility initiatives of Kotak Mahindra Bank for the financial year 2021-2022.
- To assess the sustainability and corporate social responsibility initiatives of Kotak Mahindra Bank for the financial year 2020-2021.

#### **Data Analysis and Interpretation:**

##### **CSR projects of Kotak Mahindra Bank for the Financial Year 2022-2023**

CSR Focus	State
<b>Education &amp; Livelihood</b>	Maharashtra, Karnataka, Delhi, Gujarat, Bihar, Rajasthan, Tamil Nadu, Arunachal Pradesh, Uttar Pradesh, Uttarakhand, Haryana, Madhya Pradesh and Jammu and Kashmir
<b>Healthcare</b>	Gujarat, West Bengal, Maharashtra, Telangana, Karnataka, Uttar Pradesh, Bihar, Odisha
<b>Environment &amp; Sustainable Development</b>	Maharashtra, Odisha, Gujarat, Madhya Pradesh, Karnataka, Telangana, Punjab, Assam, Tamil Nadu, Andhra Pradesh and Uttar Pradesh
<b>Sports</b>	Karnataka, Telangana

The above table lists the regions where Kotak Mahindra Bank took up the Corporate Social Responsibility (CSR) initiatives in the financial year 2023-2022. To improve access to high-quality education and generate employment opportunities, these efforts are focused on solving pressing social needs and promoting sustainable development throughout the nation and in various states. In Gujarat,



West Bengal, Maharashtra, Telangana, Karnataka, Uttar Pradesh, and Bihar, healthcare programs are prioritized to enhance healthcare accessibility and services. Maharashtra, Odisha, Gujarat, Madhya Pradesh, Karnataka, Telangana, Punjab, Assam, Tamil Nadu, Andhra Pradesh, and Uttar Pradesh are among the key regions for Environment & Sustainable Development, where initiatives are aimed at promoting sustainable growth and environmental preservation. Finally, when it comes to sports, Karnataka and Telangana are the main hubs for CSR initiatives that support sports growth and opportunities for ambitious sportsmen. These focused initiatives are a great example of how companies and groups are dedicated to improving particular areas of India.

#### **CSR projects of Kotak Mahindra Bank for the Financial Year 2021-2022**

<b>CSR Focus</b>	<b>State</b>
<b>Education &amp; Livelihood</b>	Maharashtra, Karnataka, Andhra Pradesh, Uttar Pradesh, Himachal Pradesh, Delhi, Telangana, Kerala, Madhya Pradesh
<b>Healthcare</b>	Gujarat, West Bengal, Maharashtra, Telangana, Uttar Pradesh, Delhi/ NCR, Jammu & Kashmir, Punjab, Rajasthan, Uttarakhand, Himachal Pradesh, Haryana, Madhya Pradesh
<b>Environment &amp; Sustainable Development</b>	Maharashtra, Tamilnadu, Gujarat, Madhya Pradesh, Punjab
<b>Sports</b>	Nil
<b>Relief &amp; Rehabilitation (COVID-19)</b>	Maharashtra, Karnataka, Tamil Nadu, Maharashtra, Bihar

The Corporate Social Responsibility (CSR) activities of Kotak Mahindra Bank for the Financial Year 2021–2022 were carefully targeted to address a number of important areas. The bank expanded into states like Maharashtra, Karnataka, Andhra Pradesh, Uttar Pradesh, Himachal Pradesh, Delhi, Telangana, Kerala, and Madhya Pradesh in the area of Education and livelihood. In the area of healthcare, the bank broadened the scope of its corporate social responsibility initiatives to encompass several states and union territories, including as Gujarat, West Bengal, Maharashtra, Telangana, Uttar Pradesh, Delhi/NCR, Jammu & Kashmir, Punjab, Rajasthan, Uttarakhand, Himachal Pradesh, Haryana, and Madhya Pradesh. Kotak Mahindra Bank's CSR initiatives in the areas of the environment and sustainable development were mostly focused in Maharashtra, Tamil Nadu, Gujarat, Madhya Pradesh, and Punjab. Relief and rehabilitation activities are underway in Bihar, Tamil Nadu, Maharashtra, and Karnataka. These initiatives demonstrated the bank's commitment to helping communities in times of crisis and uncertainty. For this fiscal year, the bank did not undertake any particular CSR initiatives in the field of sports.

#### **CSR projects of Kotak Mahindra Bank for the Financial Year 2020-2021**

<b>CSR Focus</b>	<b>State</b>
<b>Education &amp; Livelihood</b>	Bihar, Kerala, Uttarakhand, Maharashtra, Delhi, Karnataka, Rajasthan, Madhya Pradesh, Haryana, Gujarat
<b>Healthcare</b>	Telangana, Maharashtra, Gujarat, Delhi, Jammu & Kashmir, Uttar Pradesh, Rajasthan
<b>Environment &amp; Sustainable Development</b>	Maharashtra
<b>Sports</b>	Telangana, Karnataka
<b>Relief &amp; Rehabilitation (COVID-19)</b>	PAN India

Kotak Mahindra Bank's Corporate Social Responsibility (CSR) initiatives in the 2021–2022 Financial Year were purposefully focused on a number of important regions around India. Their emphasis on education and livelihood included a wide range of states, including Gujarat, Bihar, Kerala, Uttarakhand, Maharashtra, Delhi, Karnataka, Rajasthan, Madhya Pradesh, and Haryana. In the area of healthcare, the bank expanded its CSR efforts to Telangana, Maharashtra, Gujarat, Delhi, Jammu & Kashmir, Uttar Pradesh, and Rajasthan, with the goal of improving accessibility and healthcare services. The concentration of environmental sustainability initiatives in Maharashtra indicates the state's dedication to sustainable development and ecological preservation. In addition, the bank demonstrated its commitment to helping communities in need by actively participating in Relief and rehabilitation programs around the nation in the wake of the COVID-19 outbreak. Finally, the bank's comprehensive commitment to having a good and meaningful influence on education, healthcare, the environment, disaster relief, and sports development in the regions it serves is further demonstrated by the sports-related initiatives carried out in Telangana and Karnataka.

### **Conclusion:**

It is clear from examining the three years financial report that describe Kotak Mahindra Bank's Corporate Social Responsibility (CSR) projects throughout time that the bank has made major contributions to a number of important sectors, such as Relief and rehabilitation, Healthcare, and Education & Livelihood. These efforts demonstrate the bank's dedication to solving urgent social needs and advancing sustainable development throughout India. But the bank seems to be falling behind in environmental and sustainable development. The bank's environmental activities have been restricted to a small number of states throughout the course of all three fiscal years, with Maharashtra serving as a prominent focal point. This implies that the bank might not be as focused on encouraging sustainable growth and environmental preservation compared to other CSR sectors.

In order to comply with international standards for corporate social responsibility for sustainability and environmental preservation, Kotak Mahindra Bank ought to think about extending the reach of its environmental programmes to other states and areas. Increasing its focus to environmental sustainability would show a stronger commitment to tackling important environmental concerns, especially in the context of climate change and ecological preservation, and boost its CSR portfolio.

The bank's efforts in healthcare, education, and disaster assistance are admirable, but there is room for development in the area of environmental sustainability to provide a more comprehensive and well-rounded approach to corporate social responsibility.

### **Recommendations:**

Expanding its CSR efforts might be an achievable goal for Kotak Mahindra Bank if it concentrates on topics like financial inclusion and literacy, women's empowerment, skill development, rural development, digital inclusion, arts and culture, community involvement, and technology for social good. These initiatives have the potential to significantly improve their corporate social responsibility portfolio and advance financial inclusion, gender equality, economic empowerment, and general community development.

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## RISKY BUSINESS OR PROMISING OPPORTUNITY? MUMBAIKARS' PERCEPTION ON START-UPS

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### Abstract

*The rise of start-ups has played a pivotal role in reshaping industries and economies, fundamentally transforming the entrepreneurial landscape. As these innovative ventures continue to disrupt traditional business models, understanding the public's perception of start-ups becomes increasingly important. This research paper seeks to provide a comprehensive analysis of how individuals perceive start-up enterprises, investigating the various factors that influence these perceptions and exploring their broader implications. To achieve this, the study will utilize a quantitative research approach, gathering data through a survey conducted via Google Forms. The survey will be distributed to a diverse group of respondents to ensure a broad and representative perspective. The research will focus on several key aspects of start-up perception, including attitudes toward risk, innovation, and societal impact. It will also delve into how demographic factors such as age, gender, and income shape these perceptions. Additionally, the study will explore the role of educational exposure in shaping individual attitudes towards start-ups. The findings of this research have the potential to offer valuable insights for entrepreneurs, policymakers, and educators. By understanding how individuals perceive start-ups, strategies can be developed to foster supportive entrepreneurial ecosystems, promote innovation, and encourage the growth of start-ups. Furthermore, the research could inform the design of entrepreneurship education programs that better align with the needs and expectations of aspiring entrepreneurs. In conclusion, this research aims to enrich the growing body of knowledge surrounding entrepreneurship, providing new insights into individual perceptions of start-ups and their broader implications for innovation and economic growth.*

**Keywords:** entrepreneurship, innovation, perception, ecosystem, education

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## 1. Introduction

### 1.1 Background of the Study

Mumbai, often hailed as India's financial hub, has historically served as a fertile ground for innovation and entrepreneurial endeavours. With its bustling streets, towering skyscrapers, and diverse populace, Mumbai provides an exceptionally dynamic setting for start-ups to flourish. This research paper ventures into a crucial facet of this ecosystem: the way start-ups are perceived by the public in Mumbai. In recent years, the start-up landscape in Mumbai has undergone remarkable expansion, garnering both domestic and international recognition. The city has witnessed the rise of numerous technology-driven start-ups spanning sectors like e-commerce, fintech, healthcare, and more. These start-ups have not just disrupted traditional industries but have also significantly shaped the city's economic landscape. Nevertheless, the opinions and attitudes of Mumbai's residents toward this entrepreneurial surge remain a relatively unexplored terrain in academic studies.

Understanding how the public perceives start-ups hold paramount importance for several reasons. Firstly, it wields substantial influence over the success of these ventures. Favourable public perception can draw in customers, investors, and talent, while negative perceptions can stifle growth and sustainability. Furthermore, public sentiment can sway policy decisions and the overall support infrastructure for start-ups in the city.

This research aims to unravel the intricate web of factors that mould Mumbai's public perception of start-ups. It will delve into the socio-cultural, economic, and psychological aspects that shape how Mumbai's residents perceive these emerging enterprises. By scrutinizing variables like media

representation, educational background, cultural attitudes, and personal experiences, we endeavour to provide a holistic view of the dynamics influencing public opinion.

Employing a combination of surveys, interviews, and data analysis, this study endeavours to illuminate whether Mumbai's residents view start-ups as catalysts for innovation and economic progress or as potential disruptors of traditional industries. Ultimately, our research seeks to furnish insights that can guide policymakers, entrepreneurs, and investors in devising strategies to nurture a favourable and supportive milieu for start-ups in Mumbai, thus contributing to the city's ongoing evolution as a center of innovation and entrepreneurship.

## 1.2 Objective

1. To analyse the various cultural, social, economic, and educational factors that shape individuals' perceptions of start-ups.
2. To find out whether individuals hold inherent biases towards start-ups, either positive or negative, and determine the sources of such biases.
3. To examine how demographic factors such as age, gender, education, and occupation impact perceptions of start-ups.
4. To explore the potential policy implications of understanding these perceptions, providing valuable insights for policymakers, educators, and entrepreneurs.
5. To investigate the role of educational exposure in influencing an individual's perception of start-ups.

## 2. Review of Literature

**G. Geethanjali (2021)** in her study examined Bengaluru's start-up scene, focusing on funding, marketing, HR, and pandemic effects. It revealed the city's favourable start-up environment while identifying challenges in financing, retention, regulations, and founder skills. Start-ups emphasized digitization, innovation, and simplified regulations, advocating for better resources, ecosystem support, and awareness promotion.

**Jyotsna Thomas (2021)** emphasized that innovative, self-driven start-ups in India, particularly in Kerala, have global potential. Success requires collaboration between government, education, incubators, and investors. Education should foster innovation, incubators need improved facilities, government funding should be accessible, and a supportive ecosystem will attract investors. Industry-start-up partnerships can drive efficient product development, revitalizing Kerala's start-up ecosystem for industrial growth.

**Pramod Kumar Sinha (2022)** studied start-up performance using 340 clean data samples, 7 factors accounting for 83% variance were identified. Institutional support, innovation, and self-efficacy positively influenced start-up performance, while regulatory obstacles had a negative impact. Eco start-ups faced funding, marketing, and support challenges but had growth opportunities. Key concerns included networking, infrastructure, and institutional support. Despite challenges, most start-ups were in a growth phase, including expansion into global markets.

**Swati Patil (2019)** in her research focused on aiding start-ups in grasping initial financial considerations within an environmentally sustainable context. The study offers valuable insights for start-ups, policymakers, and researchers, emphasizing factors like customer acceptance, corporate performance, and financial support access. It underscores the significance of partnerships, open innovation, family background, and collaborative initiatives in shaping entrepreneurs' financial preferences for success.

### 3. Methodology of the Study

This study employs both primary and secondary data collection methods to analyse Mumbaiers' perceptions of start-ups. Primary data is collected through a structured survey questionnaire (Google Form) distributed to a diverse sample of respondents. The survey includes questions on awareness, attitudes, and factors influencing perceptions of start-ups. A convenient sampling technique is used to select participants, ensuring a mix of age groups, genders, and educational backgrounds, though most respondents are young adults (18-30 years).

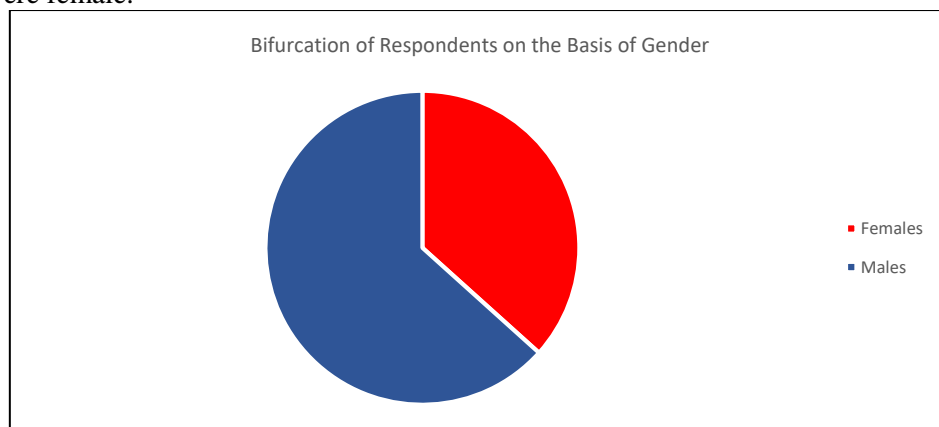
To enhance the depth of analysis, secondary data is sourced from research papers, academic journals, websites, and published reports related to entrepreneurship and start-up ecosystems in India. This provides a contextual understanding of trends and challenges affecting start-ups.

For data analysis, appropriate statistical tools such as graphs, tables, and percentages are utilized to interpret survey responses. The study identifies patterns in public perception and key influencing factors such as education, media, and financial security.

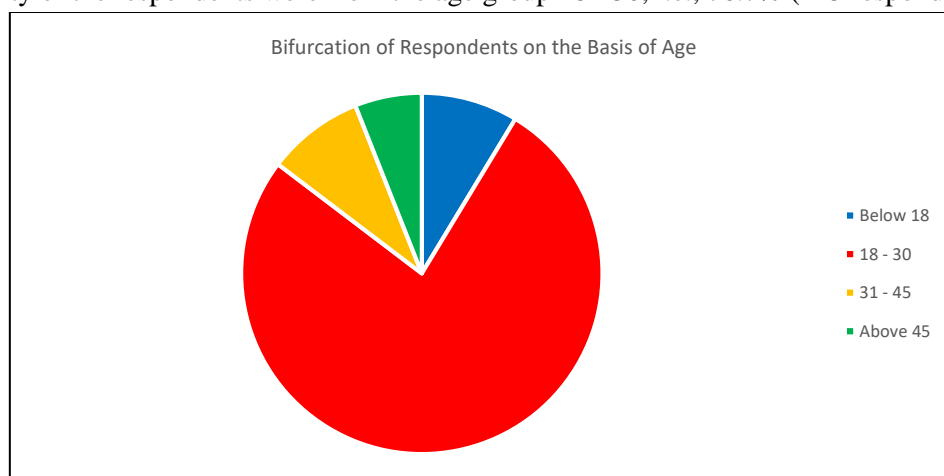
However, the study has limitations, as it focuses primarily on young adults and includes only 150 respondents, limiting its generalizability to the entire Mumbai population. Despite this, the research provides valuable insights into how start-ups are perceived and what influences these perceptions.

### 4. Data Analysis and Interpretation

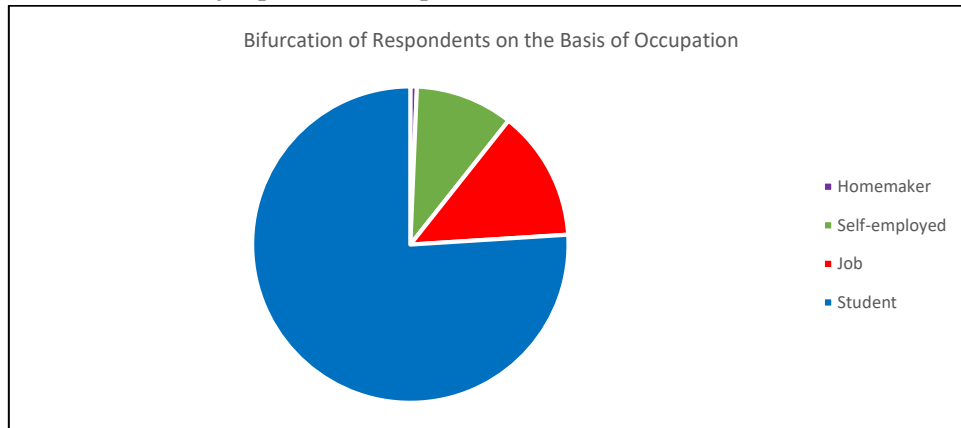
- Data was collected from 150 respondents out of which 63.3% (95) were male and the rest 36.7% (55) were female.



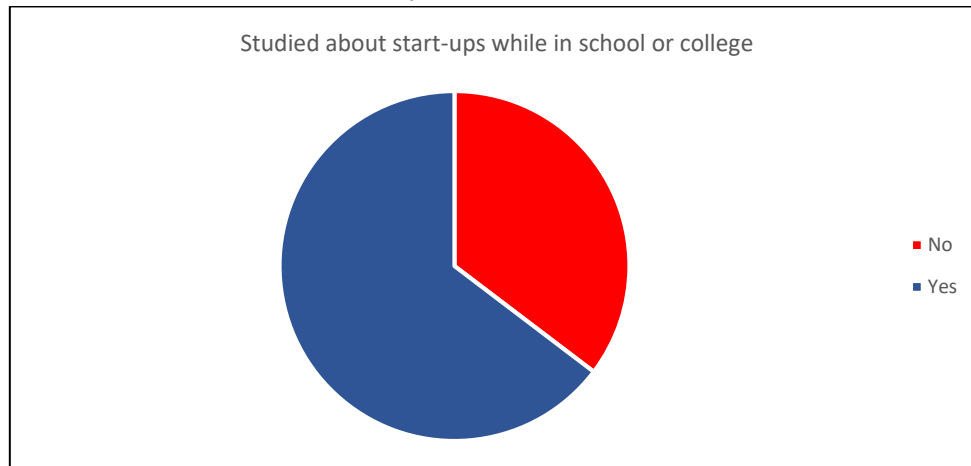
- Majority of the respondents were from the age group 18 - 30, i.e., 76.7% (115 respondents).



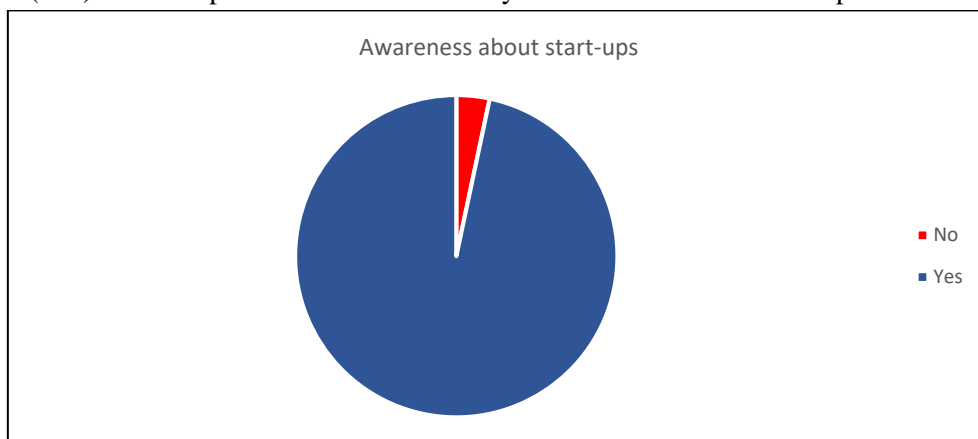
- Students formed the major part of the respondents.



- 64.7% (97) of the respondents have studied about start-ups while they were in school or college while the rest 35.3% (53) claim that they have not.

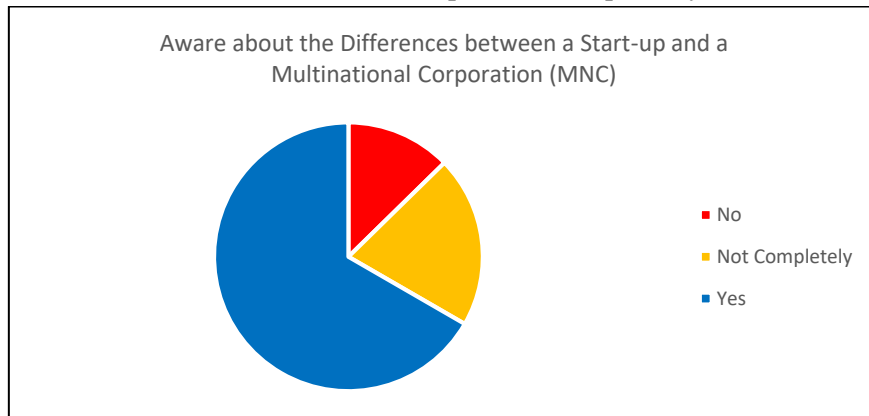


- 96.7% (145) of the respondents declare that they are aware of what a start-up is.

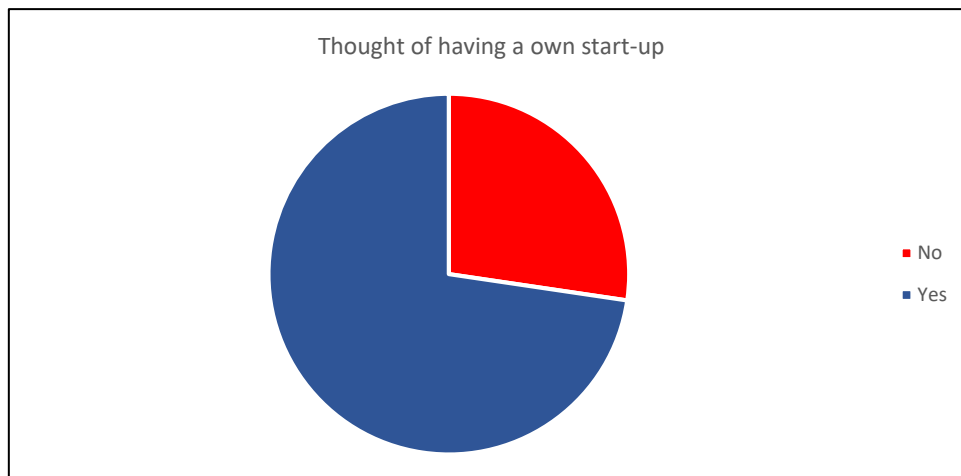




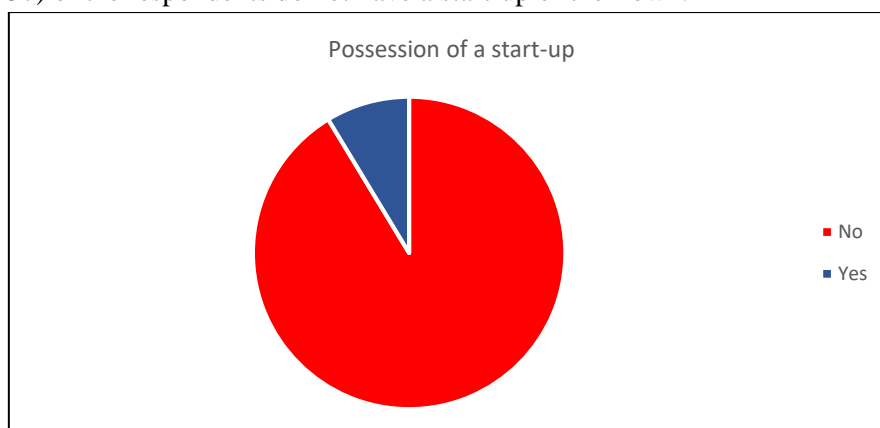
- 12.7% (19) of the respondents do not know the difference between a start-up and a multinational corporation (MNC) while 20.7% (31) of the respondents are partially aware of the same.



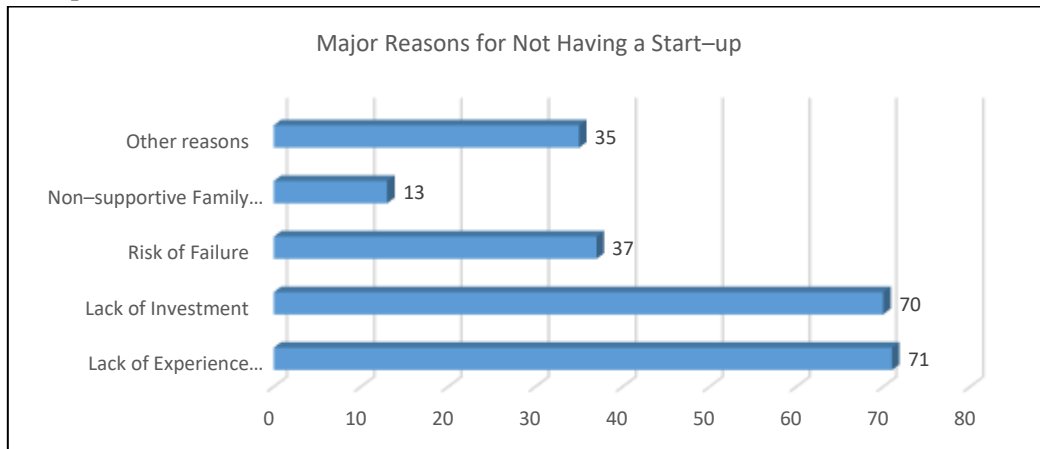
- 72.7% (109) of the respondents have, at some point of time, thought of establishing their own start-ups.



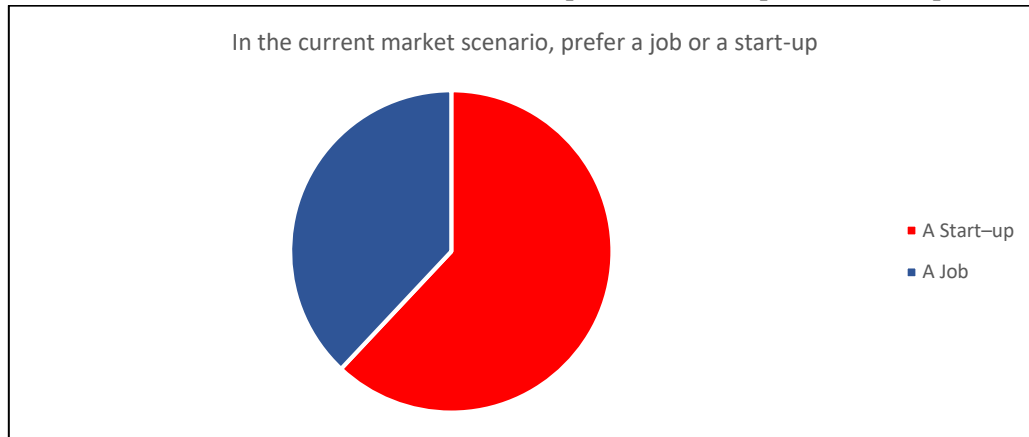
- 91.3% (137) of the respondents do not have a start-up of their own.



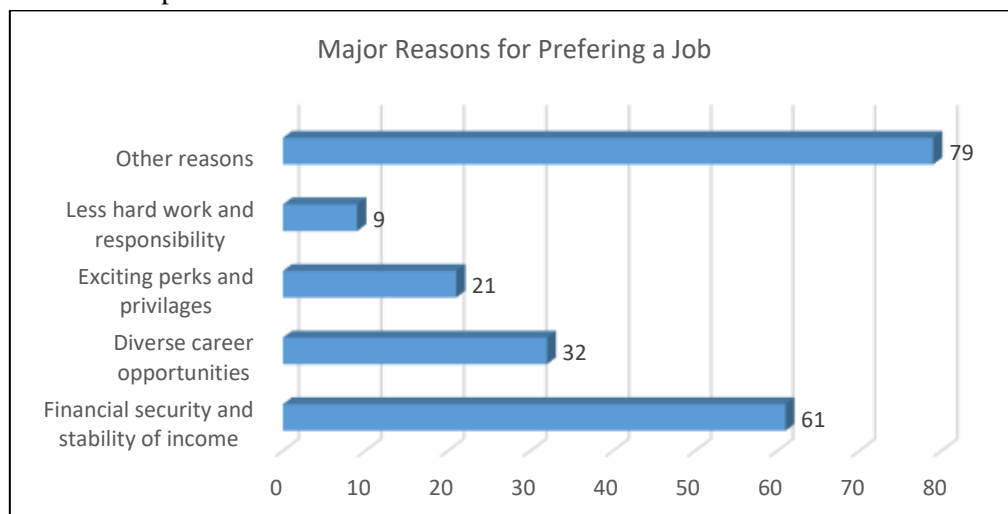
- Lack of experience or education and lack of investment are major reasons why people do not have a start-up.



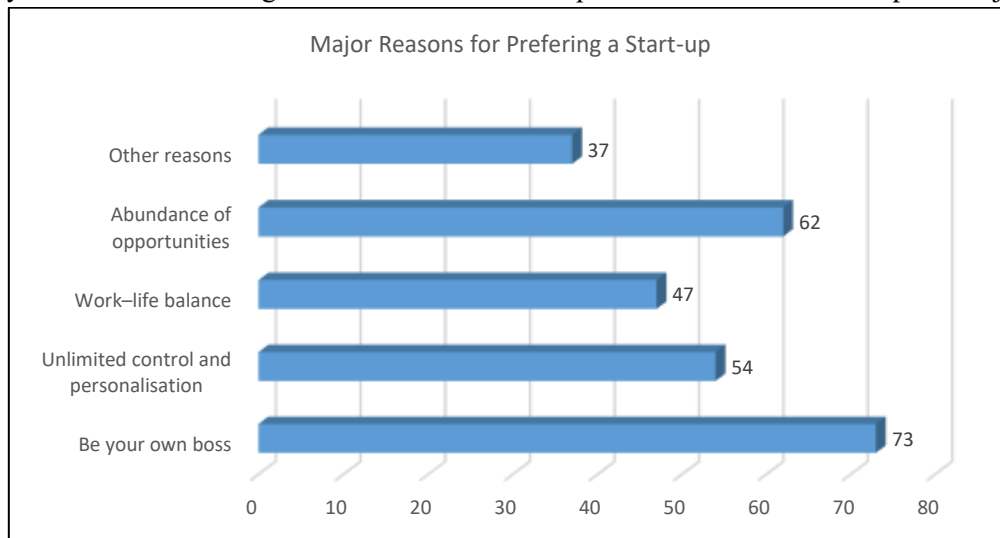
- In the current market scenario, 62% (93) of the respondents would prefer a start-up over a job.



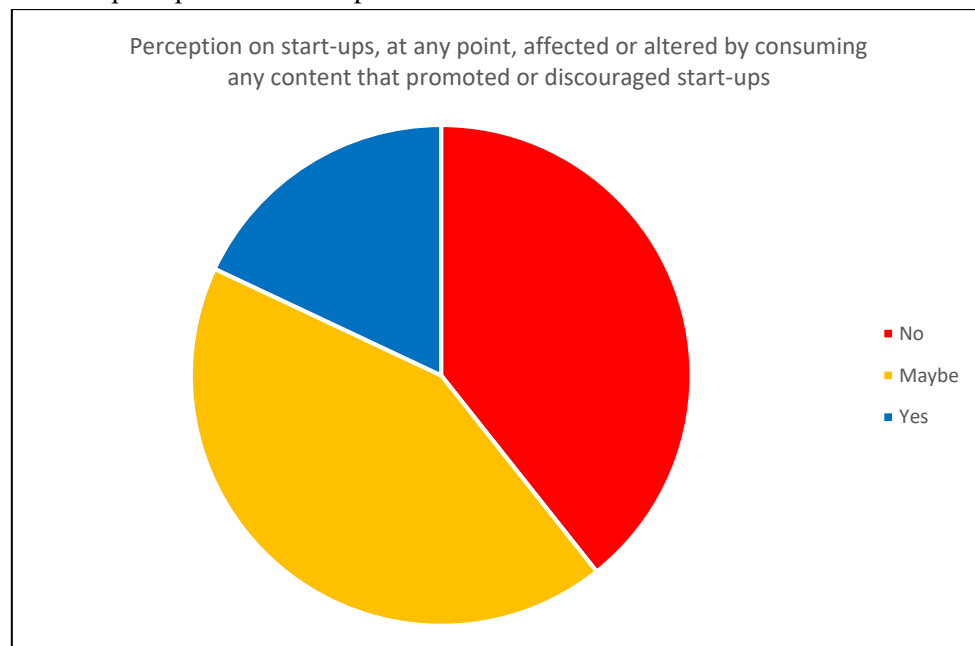
- Financial security and stability of income is a major reason why the respondents would choose a job over a start-up.



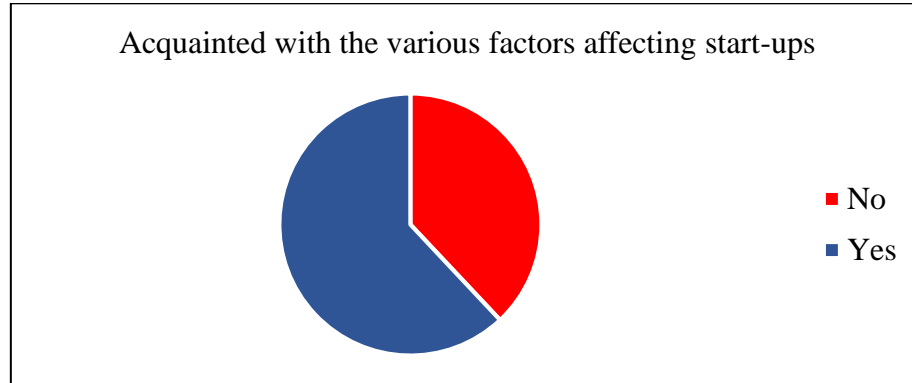
- 'Be your own boss' is a significant reason for the respondent to choose a start-up over a job.



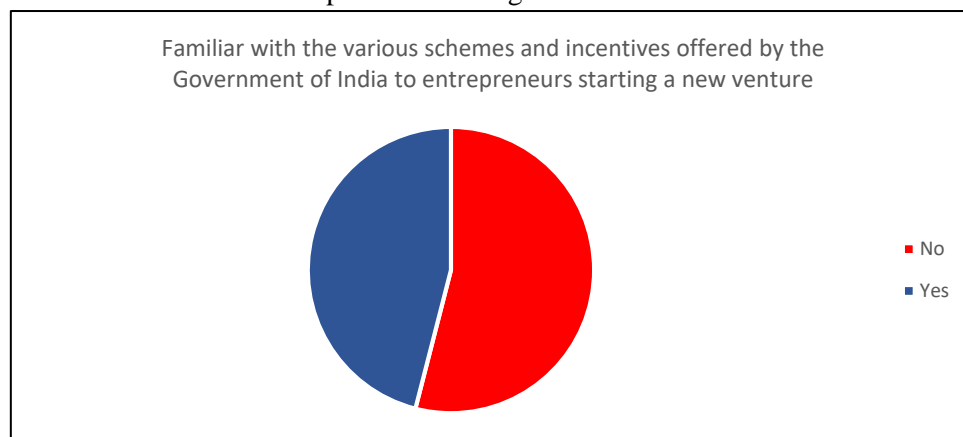
- 42.7% (64) of the respondents think that their perception on start-ups maybe affected or altered by consuming content that promoted or discouraged start-ups.  
39.3% (59) of the respondents think that their perception on start-ups was not affected or altered by consuming content that promoted or discouraged start-ups.  
18% (27) of the respondents think that their perception on start-ups has been affected or altered by consuming content that promoted or discouraged start-ups.  
The main contents responsible for affecting or altering perceptions on start-ups are books, movies and series, and social media. 'Shark Tank India' also plays a major role in affecting or altering Mumbaiikars' perception on start-ups.



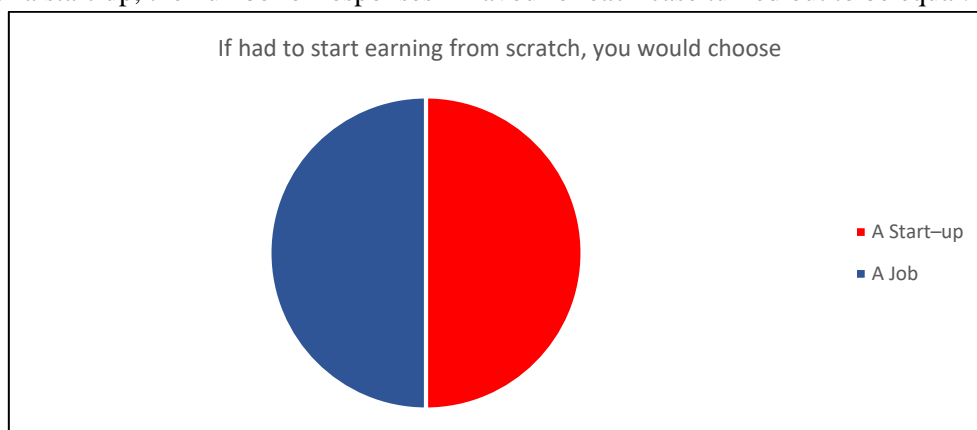
- 62% (93) of the respondents assert that they are aware of the various factors that affect start-ups. Funding, area of operation, competition (existing MNCs), human resources, and industry knowledge are some of the factors, as stated by the respondents, that affect start-ups.



- 54% (81) of the respondents are not acquainted with the various schemes and incentives offered by the Government of India to entrepreneurs starting a new venture.



- As per the survey, in terms of being given an opportunity to start earning from scratch either by a job or a start-up, the number of responses in favour of each case turned out to be equal.



## 5. Limitations to the Study

While this research provides valuable insights into Mumbaikars' perceptions of start-ups, certain limitations must be acknowledged. Firstly, the study primarily relies on a sample size of 150 respondents, which may not fully represent the diverse population of Mumbai. Given the city's vast and varied demographics, a larger sample could provide a more comprehensive understanding of public perception. Additionally, the sampling method used is convenience sampling, which, while practical, may introduce biases and limit the generalizability of the findings to the broader Mumbai population. Another limitation is the age distribution of respondents, as the majority fall within the 18-30 age group. This skews the results towards the perspectives of younger individuals who may be more inclined towards entrepreneurship and innovation. The opinions of older individuals, who might have different financial priorities or risk perceptions, are underrepresented.

Moreover, the study relies on self-reported data collected through surveys, which may be influenced by social desirability bias or respondents' subjective interpretations of questions. Some respondents may provide answers they believe are socially acceptable rather than their true opinions.

Lastly, while secondary data from research papers, journals, and websites supports the study, the dynamic nature of the start-up ecosystem means that evolving trends and policies may not be fully captured. Future research with longitudinal studies, larger sample sizes, and diverse age groups would enhance the robustness and applicability of the findings.

## 6. Analysis of the Study

The study provides valuable insights into the perceptions of Mumbaikars regarding start-up enterprises. It primarily focuses on the factors influencing these perceptions, their implications, and the potential policy implications of such insights.

The research highlights the demographic characteristics of the respondents, emphasizing that the majority are young adults, with a significant portion having educational exposure to start-ups. This demographic skew suggests that the findings may not be generalized to the broader population. However, the study successfully identifies key trends and perceptions within this specific group.

One notable finding is the high awareness level of start-ups among respondents, with most understanding the concept. However, a substantial proportion lacked a clear distinction between start-ups and multinational corporations (MNCs), indicating room for education on this matter.

Furthermore, the research underscores that a significant proportion of respondents have contemplated starting their own start-ups, but barriers such as lack of experience, education, and investment hinder their pursuit. This highlights the potential for educational and support programs to bridge these gaps.

The study also identifies factors influencing career choices, with financial security and stability playing a significant role in favour of traditional jobs. However, the desire for autonomy and being one's own boss drives some respondents towards entrepreneurship.

Media content, especially books, movies, and social media, significantly influences respondents' perceptions of start-ups, emphasizing the media's role in shaping public opinion. Moreover, a considerable portion of respondents is unaware of government incentives for entrepreneurs, indicating the need for increased awareness.

In conclusion, this study offers valuable insights into Mumbaikars' perceptions of start-ups, particularly among the youth. It highlights the importance of education and media in shaping these perceptions and underscores the need for policies that address barriers to entrepreneurship and promote awareness of

government support initiatives. These findings can inform strategies to foster a more supportive environment for start-ups in Mumbai's dynamic ecosystem.

### **7. Suggestions on the Study**

1. **Start-up Events and Meetups:** Organize and participate in start-up events, conferences, and meetups in Mumbai. These events can bring entrepreneurs, investors, and the community together, fostering a sense of belonging and awareness.
2. **Incubators and Accelerators:** Collaborate with local incubators and accelerators to support start-ups. These organizations often have resources and networks to help start-ups grow and gain visibility.
3. **Start-up Competitions:** Host start-up competitions or hackathons to encourage innovation and draw attention to local start-ups. Offering prizes and media coverage can boost participation and awareness.
4. **Online Presence:** Create a strong online presence for start-ups through websites, social media, and blogging. Regularly share success stories, updates, and insights about the start-up scene in Mumbai.
5. **Start-up Tours:** Conduct start-up tours where interested individuals can visit local start-up offices, interact with founders, and get a firsthand experience of the start-up culture.
6. **Local Media Coverage:** Work with local media outlets to feature start-ups and their founders. Stories about local success can inspire others and create a positive image of start-ups.
7. **Networking Events:** Host networking events for entrepreneurs, investors, and professionals to connect and share ideas. These events can help start-ups find mentors, investors, and collaborators.
8. **Corporate Partnerships:** Encourage established companies to partner with start-ups through mentorship programs, investment, or collaborative projects. This can validate start-ups and provide them with resources.

Remember that building awareness and changing perceptions takes time. Consistency and collaboration with various stakeholders in the Mumbai start-up ecosystem are key to success. Additionally, measuring the impact of your efforts through surveys and data analysis can help refine your strategies over time.

### **8. Conclusion**

The perception of start-ups in Mumbai is a complex blend of doubt, optimism, and cautious curiosity. Mumbai, known for its fast-paced lifestyle and entrepreneurial spirit, has experienced a surge in start-up activity in recent years. Some Mumbai residents view start-ups as risky endeavours, while others see them as promising opportunities that can not only transform Mumbai's economy but also enhance the quality of life for its residents.

The scepticism surrounding start-ups in Mumbai is not without reason. Many have witnessed the rise and fall of numerous start-ups, leading to a sense of caution. Concerns about job security and the long-term sustainability of these ventures often weigh heavily on the minds of Mumbaikars. Furthermore, the challenges posed by intense competition, rising operational costs, and regulatory obstacles can make the start-up journey a perilous one.

However, this scepticism is balanced by a significant portion of Mumbaikars who recognize the potential benefits that start-ups can bring. Mumbai's thriving innovation ecosystem, easy access to funding, and a pool of highly skilled individuals have attracted entrepreneurs from all over the country. These start-ups have not only disrupted traditional industries but have also introduced innovative solutions to long-standing problems. Additionally, success stories like Flipkart and Zomato, both originating in Mumbai, serve as sources of inspiration, igniting the aspirations of aspiring entrepreneurs.

The perception of start-ups among Mumbaikars is further shaped by the city's dynamic and adaptable nature. Mumbai has always been a place where dreams are passionately pursued, and risks are embraced in the pursuit of those dreams. This spirit has permeated the start-up culture, where individuals are willing to take calculated risks in the hope of achieving greatness.

In summary, whether start-ups are seen as risky ventures or promising prospects in Mumbai depends on one's viewpoint. While the city's residents may approach these endeavours with varying degrees of caution. They have become an integral part of Mumbai's identity. As the start-up ecosystem continues to grow, it will be fascinating to see how the perceptions of Mumbaikars evolve and influence the future of entrepreneurship in this bustling metropolis.

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## THE INDIAN FAMILY SYSTEM: A STUDY OF CULTURAL PRACTICES AND MODERN ADAPTATIONS

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### Abstract

*The aim of this paper is to present a holistic growth of the structure and functions of the Indian family system: past, present and future towards a Viksit Bharat. Thus, the specificity of the research lies in examining the various changes that have taken place in the Indian families, in their roles and values. Due to this, it will be possible to investigate how the families of India have been coping with the Globalization, Urbanization and other social economic changes that have precipitated in the contemporary society. The findings reveal how much the family means to Indian people, how one's family influences choice of profession and general behaviour in society, and how it strengthens social relations. It discusses how Indian culture has been duality conservative in some aspects like respect such as children's respect to elders, forced marriages, joined families as well as inconsiderate of new trends such as individualism, nuclear families, delayed marriages. On the basis of case studies, interviews and statistical analysis the research offers an understanding of the issues and prospects for families in India in the present scenario. The main aim is to look at a big picture of how the Indian family system rooted in cultural practices play a crucial role in shaping a progressive and developed India. It looks at the role of the family in the social processes during the period of rapid modernization and demonstrates how pre-modern values remain relevant for today's society.*

**Keywords:** Indian family system, Globalization, Urbanization, Social-economic changes, Nuclear families, Modernization

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### A. Introduction

#### 1. Overview of Topic

Viksit Bharat envisions a developed India by 2047, emphasizing inclusive growth, innovation, and strong social foundations.

- The Indian family system, whether joint or nuclear, has historically provided emotional, social, and financial support contributing to a stable society.
- Modern adaptations of family practices reflect a balance between tradition and progress, supporting the nation's development.

For centuries, the Indian family system has been the pillar of Indian society. It is characterized by strong ties of kinship, respect for elders and mutual dependence. Therefore, it is historically a main force in India's society. In this traditional setting, multiple generations often live together under one roof. In modern times, however, with the development of cities, globalization and growing mobility it is undergoing change. Today, nuclear families, individualism and changing gender roles are more common than before; but you can still find the leftover traces of older days in some places. Many new ideas have been sprung up against this background. This study, in particular, investigates how the Indian family system has changed, the conflict between tradition continuation or modernity, and what cultural values are being kept.

#### 1. Objectives

1. To analyse the traditional structure and functions of the Indian family system.
2. To examine the impact of modernization and globalization on Indian family dynamics.

3. To explore the ways in which traditional family values are being adapted to modern lifestyles.

## **B. Literature Review**

It discusses some of the outstanding reasons for the persistence of the traditional joint family system in

India. We are trying to show that the Indian family is a realistic response to the forces of modernity. Traditional family seems to provide a salutary balance in terms of a sense of location, personal identity, self-worth, social position, and obligation precisely because modernity emphasizes social estrangement and cultural diversity. Besides, it is also probable that the old and the new will also be accommodated and adapted to the Indian experience. As long as the history of the joint family system goes, it has played a significant role in India as a stable social institution. The research gives a brief overview of the historical development to current relevance of the Hindu joint family system. Within this traditional form of family, considered HUF or the Hindu Undivided Family, several generations reside together due to a very strong sentiment of kinship in addition to resource and duty sharing. Ancient Indian literature like Manusmriti and Dharmashastras holds importance in terms of its historical significance. Such works, besides supporting joint families, not only incorporated them into the broader cultural and religious conventions of the time but also held the joint family to very high standards but this research helps us to learn about the current relevance and thoughts behind today's generation and their approach towards nuclear family or individualism. Hence, following are some previous literatures and studies on the same with identified gaps in each study.

### **1. Traditional Indian Family System**

The Indian family comprises a unit called the joint family, where several members of the family live together, and the head of the family is normally an elder male who handles decisions, property, and home management. Some of the cultural aspects include; elderly persons' chastisement, conformity to seniority, and gender roles in work, and participation in religious rituals in dances, weddings, and burials. Evaluating arranged marriages, we can conclude that they represent family authority over personal choices. The social and religious concepts include 'dharma' that refers to duty; 'karma' which refers to action; and the 'samskara' which denotes rites of passage that dictate life patterns of the duty-bound individuals to serve for the benefit of the family and society at large.

Key Authors: - Vasudha D. Kulkarni (2000): Examined the influence of caste, religion, and region on family structures, highlighting the cultural diversity within Indian families. - Irawati Karve (1961): In Kinship Organization in India, Karve explored the deep-rooted connection between kinship patterns and family structures, emphasizing the regional differences in family systems across India.

### **2. Trends Towards Nuclear Families**

Later on, due to industrialization and economic changes, people shifted their residences from rural to urban areas as a result, the nuclear family mode became common. New education possibilities for females' and their engagement in the economy have shifted gender roles within families towards more mutual relationships. Technological factor has also contributed to this change where modern means of communication enable the members of a family to stay in touch despite the physical separations, thus the psychological impacts of breaking of joint family system. Key Authors:

- A. M. Shah (1998): In *The Family in India: Critical Essays*, Shah has examined transformations in forms of family over time. Here the author has discussed how joint families decline and nuclear family gains currency.
- Leela Dube (1997): This book brings under its scan the impact of transitions in the economy on relations between genders in the Indian family, particularly through such areas as urbanisation and women's participation in the economic activities.

### **3. Cultural Adaptations in the Modern Indian Family**

Family and conjugal relations are changing, with arranged marriages being more tolerable in towns, inter caste, inter religious and cross national marriages becoming the order of the day. Where once women may have been relegated to homemakers, they are also workers, caregivers for their families and children, shifting role and probably renegotiating sex-based power dynamics and subjugation if not outright oppression. As far as the current generation is concerned, the youths have had to cope with increased interaction with international cultures and modern lifestyles, which have been a major source of conflict in marriages, career choices, and family norms and standards. Key Authors:

- Patricia Uberoi (2006): In *Freedom and Destiny: Gender, Family, and Popular Culture in India*, Uberoi viewed how mass media discourses reflect and (re)shape changing family relationships over time, from new visions of love, marriage, and gender roles.
- Veena Das (1995): It deals with the questions of how changing marital practices, kinship, and other social practices have made ways to fit changing cultural milieus in general, but especially in urban milieus.

### **4. Globalization Impact**

Availability and affordability of global products and exposure to western culture has greatly influenced the Indian families' consumer behaviour, beliefs and practices and thereby introducing a new cultural duality. Middle class interest groups exemplify this identity as they try to achieve modernity while practicing tradition. This is because families in the diaspora, due to the global diaspora, are exposed to market culture, which means that they are confronted with the dilemma of upholding traditional culture and practice western standards. These families' circle of concern comprises of identity, belongingness, and cultural preservation. There is also post-modernism manifested in the shift from the collective relativism to individualism, especially in cities where consumerism has captured city life.

Key Authors:

- Arlie Hochschild (2003): Though it is not Indian specific, it is interesting to note that Hochschild's book *The Commercialization of Intimate Life* speaks to the impacts of global capitalism on family life--increasing reliance on market-based services for caregiving and emotional labour.
- Nita Kumar (1999): Discussing middle-class Indian families and how the Western education system, along with the media, can shape modern Indian identities, she relates this experience to family interaction and their value systems.

### **Identified Gaps in Literature:**

1. Rural-Urban Family Dynamics: A lot of work has been done on the nuclearisation of urban families but very little research has been done on the continuation of the joint family system in villages and how it is responding to the threats of modernisation.

2. **LGBTQ+ Families:** Unfortunately, it is hardly possible to find material about the Indian family system which specifically discusses the members of the LGBTQ+ community and their families.  
Legal reforms (such as abolishment of laws against homosexuality) raise but the nature of Indian family in these circumstances remains marginally researched.
3. **Impact of Technological Advancements:** Research on the impact of technology (social media, dating applications, communication technology) on families, particularly in reference to intergeneration relationships and practices of marriage remains scarce.
4. **Elder Care in Modern Families:** There is little regard towards how the nuclear families or the modernized joint families manage higher elderly care since the standard traditional roles are missing.
5. **Middle-Class Aspirations and Family Life:** Much of the existing literature concerns how the middle class is a group which buys things; what is missing is analysis of how this emergent class and increasing middle class expectations are remaking family and family values in the new smaller city and town settings.

This review gives a preliminary background to the traditional and changed family structures in the Indian context and outlines areas for future research.

### **C. Research Methodology**

This research used both quantitative and qualitative research design strategies in this study in order to investigate Indian family system. First-hand data were obtained through participant interview of persons from heterogeneity of family backgrounds, which include the northern, eastern, southern and western regions of India. These interviews focused on matters of culture, family and household, and attitudes towards modernity. More importantly, quantitative data were obtained through questionnaires for the purposes of establishing more patterns and trends. It tried to present the differentiation between conventional values and norms of a family and the transformed ones considering the aspects like urbanization, economical shifts, and social progress. This prime focus gave a overall picture of the Indian family structure and dynamics of the issue with respect to culture and some recently adopted changes.

#### **1. Research Design**

- The present study is of a descriptive type research. The researcher has collected information from primary data and secondary data. The primary data was collected from age group of majorly 18 years to 25 years and some from the age group of 26 years to 55 and even a few from above the age of 56. The data is collected by using structured questionnaire and by conducting personal interview with the respondents. The secondary data was collected mainly from the articles published in newspapers, research papers and journals etc. which are used in the data analysis and interpretations. The collected data was tabulated and analysed by using adequate statistical tools and test.

#### **2. Sampling Method**

- It was pre-decided to involve youth, middle aged and senior citizens (between age group of 18 to 80 years). Simple random sampling, convenience sampling and purposive sampling techniques was used for data collection.

- Respondents were contacted personally on the basis of the convenience of the researcher and respondents and asked to fill survey questionnaires on a random basis. Very politely and carefully the researcher contacted respondents and requested them to fill required questionnaires.
- This process continued until below listed number of respondents extended their positive consent and willingness to participate in the study. Researcher also carried out personal conversation with respondents to understand their responses clearly and observed the behaviour of respondents while responding to questionnaires.

**3. Universe of the study** comprises of

- Mainly youngsters from today's generation. For this survey, the target population was working youth, which is 65 % of total population having an approach towards modern and nuclear families or individualism.
- Middle aged working professionals or homemakers having a diplomatic mind-set towards joint families and nuclear families.

**Sample Size:** It is not possible to reach the entire population for responses. Hence researchers took responses by the means of google forms which include 60-70 respondents of all groups and gender.

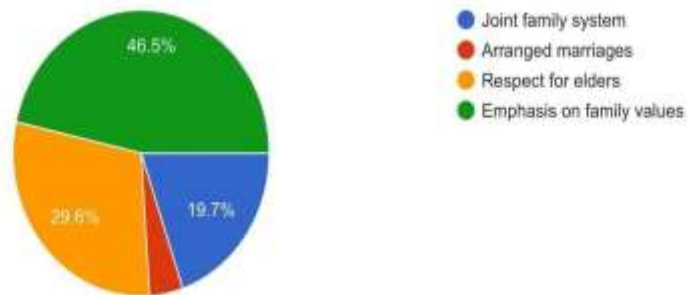
No.	Type of Respondents	Males	Females
1	Youngsters	19	34
2	Middle aged	18	7
3	Senior Citizens	4	N/A

**D. Results / Data Analysis & Interpretation Primary Data**

- Primary Data was collected through the Survey Method by administering separate structured interview questionnaires to the concerned set of respondents. In this method, a google form was circulated via social media and Structured questionnaire was made for all types of individuals.
- The questions were framed on the basis of literature available related to the topic and expert advice was also considered before framing questions in the questionnaires, the initial draft of questionnaire was prepared and tested and once satisfied the researchers circulated the final draft.
- Proper care was taken to make the questionnaires simple, easy and understandable to respondents, so that it will become easy and simple for respondent to answer the questionnaires. Reasonable precaution was taken to frame unbiased questions in the questionnaires. The series of questions were also made tactfully, so that the respondents answer the questions in a proper flow.

**1. What do you consider to be the most important aspects of traditional Indian family structure?**

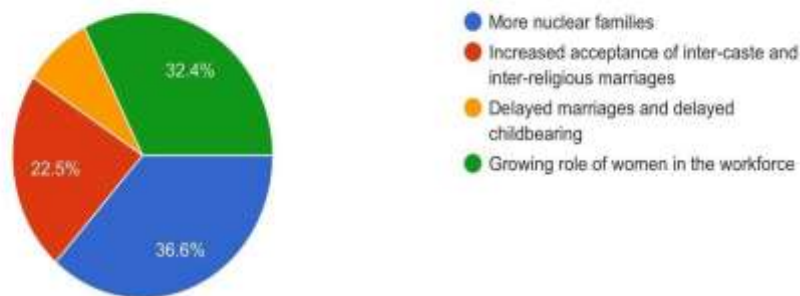
71 responses



As seen in the above figure, the most important aspect of the traditional Indian family structure is Emphasis on family values as thought and selected by most of the respondents. Thus showing the mindset of today's world be it youngsters or middle-aged people.

**2. How has the Indian family system evolved in recent decades?**

71 responses



As the data shows us, most of the respondents in today's time are well versed and have evolved into nuclear family since their birth. This results and puts a strong hold on the researchers point of traditional joint family being turned into nuclear families. With more nuclear families the respondents also think of growing role of women in the workforce today compared to olden times.

**4. How has the rise of urbanization affected the Indian family system?**

71 responses

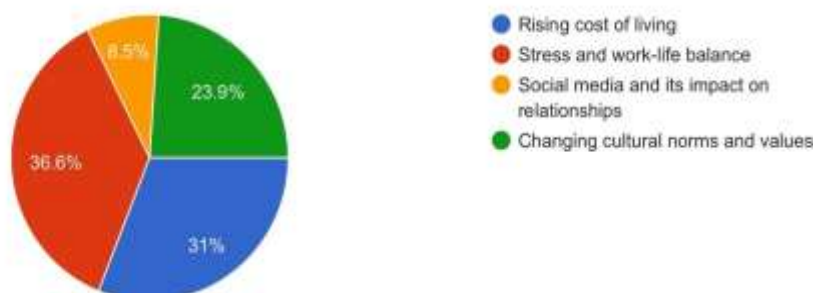




As the result shows because of the increase in nuclear families, it has weakened the family ties and created challenges for elderly care but looking at the positive side, majorly it has increased opportunities for women in various sectors and fields.

5. What are the challenges faced by Indian families in the modern world?

71 responses



Urbanisation has resulted rising cost of living, which in-turn has created stress and imbalanced work life to meet the daily requirements by a common person. Also changing of cultural norms and values has impacted the relationships which is highlighted by social media and in the above pie chart as well

6. Do you believe that traditional Indian family values are still relevant today?

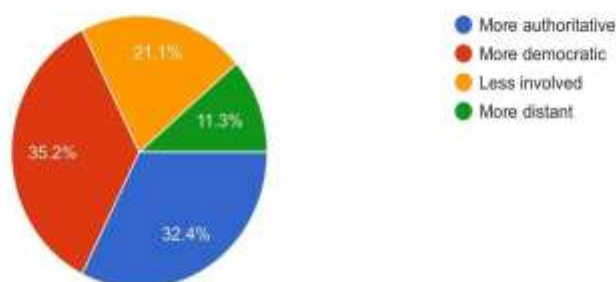
71 responses



As seen from olden times Indian family always had a strong hold on providing a sense of stability and belonging to their successors be it business or family. We have also seen cultural backgrounds of individuals being acting as an important role be it invoking a sense of positive values and perspective towards life from concepts from Mahabharata to various other religious literatures. Hence traditional Indian family values are portrayed in such a way though stories that it is still relevant in today's time and always a sense of curiosity for younger generations.

7. How do you perceive the relationship between parents and children in Indian families today?

71 responses

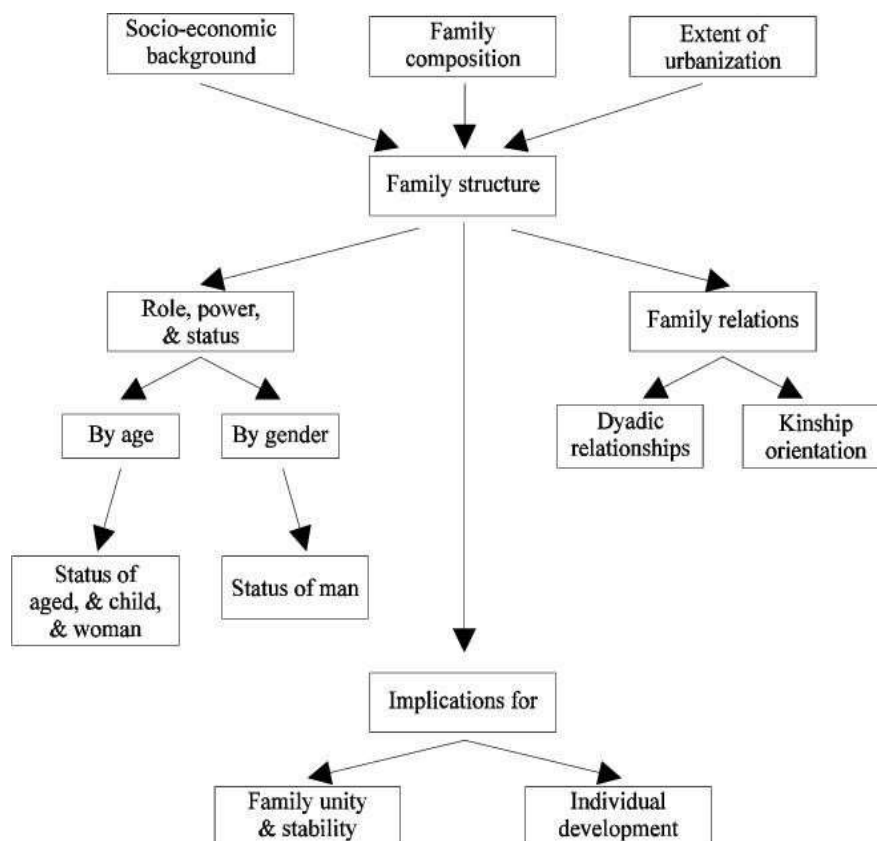




Now a days opinions of youngsters are considered in the decision making of the family as well as they are given a free hand to choose their career paths which benefits the youngsters to become responsible at a very young age and give a modern time point of view to the family. Where most of the respondents think that the relationship between parents and children must be democratic, there are people who think being authoritative is a great way of handling situations in modern times.

### Secondary Data

- The below data i.e. charts are secondary data that were collected from previously available data related to the study topic, which helps the researcher to investigate the subject of study in detail.
- This secondary data has been collected from various published sources like books, magazines, articles, journals, research papers, reports, government publications, etc. □ Secondary data is also collected from the internet (websites related to the topic of the study).





## E. Limitations / Problems

### 1. Breakdown of the Joint Family System:

Through shifting from joint to nuclear family homes, differentiation of traditional familiar support systems is being enhanced. This has led to the downturn of intergenerational contact and reduced exchange of care faculties involving child care, elder care and care of the household.

### 2. Generational Conflicts:

Another impact relates to the fact that assimilation to Globalization and Modernization, most youths develop contradicting views with their elderly in decision making matters such as marriage, work and life in general. The conflict of generational or traditional culture with current day reality is another issue that precipitates conflict within families.

### 3. Rise in Divorce Rates and Marital Instability:

People have very high demands for their marriages unlike before; individualism is now the order of the day, and many people are rejecting the all time norms of marriage, yet the rate of divorces continues soaring especially in the urban setting. This social discrimination for women in the Kenyan context adds on the challenge of how women after divorce reintegrate themselves to family system.

### 4. Elder Neglect and Lack of Care:

The shift from the joint family system has cut senior citizens short when it comes to their treatment because the nuclear family is not well equipped to deal with the elderly as they

ought to. People are isolated and the elderly are often left alone since there is no structure put in place to provide for their care.

#### **5. Lack of Inclusion of LGBTQ+ Family Structures:**

LGBTQ+ people have no visibility in the traditional Indian family and were made to feel out of place. New gay civil liberties like the legalization of same sex relationships and marriage have not entirely found their way into family understanding and appreciation.

#### **F. Conclusion**

Just as families evolve while holding onto core values, Viksit Bharat seeks a developed India that respects its cultural roots. Strengthening family systems with modern adaptations directly supports the nation's social and economic development goals.

The Indian family system has been a mainstay of Indian society for centuries, but the changes over the decades have indeed been profound. To be sure, traditional values and practices continue to influence family life, but there are strands of globalization, urbanization, and socioeconomic change that have relentlessly striven for a complex meshing of tradition with modernity.

Even though respect for elders, for example, is an age-old virtue; the concept of an arranged marriage and joint family still carries significance, people from Indian descent give importance to the concept of individualism, nuclear families, and delayed marriages. In this context, it is good to note how different trends shape Indian families' experiences in various areas.

Given the pace of change at which India is changing, it becomes essential to understand the intricacies of the Indian family system. The interplay between tradition and modernity in this research has given insight into how Indian families are navigating the challenges as well as the opportunities of the 21st century.

#### **G. Connection with Viksit Bharat**

Exploring how traditional Indian family values—like respect for elders, collectivism, and interdependence—are evolving in modern contexts.

##### **1. Living Arrangements:**

- Traditional: Joint families living under one roof.
- Modern: Nuclear families, but with strong emotional and financial ties to extended family—often enabled by technology (video calls, family WhatsApp groups).

##### **2. Marriage and Relationships:**

- Traditional: Arranged marriages with parental involvement.
- Modern: Love marriages, interfaith relationships, and late marriages—while still considering family opinions.

##### **3. Gender Roles:**

- Traditional: Defined roles—men as breadwinners, women as homemakers.
- Modern: Dual-income households, with more shared responsibilities and women pursuing careers.

##### **4. Decision-Making:**

- Traditional: Elders' decisions were final.

- Modern: More democratic, with younger family members having a say—though elders' advice is still respected.

**5. Education and Career Choices:**

- Traditional: Parents steering children's education and careers.
- Modern: A growing acceptance of unconventional careers, with families encouraging independence while offering support.

**6. Inheritance and Property:**

- Traditional: Sons inheriting family property.
- Modern: Increasing gender equality, with daughters receiving equal inheritance rights.

**H. Future Suggestions****i. Reviving Family Support Structures:**

Finally, promote a new type of family stimuli that will combine advantages of both joint and nuclear families. This can be achieved by continuing to be together as a family but without living together, through innovations like phone calls, and family reunion. **ii. Promoting Open Communication for Generational Harmony:**

Encourage various generation to understand each other and engage in dialogue by being open to the others. Family therapy and counselling can solve issues, such as disagreements in marriage, job or career, and the disparity of attitude towards life.

**iii. Strengthening Marital Support Systems:**

Educate the couples before they wed so that they are well equipped to handle the change in expectations of marriage. Discuss issues with your partners and start support groups in the community for people who are having marital problems. **iv. Supporting LGBTQ+ Families:**

Promoting change in laws, legislation and informing the public about acceptance of the openly gay, lesbians, bisexuals, transsexuals and other forms of the LGBTQ+ families. Strategic family education may go a long way in reducing the stigmatization of families that may not fit into the conventional norms of heterosexuality.

**v. Balancing Tradition and Modernity:**

Encourage health, hope and humane responsibilities while openly adopting key principles of the New World Order yet maintain the positive aspects of culture, faith and family values. This involves reconciling cultural differences for both the young and old as it is portrayed in the family institution. With the help of the offered solutions to these issues, Indian families can try to follow the proposed strategies and integrate more changes of the modern world while staying loyal to their cultural values to provide everybody in the family with comfort, support, and happiness.

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## THE ROLE OF ARTIFICIAL INTELLIGENCE IN THE INDIAN TAXATION SYSTEM

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### **Abstract**

*The integration of Artificial Intelligence (AI) into the Indian taxation system is revolutionizing tax administration, compliance, and fraud detection. AI-powered tools improve efficiency, reduce errors, and enhance the taxpayer experience. This research paper explores the various applications of AI in taxation, its benefits, challenges, and future prospects in India. The study also discusses government initiatives, case studies, and ethical concerns associated with AI-driven taxation systems.*

**Keywords:** *Artificial Intelligence, Taxation, India, Compliance, Fraud Detection, Automation*

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### **3. Introduction**

The Indian taxation system is complex, comprising direct and indirect taxes administered by multiple agencies. Rapid digital transformation has necessitated the adoption of AI-driven solutions to streamline processes, minimize tax evasion, and improve revenue collection. The government has leveraged AI to enhance tax compliance, reduce human intervention, and promote transparency. This paper examines the role of AI in Indian taxation, its advantages, challenges, and potential impact on taxpayers and administrators.

### **4. Review of Literature**

Several studies have examined the role of AI in taxation:

- **Sharma (2022)** explored AI's impact on fraud detection, highlighting how machine learning models predict fraudulent tax transactions.
- **Kumar & Patel (2021)** discussed the role of machine learning in improving tax compliance and policy formulation.
- **World Bank (2023)** analyzed AI-driven taxation models globally, comparing India's AI integration with other countries.
- **Press Information Bureau (2023)** provided insights into government initiatives, such as Project Insight and faceless assessments.
- **CBDT Annual Report (2023)** documented AI applications in direct tax assessment and risk analytics.

While these studies establish AI's role in tax compliance and fraud detection, gaps remain in exploring its long-term implications and effectiveness in the Indian taxation system.

### **5. Research Gap**

Despite extensive research on AI in taxation, certain gaps exist:

- Limited empirical studies on AI's effectiveness in tax compliance and fraud detection in India.
- A lack of comprehensive analysis of taxpayer experiences with AI-powered chatbots and automated systems.
- Minimal research on ethical concerns, including algorithmic bias and data security, in AI-driven taxation.
- Limited studies on AI integration challenges in legacy tax systems.

This study aims to bridge these gaps by providing an in-depth analysis of AI's role, benefits, challenges, and future prospects in Indian taxation.

## 6. Objectives

The primary objectives of this research are:

1. To analyze the role of AI in direct and indirect taxation in India.
2. To evaluate the effectiveness of AI-driven tax compliance and fraud detection systems.
3. To identify key government initiatives promoting AI integration in taxation.
4. To examine challenges associated with AI adoption in taxation.
5. To suggest measures for improving AI-based tax administration and compliance.

## 7. Research Methodology

### Research Design

This study follows a qualitative and quantitative research approach, using secondary data sources such as government reports, journal articles, and policy documents.

### Data Collection

- **Secondary Data:**
  - Reports from the **Central Board of Direct Taxes (CBDT)**, **Goods and Services Tax Network (GSTN)**, and the **Ministry of Finance**.
  - Published research papers, journal articles, and case studies on AI in taxation.
  - Official policy documents and press releases on AI-driven tax administration.

### Data Analysis Techniques

- **Descriptive Analysis:** Understanding AI applications in taxation.
- **Comparative Analysis:** Comparing AI-based taxation models globally.
- **Content Analysis:** Examining government reports and policy documents on AI taxation.

## 8. Data Analysis & Interpretation

### AI in Direct Taxation

- AI is used for tax assessment, compliance monitoring, and fraud detection.
- The Central Board of Direct Taxes (CBDT) employs AI for predictive analytics, automated scrutiny, and risk profiling.

### AI in Indirect Taxation

- AI helps in detecting fake invoices and fraudulent GST transactions.
- The Goods and Services Tax Network (GSTN) uses AI-based systems to analyze GST return data and identify anomalies.

### Key Government Initiatives

- **Project Insight:** AI-powered platform tracking high-value transactions.
- **Faceless Assessment Scheme:** AI-driven tax scrutiny reducing human bias.
- **GSTN Analytics:** AI tools monitoring compliance and detecting fraud.

### AI-Powered Applications

- **Fraud Detection:** AI algorithms analyze tax data to flag suspicious transactions.
- **Automated Tax Filing:** Robotic Process Automation (RPA) reduces errors in tax return filings.
- **Chatbots for Assistance:** AI chatbots like "Judy" and "TINA" assist taxpayers with queries.
- **AI-Enabled Audits:** Automated tax audits improve accuracy and efficiency.

## 9. Findings, Suggestions & Conclusion

### Findings

- AI enhances efficiency in tax compliance, fraud detection, and risk assessment.
- Government initiatives like Project Insight and faceless assessments streamline tax administration.
- AI chatbots improve taxpayer experiences by providing instant assistance.
- Challenges such as data security risks, algorithmic bias, and integration issues persist.

### Suggestions

- **Strengthening Data Security:** Implementing advanced encryption techniques to safeguard taxpayer information.
- **Mitigating Algorithmic Bias:** Regular audits and improvements in AI algorithms to ensure fairness in tax assessments.
- **Upgrading Legacy Systems:** Modernizing tax infrastructure for seamless AI integration.
- **Capacity Building:** Training tax professionals in AI tools for efficient implementation.
- **Regulatory Framework:** Establishing clear policies governing AI-driven tax enforcement and accountability.

### Conclusion

AI is transforming the Indian taxation system by improving efficiency, accuracy, and fraud detection. While challenges exist, continued government initiatives and advancements in AI technology will enhance tax administration. Establishing regulatory frameworks, addressing ethical concerns, and investing in skill development will be crucial in ensuring responsible AI deployment. AI integration will ultimately lead to a more transparent, efficient, and taxpayer-friendly Indian taxation system.

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## INDIAN RAILWAY: TOOL FOR ECONOMIC PROSPERITY

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### Abstract

*This paper puts forth the fact that India's contributions to global society and economy have been and will be on numerous levels, far-reaching, and have the potential to shape the world's future. By examining India's various contributions, this research aims to promote a deeper understanding of India's role in shaping global outcomes when it comes to societal and economic contribution of Indian railways and its operating systems.*

**(Key words:** Infrastructure Development, Smart Stations, Freight Corridors, Multi-Modal Transport, Private Investment, Passenger Services, Dynamic Pricing, Railway Startups, Economic Growth, Sustainable Transportation etc.)

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### Introduction:

Despite its significant contribution to India's economic growth and development, Indian Railways has faced numerous challenges, including aging infrastructure, inadequate capacity, and inefficient operations. However, in recent years, the Indian government has launched several initiatives to modernize and transform the railway network.

By examining the development in Indian Railways, we aim to provide insights into the transformation of this critical infrastructure sector and its potential impact on India's economic growth and development.

### Review of Literature:

Indian Railways, one of the largest railway networks in the world, is a cornerstone of India's economic structure. With more than 150 years of history, it has evolved from a colonial transportation tool to a critical infrastructure that supports the nation's economic development. Beyond merely serving as a means of transportation, Indian Railways has been pivotal in shaping India's socio-economic landscape. This literature review highlights the multifaceted contributions of Indian Railways in fostering economic prosperity.

### 1. Historical Role and Evolution of Indian Railways

The historical significance of Indian Railways cannot be overstated. Sengupta (2005) outlines that the railways, introduced by the British in 1853, played a central role in colonial India by enabling the efficient transportation of goods and resources, facilitating trade across vast distances. Post-independence, Indian Railways continued to grow as a means of national integration, playing a significant role in both industrialization and agriculture, and fostering economic growth.

- **Railways as a Catalyst for Industrialization:** Following independence, Indian Railways became essential for industrial growth, especially in connecting key resource-rich regions to industrial hubs. Chandran & Saha (2016) emphasize that the railway network facilitated the efficient movement of raw materials like coal, iron ore, and steel, fueling the country's industrialization.

### 2. Economic Contribution and Impact

Indian Railways makes a substantial contribution to India's GDP, not just through its operations but also by supporting various sectors of the economy. As Banerjee & Ghosh (2017) note, the railway system is

a vital contributor to the national economy, connecting industries and facilitating the smooth flow of goods and people across the country.

- **Freight Services:** Indian Railways is responsible for carrying more than 60% of the nation's freight, contributing heavily to industrial output. The transport of bulk commodities such as coal, cement, and chemicals is vital for industries like energy, construction, and manufacturing. Sharma (2018) mentions that the railway freight system is a primary revenue generator, enabling economic growth by lowering the cost of transportation for various industries.
- **Passenger Services:** On the passenger front, Indian Railways connects millions of people daily, making it an essential enabler of labor mobility. According to Nayak (2019), efficient rail services promote regional economic integration by providing workers from rural areas with access to urban job markets. This improved access to employment opportunities fosters both regional and national economic growth.

### **3. Job Creation and Employment**

Indian Railways is one of the largest employers in the country, employing over 1.3 million people across various sectors. Gupta & Saini (2020) argue that the railway sector significantly impacts the labor market, especially in rural areas, by providing stable, long-term employment. This employment base also stimulates local economies, as many railway employees are stationed in remote regions where job opportunities are otherwise limited.

- **Skill Development and Training:** The Indian Railways also serves as a skill development hub, offering various training programs to employees. These initiatives contribute to workforce development and help improve the overall quality of human capital in the country.

### **4. Infrastructure Development and Regional Growth**

Infrastructure development is a key aspect of economic prosperity, and Indian Railways has played a crucial role in the construction of transport infrastructure across India. Singh (2016) discusses how the development of new railway lines, bridges, and stations stimulates regional growth by improving connectivity between urban and rural areas. This is especially critical for fostering economic development in underdeveloped and remote regions.

- **Dedicated Freight Corridors:** One of the key initiatives aimed at furthering economic growth is the creation of Dedicated Freight Corridors (DFCs). These corridors aim to improve the efficiency of freight transportation by reducing congestion, cutting transit times, and lowering costs for industries. Singh (2019) highlights the DFCs as a game-changer for the economy, especially for industries like coal, steel, and consumer goods that rely heavily on efficient and timely transportation.

### **5. Technological Advancements and Modernization**

In recent years, Indian Railways has embraced modernization and technological advancements to improve its operational efficiency and service quality. Kapoor (2020) highlights that Indian Railways has invested in high-speed trains, electrification of tracks, and digitalization of services. For example, the introduction of online booking systems, real-time tracking, and automated ticketing services has significantly improved customer experience and operational efficiency.

- **Public-Private Partnerships (PPP):** To address the challenges of funding and modernization, Indian Railways has turned to Public-Private Partnerships (PPP). Chakraborty & Das (2019) argue that such partnerships, especially in the development of stations and some train services,

are essential for injecting private capital, improving infrastructure, and enhancing the overall service quality of Indian Railways.

## 6. Environmental Sustainability and Green Initiatives

Sustainability is becoming an increasingly important aspect of infrastructure development. Indian Railways has made substantial efforts to reduce its carbon footprint. Mohan (2020) discusses how Indian Railways is transitioning to renewable energy sources, including solar and wind energy, to power its stations, trains, and operations. The push towards the electrification of railway tracks, coupled with the use of solar power, aligns with India's broader environmental goals.

- **Electrification and Renewable Energy:** A significant portion of Indian Railways' operations is being electrified, with the aim of reducing the dependence on fossil fuels. As Reddy (2021) notes, Indian Railways is planning to achieve carbon neutrality by 2030 through a combination of electrification, renewable energy, and energy-efficient technologies. These efforts are expected to not only reduce operational costs but also contribute to environmental sustainability.

## 7. Challenges and the Future Outlook

Despite the significant strides made by Indian Railways, several challenges remain. Reddy (2021) identifies challenges such as outdated infrastructure, overcrowding in major urban areas, and inefficiency in some of its operations. To overcome these challenges, Indian Railways has set ambitious goals, including the implementation of high-speed trains, the development of new dedicated freight corridors, and modernization of its services.

- **Investment in Future Growth:** Future growth will rely on continued investment in infrastructure, technology, and sustainability. The National Rail Plan 2030 outlines ambitious goals for the railway network, including enhancing capacity, improving safety standards, and increasing the speed and frequency of services. Kapoor (2020) stresses the need for continued public-private partnerships to ensure the financial and operational success of these future developments.

### Objectives of the Study:

- 1) To understand the economic growth of Indian Railways.
- 2) To focus on Key point areas for economic driver of Indian Railways.
- 3) To suggest measures for improving economic prosperity.

### Research Methodology:

The study is descriptive in nature. Research has used a case study approach to attain the objectives of the study. Under the study Indian Railway has been studied in depth, their performance, growth, problems and initiative to contribute the growth of economy. Researcher has gone through the previous year's data of Indian Railway to understand the growth and prospects and contribution to the economy.

### Analysis and Findings:

#### (A) Indian Railways: Economic Influence During British Colonialism

Earlier this month, Indian Railways marked its 160th anniversary. The first passenger train, which began its journey on April 16, 1853, from Mumbai to Thane, ushered in a new chapter in India's infrastructure development. In this context, Latika Chaudhary and Dan Bogart delve into the economic role of railways during British colonial rule. Their analysis highlights the importance of railways in India's economic growth, the integration of markets, and trade facilitation, while also questioning if the railways' full potential for economic development was realized under colonial governance.

### *1. Railways as a Pillar of British India's Economy*

Between 1850 and 1947, railways were among the most significant infrastructure projects undertaken by the British in India. Railways became the central mode of transporting goods and people, becoming an essential part of the colonial economic system. One of the railways' most crucial roles was connecting distant regions and facilitating the transportation of essential commodities such as grain, coal, and cotton, thus boosting trade and economic activity. This market integration proved critical for the British, as it allowed for the efficient extraction and transportation of raw materials to Britain.

Additionally, the railways became a means for the colonial government to assert control over both finances and the Princely States. By establishing a monopoly over transportation, the British reinforced their colonial grip, shaping economic policies to their benefit. Over time, the Government of India assumed a greater role in the railways, culminating in full nationalization between 1924 and 1947.

### *2. Nationalization and Its Effects on Railway Performance*

Railway performance during the colonial era can be divided into two key periods: pre-1920 and post-1920. Between 1850 and 1919, the railways saw significant growth in output, productivity, and profitability, spurred by private investments and partial nationalization between 1880 and 1908. Despite the dividend guarantees offered to private railway companies, which were intended to attract investment, these guarantees weakened the incentives to cut costs. While this approach led to rapid development, it also meant that operational efficiency was sometimes overlooked in favor of expansion. By the post-1920 period, the railways had become fully nationalized, and growth and performance plateaued.

### *3. Market Integration and Price Convergence*

The impact of railways on market integration was another important factor in their economic influence. As railways expanded, prices for essential goods across India began to converge. Studies by Hurd (1975) and McAlpin (1974) show that in regions served by railways, prices were closer to the mean, and trade between districts became more consistent. However, the effect of railways on price convergence was not uniform across all goods. Research by Andrabi and Kuehlwein (2010) suggests that railways were responsible for only around 20% of the decrease in price dispersion from the 1860s to the 1900s.

A study by Donaldson (2012) further supported the idea that railways reduced trade costs significantly, especially for commodities such as salt. This reduction in trade costs enhanced market efficiency, facilitating the movement of goods and lowering transportation expenses.

### *4. Social Savings and Economic Benefits*

A key argument for the economic importance of railways in India is the concept of social savings. Introduced by Hurd (1975), social savings measure the economic benefit of a technological breakthrough by calculating the difference between the actual costs of transportation and what they would have been without the innovation. Hurd estimated that without railways, freight rates in India would have been 80-90% higher, and the social savings from the introduction of railways amounted to Rs. 1.2 billion (roughly 9% of national income) in 1900. This had a profound impact on India's economic development in the late 19th and early 20th centuries.

Railways in India were far superior to previous transport options like bullock carts, which were slow and inefficient. Moreover, India lacked a comprehensive inland waterway network, making railways the only effective means of long-distance transportation. High total-factor productivity (TFP) growth

within the railway system also contributed to economic growth, accounting for over 13% of national income per capita growth from 1874 to 1912.

#### 5. Colonial Constraints on Economic Potential

Despite the significant contributions of railways, there are arguments suggesting that their full economic potential was not realized due to colonial policies. Critics argue that the colonial administration prioritized profit over the welfare of India's economy. This focus on profit often resulted in suboptimal freight rates, hindering potential growth. Moreover, passenger services were not given adequate attention. Fares were high in comparison to income levels in India, limiting access to rail transport for many.

The Robertson Report (1903) highlighted that fares in India should have been a fraction of British fares, yet they were typically between one-third and two-thirds of the British fare. Consequently, many lower-income Indians could not afford to travel, limiting the broader social and economic benefits of the railway network.

#### 6. Why Railways Could Have Achieved More

While railways helped integrate markets and facilitated trade, their potential to stimulate broader economic growth was hampered by colonial policies. If freight rates had been set more efficiently and if passenger services had been expanded, railways could have contributed more significantly to India's economic development. Moreover, the British government's emphasis on profit maximization and the lack of attention to improving the quality of services meant that the railways did not fully support India's industrial or economic growth.

Indian Railways on GDP in a tabular format:

Impact Category	Numerical Data
Contribution to GDP	1.5% of India's GDP (~₹4.1 trillion annually)
Revenue Generation (FY 2023)	₹2.4 trillion (Freight: ₹1.4 trillion, Passenger: ₹550 billion)
Employment	1.3 million employees
Freight Transportation	1.4 billion tons of freight in FY 2023
Infrastructure Investment	₹50,000 crore annually; DFC project ₹81,000 crore
Multiplier Effect	₹1 spent on railways contributes ₹2.4 to GDP growth
Electrification Progress	70% of tracks electrified by 2023, aiming for 100% by 2030
Environmental Impact	Reduction of 2.4 million tons of CO2 annually through electrification

This table summarizes the key quantitative aspects of Indian Railways' contribution to the economy and its impact on GDP.

### (B) Indian Railways: A Catalyst for Economic Growth

Indian Railways, one of the largest railway networks globally, plays a pivotal role in shaping India's economic landscape. Beyond serving as a transportation system, it fuels industrial growth, supports trade, creates jobs, and promotes regional development. Here's an overview of how Indian Railways contributes to the country's progress:

#### 1. Job Creation

- Indian Railways stands as one of the world's largest employers, offering employment to over 1.2 million people across various sectors.
- Additionally, it generates indirect employment in industries such as construction, logistics, tourism, and various ancillary services.

## 2. Trade and Commerce Enhancement

- Railways efficiently transport critical commodities like coal, iron ore, and agricultural products, reducing logistics costs and streamlining supply chains.
- Dedicated Freight Corridors (DFCs) boost connectivity between industrial hubs and ports, facilitating smoother and quicker trade processes.

## 3. Infrastructure Development

- Key initiatives like high-speed rail corridors and station modernization attract substantial investment and support urban growth.
- The push for electrification across railway lines not only increases operational efficiency but also fosters sustainable infrastructure by minimizing reliance on fossil fuels.

## 4. Cost-Effective and Efficient Transportation

- Railways offer an affordable transportation option for both passengers and businesses, significantly reducing logistical expenses.
- Subsidized freight services benefit farmers and small-scale industries by lowering transportation costs, making their products more competitive in the market.

## 5. Tourism Growth

- Luxury trains like *Palace on Wheels* and *Bharat Gaurav* promote heritage tourism, contributing significantly to the economy by showcasing India's rich cultural heritage.
- Special pilgrimage trains boost religious tourism, supporting local economies and generating tourism-related revenue.

## 6. Urban and Regional Connectivity

- Metro and suburban rail networks in major cities like Mumbai, Delhi, and Kolkata help ease traffic congestion, improve urban mobility, and increase productivity.
- Expanding railway connectivity to rural and remote areas fosters regional development by attracting investment and improving access to markets and services.

## 7. Private Sector Involvement and Foreign Investment

- Public-Private Partnerships (PPPs) in railway projects encourage private sector participation and attract Foreign Direct Investment (FDI) into the sector.
- The privatization of services such as station redevelopment and freight operations results in enhanced efficiency, better service quality, and increased revenue.

## 8. Sustainability and Eco-Friendly Initiatives

- Electrification and the introduction of solar-powered trains reduce the reliance on fossil fuels, lowering operational costs and promoting sustainability.
- Indian Railways is committed to achieving net-zero carbon emissions by 2030, contributing to a greener future for the country's transportation sector.

## Suggestions to Improve Economic Prosperity:

- Infrastructure Upgrade – Expand high-speed rail, electrification, and smart stations for efficiency.
- Freight Enhancement – Develop Dedicated Freight Corridors, integrate multi-modal transport, and encourage private investment.
- Passenger Experience – Introduce private operators, luxury tourism trains, and dynamic pricing for better services.



- Employment & Skill Development – Establish training institutes and support railway-related startups & MSMEs.
- Revenue Growth – Monetize railway land, increase ad revenue, and use AI for cost optimization.
- Global Connectivity – Strengthen international rail links and improve cargo export infrastructure.

These initiatives will drive economic prosperity and position Indian Railways as a global leader.

**Conclusion:**

This study demonstrates the vital economic and social contributions of railways. By investing in railways and prioritizing their development, governments and private sector entities can promote sustainable economic growth, social development, and environmental sustainability that we have been looking for; for us to be known as a fast developing nation.

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**A STUDY ON GENDER BASED DIFFERENCES IN INDIAN IT WORKPLACE CULTURE****Asst. Prof. Ms. Lalita yadav**

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**Abstract**

*The Indian IT sector, while a global leader in innovation and talent, continues to face significant gender-based cultural disparities. Women constitute only 34% of the workforce and hold a mere 7% of executive-level positions, highlighting persistent underrepresentation. Deep-rooted societal norms often deter women from pursuing STEM (science, Technology, Engineering, Mathematics) careers, reinforcing traditional gender roles. Workplace challenges include male-dominated environments, long working hours, and insufficient inclusive policies such as flexible work arrangements and equitable parental leave.*

*Perceptions of workplace issues differ by gender, with women more likely to identify harassment and discrimination as serious concerns. Strategies to address these disparities include fostering early STEM interest among girls, implementing diversity-focused workplace policies, promoting women in leadership roles, and fostering collaboration across sectors. This research investigates gender-based differences within the Indian IT workspace, examining how cultural, organizational, and societal factors shape the experiences of male and female employees. The research highlights the barriers that women face in navigating male-dominated work environments and explores the role of organizational practices, including recruitment strategies, employee support systems, and diversity training programs, in addressing these challenges. The findings of this research are intended to inform policy development, enhance organizational practices, and contribute to the broader conversation on gender equality in India's rapidly growing tech sector.*

**Keywords:** *STEM, IT, Perception, Disparities, Strategy*

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**Introduction: Gender-Based Differences in Indian IT Workplace Culture**

The Indian IT industry is one of the most progressive sectors in terms of gender diversity, yet significant gender-based differences continue to shape workplace experiences for men and women. While women make up around 30-35% of the IT workforce, their representation declines at senior levels due to workplace biases, societal expectations, and structural challenges. Traditional gender norms often influence hiring patterns, career progression, leadership opportunities, and work-life balance. Women are more likely to face barriers such as unequal pay, limited access to leadership roles, and exclusion from key networking opportunities. Additionally, factors like safety concerns, career breaks, and unconscious bias further impact their growth in the industry. Despite these challenges, companies are increasingly recognizing the need for diversity and inclusion (D&I) initiatives to foster a more equitable work environment. Addressing these gender-based differences requires a combination of policy reforms, cultural shifts, and leadership commitment to ensure that women have equal opportunities to thrive in the Indian IT sector.

**REVIEW OF LITERATURE**

According to **Kale and Marathe (2015)**, women constitute approximately 30-35% of the workforce in the Indian IT industry. While this is a significant figure compared to other sectors in India, the representation of women in top management and leadership roles remains minimal. This disparity can be attributed to various factors, including societal norms, educational choices, and biases within organizational structures.

**Tambe et al. (2020)** found that gender diversity is more prominent in entry-level roles, but the proportion of women declines significantly as one moves up the corporate ladder. This trend highlights

the challenges women face in achieving career advancement in IT, particularly in technical roles, where men typically dominate.

### RESEARCH GAP

- There is a need for research that explores the **intersectionality** of gender with other identities and its impact on career progression and workplace experiences in the Indian IT sector.
- There is a need to explore how **organizational culture** in Indian IT companies influences gender inequality, specifically in terms of access to leadership roles, informal networks, and decision-making.
- Research is needed to evaluate the **effectiveness of gender-neutral policies** in Indian IT firms, especially in terms of their impact on reducing gender-based disparities in recruitment, promotions, and leadership opportunities.

### OBJECTIVES

- ❖ To Analyze the Gender Representation in Indian IT Companies
- ❖ To Examine Gendered Work-Life Balance Issues
- ❖ To Investigate the Role of Gender Bias and Discrimination
- ❖ To Investigate the Impact of Organizational Culture on Gender Dynamics

### History of Gender-Based Differences in Indian IT Workplace Culture

The evolution of gender roles in the Indian IT industry reflects broader societal shifts in education, workforce participation, and corporate policies. While the IT sector has been more open to female employment compared to traditional industries, gender-based differences have persisted over the years due to deep-rooted societal norms and workplace biases.

#### 1. Early Years (1980s-1990s): Limited Female Representation

- The Indian IT industry began expanding in the 1980s and early 1990s, driven by software exports and outsourcing opportunities.
- Women had low representation in IT jobs, mainly due to limited access to STEM education and the perception that technology roles were male-dominated.
- The workplace culture mirrored traditional gender roles, with fewer women in leadership and a preference for men in technical and high-pressure roles.

#### 2. Rise of Women in IT (2000s): Breaking Barriers

- The 2000s saw an increase in female participation due to:
  - Growth of engineering and IT education for women.
  - IT companies actively hiring women due to global diversity norms.
  - Expansion of BPO (Business Process Outsourcing) and IT-enabled services, creating new job opportunities.
- However, women were often steered into non-technical roles such as testing, customer support, and HR rather than core programming or leadership positions.

#### 3. Mid-2010s: Focus on Diversity & Inclusion (D&I)

- Companies recognized gender diversity as a key business goal, leading to:
  - Introduction of women-friendly policies like extended maternity leave (26 weeks in 2017).
  - Launch of women leadership programs and return-to-work initiatives (e.g., TCS Rebegin, Infosys Restart Her).
  - Increased awareness of unconscious bias and gender sensitivity training.

- Despite progress, challenges persisted in career advancement, pay parity, and inclusion in decision-making roles.

#### 4. Present-Day (2020s): Striving for True Inclusion

- Women now make up 30-35% of the Indian IT workforce, but leadership representation remains low.
- Companies are implementing:
  - Hybrid work models for better work-life balance.
  - Stronger anti-harassment policies (POSH Act) to ensure safer workplaces.
  - Equal pay audits and mentorship programs to close gender gaps.
- Challenges still exist, including bias in promotions, networking barriers, and family-related career disruptions, requiring deeper cultural shifts.

#### CURRENT GENDER REPRESENTATION

The gender representation in the Indian IT sector has shown notable progress over recent years, yet significant disparities remain:

**Overall Workspace :** As of August 2023, women constitute 36% of the Indian IT workforce, amounting to over 2 million women employed in the sector. This is an increase from 30% in FY2013, reflecting a concerted effort towards enhancing diversity and inclusion within the industry.

**C-Suite (High Ranking) Roles :** Despite the increase in overall female participation, women hold only 8% of C-suite positions and about 11% of leadership roles. This indicates a pronounced drop-off in representation at senior levels, where women face barriers to advancement, including systemic biases and inadequate mentorship opportunities.

**Rising Participation :** Women are projected to make up 35% of the workforce in GCCs by 2027, highlighting a growing trend towards inclusivity in these innovation hubs. However, current leadership representation in these centres remains low.

**Hiring Trends :** The IT sector has the highest female representation among various industries in India, with participation rates significantly higher than those in FMCG (5.5%) and industrial sectors (4.3%).

#### CULTURAL NORMS AND SOCIETAL EXPECTATIONS:

- ❖ Deep-rooted cultural norms and societal expectations perpetuate gender biases. From an early age, girls in India are often steered away from pursuing interests in STEM subjects, with traditional gender roles and expectations taking precedence. This discourages women from exploring careers in technology and reinforces the notion that these fields are better suited for men.
- ❖ India's tech industry has often been characterized by a work culture that prioritizes long hours, constant availability, and a male-dominated environment. This can be particularly challenging for women, who often shoulder a disproportionate share of household and family responsibilities.
- ❖ The lack of inclusive policies, such as equitable parental leave and flexible work arrangements, can further deter women from entering or remaining in the tech workforce.
- ❖ Even when playing the same leadership positions as men, women administrators are rated less favourably, earn less recognition from their colleagues, are removed from critical networks, and face more attention and critique.

**Barriers to Inclusion of women in Indian IT sector**

Despite progress in gender diversity, several barriers to inclusion persist for women in the Indian IT sector. These barriers based on societal norms, workplace biases, and structural challenges that impact women's career growth, participation, and leadership opportunities.

**1. Representation and Leadership Gaps**

- Women make up 30-35% of the Indian IT workforce but hold fewer leadership roles.
- The "leaky pipeline" issue: Women often drop out at mid-management levels due to work-life balance challenges.
- Male-dominated leadership: Fewer female role models in senior positions make it harder for women to break into leadership.

**2. Work-Life Balance and Family Expectations**

- **Double burden:** Women often juggle professional responsibilities with household duties.
- **Career breaks:** Many women take breaks for childcare or family obligations, leading to slower career progression.
- **Maternity leave policies** (26 weeks in India) are strong, but paternity leave is minimal, reinforcing traditional gender roles.
- **Flexibility stigma:** Women opting for flexible work arrangements are sometimes perceived as "less committed" than male counterparts.

**3. Gender Bias in Hiring and Promotions**

- Women are often steered toward support roles (HR, testing, documentation) rather than core tech roles (coding, AI, cybersecurity).
- **Promotions and salary negotiations:**
  - Women are less likely to self-promote or negotiate salaries, leading to pay gaps.
  - Perception that men are "better suited" for leadership roles in high-pressure environments.

**4. Workplace Culture and Networking Barriers**

- **Informal networking opportunities** (golf outings, late-night discussions) are often male-dominated, limiting women's access to leadership circles.
- **Stereotypes about women in tech:** Women in engineering and tech roles may face unconscious biases questioning their competence.
- **Microaggressions:** Comments like "Are you sure you can handle this?" subtly undermine confidence and credibility.

**5. Safety Concerns and Work Hours Limitations**

- Many women avoid late-night shifts or travel-heavy roles due to safety concerns, impacting their chances in global projects or leadership roles.
- IT companies provide transport for late-night shifts, but safety concerns still discourage participation.

**6. Sexual Harassment and Workplace Policies**

- Despite POSH (Prevention of Sexual Harassment) policies, many women hesitate to report misconduct due to fear of backlash.
- Subtle forms of exclusion, such as being left out of important meetings or not being given high-visibility projects, affect career growth.

## **7. Lack of Mentorship and Support Systems**

- Fewer female mentors and sponsors make it harder for women to navigate workplace challenges and advance in their careers.
- Women often have fewer role models in STEM fields, leading to lower retention in technical roles.

## **Perception and Attitude**

The perception and attitude toward gender roles in the Indian IT workplace are shaped by deep-rooted societal norms, biases, and corporate culture. While the IT sector is relatively progressive compared to other industries, traditional gender stereotypes continue to influence how men and women are viewed in professional settings.

### **1. Perceptions About Women's Capabilities**

- Women in technical roles often face implicit bias, with assumptions that they are better suited for support functions (HR, testing, documentation) rather than core development, AI, or cybersecurity.
- Leadership roles are frequently seen as male-dominated, with an underlying belief that women may lack the assertiveness or risk-taking ability required for high-pressure positions.
- Women in senior positions sometimes feel the need to "prove themselves" more than their male counterparts to gain credibility.

### **2. Attitudes Toward Work-Life Balance**

- There is an unspoken expectation that women will prioritize family over career, leading to perceptions that they are less committed to long-term career growth.
- Maternity leave, while legally mandated, sometimes results in career stagnation, as employers hesitate to assign women key roles due to the possibility of career breaks.
- Women opting for flexible work arrangements may be perceived as lacking ambition, whereas men working late hours are viewed as "dedicated professionals."

### **3. Networking and Workplace Socialization**

- Informal networking and mentorship opportunities are often male-centric, with women having limited access to key decision-makers.
- Women may feel excluded from workplace discussions that take place in informal settings (late-night calls, business trips, or social outings), limiting their visibility for promotions.
- Male colleagues may feel hesitant to mentor or sponsor female employees, fearing potential workplace harassment accusations or social discomfort.

### **4. Attitudes Toward Promotions and Leadership**

- Women often experience "prove-it-again" bias, where they must repeatedly demonstrate their competence, while men are promoted based on potential rather than past performance.
- Assertive women in leadership roles may face negative perceptions, being labeled as "too aggressive" or "difficult," whereas the same traits in men are seen as leadership qualities.
- Some organizations still hesitate to place women in client-facing or high-stress roles, assuming they may struggle with the demands.

### **5. Changing Attitudes and Positive Trends**

- Many Indian IT companies are actively working on gender sensitivity training to combat unconscious bias.

- Diversity & Inclusion (D&I) programs are improving perceptions of women as leaders and innovators in technology.
- The rise of women-in-tech initiatives is slowly shifting workplace attitudes, encouraging more female participation in leadership and technical roles.

### **Strategies for Improvement: Addressing Gender-Based Differences in the Indian IT Workplace**

To create a more inclusive and equitable workplace, Indian IT companies must adopt strategic policies, cultural shifts, and leadership-driven initiatives that address gender disparities. Here are some key strategies for improvement:

#### **1. Strengthening Hiring and Career Progression Policies**

- ✓ Diversity-focused hiring: Implement targeted recruitment programs to increase female representation in technical and leadership roles.
- ✓ Transparent promotion criteria: Ensure that men and women are evaluated on the same parameters for career advancement.
- ✓ Salary parity audits: Regularly assess and address gender pay gaps to promote fairness in compensation.

#### **2. Creating a Gender-Inclusive Work Culture**

- ✓ Unconscious bias training: Educate managers and employees to recognize and overcome stereotypes and biases in decision-making.
- ✓ Encouraging women in leadership: Actively mentor and sponsor women for executive and senior technical roles.
- ✓ Inclusive workplace policies: Foster a culture where women are given high-impact roles, not just administrative or support functions.

#### **3. Supporting Work-Life Balance**

- ✓ Flexible work arrangements: Offer remote work, hybrid models, and flexible hours without penalizing career growth.
- ✓ Strong return-to-work programs: Implement initiatives like career re-entry programs (e.g., TCS Rebegin, Infosys Restart Her) to help women resume work after breaks.
- ✓ Equal parental leave: Promote paternity leave policies to reduce the burden on women and encourage shared family responsibilities.

#### **4. Enhancing Workplace Safety and Inclusion**

- ✓ Enforce POSH policies effectively: Ensure strong Prevention of Sexual Harassment (POSH) mechanisms, encouraging women to report concerns without fear of retaliation.
- ✓ Safe late-night work options: Improve transport and security measures to ensure women can work late shifts without safety concerns.
- ✓ Zero-tolerance policies: Take strict action against workplace discrimination, harassment, and exclusionary practices.

#### **5. Encouraging Networking and Leadership Development**

- ✓ Women-in-Tech initiatives: Create platforms like women's leadership networks, mentorship circles, and tech communities to support female growth.
- ✓ Cross-gender mentorship programs: Encourage male leaders to mentor female employees to break networking barriers.
- ✓ Equal opportunities for global roles: Provide women with international project exposure and travel opportunities to help them advance in leadership.



## 6. Changing Organizational Mindsets

- ✓ Leadership commitment to gender inclusion: Top management should actively track gender diversity goals and hold leaders accountable for progress.
- ✓ Workplace gender audits: Regularly assess policies, conduct employee feedback surveys, and make data-driven changes.
- ✓ Promoting women role models: Showcase successful female leaders in IT to inspire young professionals and challenge stereotypes.

## Research Methodology

### Research Design:

**Type of Study:** Descriptive and exploratory, using a **secondary data analysis** approach.

**Objective:** To analyze existing data on gender disparities in Indian IT workplaces, focusing on leadership roles, career progression, pay gap, work-life balance, and organizational culture.

### Data Sources:

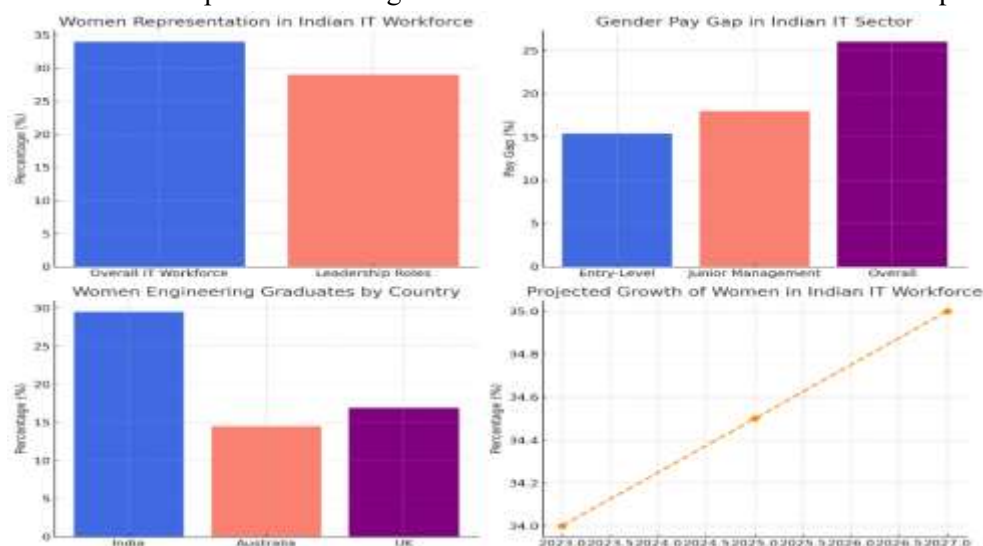
**Industry Reports:** NASSCOM, McKinsey & Company, and Deloitte's annual reports on gender diversity in Indian IT firms.

**Secondary Data Collection:** Gather existing reports, articles, surveys, and studies that highlight gender disparities in career advancement, pay gaps, workplace culture, and diversity practices in Indian IT companies.

**Selection Criteria:** Use reports and studies published within the last 5-7 years for the most relevant and up-to-date information.

## Data Analysis

Here's a detailed visual representation of gender-based differences in the Indian IT workplace:



### Interpretation of above data:

- Workforce Representation** – Women make up 34% of the overall IT workforce, but only 29% of leadership roles.
- Gender Pay Gap** – Women earn 15.38% less at the entry level, with the gap widening to 18-20% at junior management and up to 26% overall.



3. **Women in Engineering** – India has a higher percentage (29.5%) of female engineering graduates compared to Australia (14.5%) and the UK (16.9%).
4. **Projected Growth** – Women's participation in IT is expected to rise to 35% by 2027.

### FINDINGS

1. **Underrepresentation in Leadership Roles:** Women are significantly underrepresented in senior leadership and technical roles, with only about 10-12% of leadership positions held by women, despite making up 30-35% of the workforce.
2. **Gender Pay Gap:** A persistent gender pay gap exists, with women earning 15-20% less than men in similar roles due to factors like fewer women in high-paying leadership and technical roles.
3. **Bias in Hiring and Promotions:** Gender bias affects hiring and promotion processes, with women often overlooked for leadership roles or promotions due to stereotypes about their commitment, especially regarding family responsibilities.
4. **Work-Life Balance Struggles:** Women face more challenges than men in balancing work and personal life, with societal expectations of caregiving roles affecting their career growth. Although flexible work policies exist, they are often more beneficial to men.

### SUGGESTIONS

1. **Increase Representation in Leadership:** Implement mentorship programs and leadership training to promote women into senior and technical roles.
2. **Close the Gender Pay Gap:** Conduct regular pay audits to ensure equal pay for equal work and address pay disparities.
3. **Bias-Free Hiring and Promotions:** Standardize hiring and promotion processes with clear, merit-based criteria to eliminate gender bias.
4. **Improve Work-Life Balance:** Offer flexible work options like remote work and flexible hours, ensuring they are equally accessible to both men and women.
5. **Strengthen Anti-Harassment Policies:** Create a zero-tolerance approach to harassment with clear reporting mechanisms and safety measures.

### CONCLUSION

Gender-based differences in the Indian IT workplace continue to hinder equality, with women facing challenges in career advancement, leadership representation, and work-life balance. Despite some positive steps, such as diversity initiatives and mentorship programs, deeply ingrained societal norms and organizational biases still limit progress. For true gender equity, companies must enforce policies more effectively, challenge stereotypes, and create an environment where both men and women have equal opportunities to succeed. Addressing these issues will help build a more inclusive and balanced IT workplace culture.

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<https://cxotoday.com/specials/closing-the-gender-gap-shaping-a-more-inclusive-tech-landscape-for-women/>

**ADDRESSING INEQUALITIES FOR INCLUSIVE VIKSIT BHARAT****Dr. Manisha VirajPimpalkhare**

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**Abstract**

*The widely acknowledged objective of Viksit Bharat 2047 is primarily centered on the economic growth of India, as reflected in its recent performance, positioning the nation among the top five global economies based on gross national product (GNP) indicators. While aspiring to become a developed economy is a commendable goal, it is essential to adopt a pragmatic approach in setting objectives, especially considering the stark socioeconomic challenges, including widespread poverty, deep-seated inequalities, and rigid societal norms that often limit opportunities for women. A crucial aspect in this context is addressing inequality in its multiple dimensions. This paper examines three major forms of inequality—economic, regional, and gender disparities. These aspects are significant as they directly impact human dignity, the realization of development milestones, and a comprehensive understanding of regional dynamics in a vast and diverse nation like India. By utilizing secondary data and theoretical frameworks from development economics, this study explores the extent of these inequalities and the underlying factors contributing to them.* Key words- Viksit Bharat, Gender equality, regional inequality, income inequality.

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**Key words-** Viksit Bharat, Gender equality, regional inequality, income inequality

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**I- Introduction**

India's vision of Viksit Bharat 2047 aspires to transform the nation into a developed economy by bridging systemic economic, social, and infrastructural gaps. A crucial aspect of this vision is overcoming the middle-income trap (World Bank, 2024) through efficiency-driven progress and structural reforms. However, while economic expansion is a key driver, true development extends beyond GDP growth—it must be sustainable, intergenerational, and centered on human well-being. This transformation requires a holistic approach that integrates social equity, environmental sustainability, and inclusive governance.

A fundamental premise of development is empowering individuals—both men and women—to pursue their aspirations and participate meaningfully in national progress. Ensuring equitable access to opportunities is not only an economic necessity but also a social imperative. Development must be inclusive, enabling every citizen to engage with and contribute to the nation's growth trajectory. This focus on broad-based participation has reshaped contemporary development discourse, highlighting the importance of inclusion, sustainability, and shared prosperity.

This paper underscores one of the most pressing challenges hindering inclusive growth: inequality. As a deeply entrenched and multidimensional issue, inequality manifests in various forms, including economic disparity, regional imbalances, and gender-based inequities. While these dimensions are interrelated, they each have unique characteristics that necessitate both individual and comparative analyses. Addressing these disparities is crucial for fostering a development model that is not only growth-oriented but also socially just and structurally equitable.

Although India's economic performance has been widely studied, there remains a critical gap in research that examines the interconnected nature of economic, regional, and gender inequalities within the Viksit Bharat 2047 framework. Most existing studies primarily emphasize macroeconomic indicators such as

GDP and GNP while overlooking the structural barriers—such as entrenched social hierarchies, institutional limitations, and regional disparities—that obstruct inclusive development. This paper aims to fill this gap by analyzing the depth, causes, and reinforcing mechanisms of these inequalities through the lens of development economics. It further provides policy insights necessary to build a truly inclusive and sustainable vision for Viksit Bharat 2047, ensuring that India's growth narrative is one of shared prosperity and long-term resilience.

**Review of Literature-** The review of literature is presented in the conceptual manner i.e based on the key concepts discussed in the paper. These are- theoretical framework in which the analysis is made followed by various dimensions of inequality viz- income inequality, regional inequality and gender inequality.

### **Theoretical Framework**

The study of inequality has progressed through diverse economic frameworks, with classical economic theories emphasizing structural transitions and modern development theories focusing on persistent systemic barriers. The Lewis Dual-Sector Model (1954) explains economic development as a transformation from an agricultural to an industrial economy, suggesting that surplus rural labor would eventually be integrated into urban industries.

However, in India, this shift has been uneven, with certain states benefiting more than others, leading to widening regional disparities. The Kuznets Curve Hypothesis (1955) similarly proposes that inequality initially rises with economic growth before declining. However, recent empirical studies challenge this view, indicating that regional inequalities in India have persisted despite rapid GDP expansion (Chancel & Piketty, 2019).

From a gendered economic standpoint, Amartya Sen introduced the concept of capabilities, arguing that women's involvement in the workforce is influenced not only by economic growth but also by social and institutional factors (Nussbaum, 2003). Similarly, Becker (1991) proposed through his human capital theory that as education levels increase, gender disparities in employment should decline. However, India's female labor force participation remains among the lowest globally, despite advancements in education, highlighting the role of structural and cultural barriers beyond human capital limitations.

These theoretical perspectives help explain the persistence of regional and gender-based inequalities in India, despite economic development.

### **Economic Inequality**

Economic inequality in India is starkly evident to both ordinary citizens and policymakers. The coexistence of immense wealth and extreme poverty—exemplified by the richest city also housing the country's largest slum and its ambitious redevelopment efforts—underscores the inescapable reality of economic disparity in India.

The concentration of wealth among the affluent has surged dramatically, as seen in the sharp rise in the number of billionaires (Chancel & Piketty, 2019; Global Wealth Report, 2018). Notably, the wealthiest 10% of India's population has witnessed a decline in income share through much of the 1980s and 1990s, followed by a surge post-2015, peaking at 38.6% in 2020-21 before dropping to around 30% in 2022-23.

At the same time, the income share of the bottom 10% has remained stagnant at around 2%, a situation that worsened further during the COVID-19 pandemic. The Gini coefficient, which measures income inequality, hovered around 0.4 for years but climbed to 0.528 by 2020-21, with the pandemic

exacerbating economic disparities (Shukla, 2024). Reports indicate that in 2017, an overwhelming 73% of wealth creation benefited only the top 1%, further intensifying income inequality (Oxfam International, n.d.)

### **Regional Inequality**

Despite overall economic growth, regional disparities continue to be deeply embedded in India's development landscape. While the urbanized and industrialized western states have flourished, states like Bihar have struggled to achieve similar progress in key areas such as livelihood, education, health, and gender equality (Panday & Gautam, 2020). These states continue to experience concentrated poverty, often as a result of historical disadvantages, including the colonial legacy and geographical or locational inequalities that hinder infrastructure development.

A significant portion of interstate inequalities can be attributed to the state's failure to foster viable livelihood opportunities, further fueling migration from underdeveloped regions to more prosperous states. This movement has contributed to socio-political tensions and divisive narratives across different regions.

Biswajit Mohanty, Bhanumurthy, and Dastidar (2017) analyzed the relationship between infrastructure development and economic performance across Indian states. Their findings suggest that addressing disparities requires increased public investment in states with infrastructure deficits. The Northeastern states exemplify this challenge, as they remain trapped in a low-development cycle due to historical infrastructure deficiencies, often linked to geographical and environmental constraints.

### **Gender Inequality**

Gender equality is a key focus of Sustainable Development Goal (SDG) 5, which is deeply embedded in the current policy framework. Discrimination against women is widely recognized as an obstacle to development and human welfare. Against this backdrop, this discussion explores various dimensions of gender discrimination and the strategies proposed to achieve gender equality.

One of the most critical drivers of gender equality is economic independence, which enables women to enter and remain in the workforce. The PLFS data provides valuable insights into female labor force participation rates, reflecting women's economic opportunities and ability to establish their worth.

A comparative analysis of rural and urban female labor force participation highlights the intersectional nature of gender disparities. Despite lower overall participation rates compared to men, rural and urban women engage in diverse and distinct work activities, leading to varying economic outcomes.

The labor force participation trends of men and women in India reveal persistent inequalities in the workplace. Women often face wage disparities, occupational segregation, and deeply rooted socio-cultural perceptions that place their work in a secondary position compared to men. Addressing these challenges requires targeted policies and structural reforms to ensure equal opportunities for all. While the following section deals with the economic aspects of inequality, a measure called Gender Social Norm Index (2023) speaks of the gender biases in society having negative impact on gender equality. India scores poorly in this respect. 99% of Indians hold at least one gender bias causing an adverse situation for realisation of gender goals.

The ILO's Global Wage Report 2024 indicates that the gender wage gap is expected to persist in low- and middle-income countries, particularly in the informal sector. This trend is especially relevant to India, where a significant proportion of women are employed in informal jobs.

### **Research Objectives**

- To gain insights into the scale of economic inequality in India.

- To analyze the evolving dynamics of regional development.
- To investigate the underlying causes and mechanisms contributing to gender inequality in India.
- To evaluate strategies for reducing these inequalities.

### Research Methodology

This study utilizes secondary data obtained from credible sources and applies conceptual economic frameworks to examine the issue of inequality.

### Data Analysis and Interpretation

#### Regional Inequality

As per RBI Handbbok (2024) In 2022-23 the net fixed capital formation varied between Rs. 56,20,486 Lakhs in Gujarat to Rs. 28,12,436 Lakhs in Maharshttra to Rs. 10,83,709 lakhs in Bihar to Rs. 6,75,858 lakhs in West Bengal. In Uttar Pradesh, this is significantly increased from Rs. 8,13,269 lakhs in 2021-22 to Rs. 19,58,800 Lakhs

According to the RBI Handbook of Statistics on Indian States sector-wise GSDP Contributions indicate that-

- Services sector dominates in Maharashtra and Tamil Nadu.
- Industry sector is strong in Gujarat and Maharashtra.
- Agriculture is highest in Uttar Pradesh and Madhya Pradesh.
- Sikkim, Telangana, and Uttarakhand are growing fast, while West Bengal and Tripura lag.
- Maharashtra dominates both Services & Industry, while UP leads in Agriculture.
- Agricultural states often have lower overall GSDP, indicating dependence on low-value output.

#### Gender Inequality

The most commonly used indicator for Gender equality is the Female Work force Participation Rate. The PLFS 2023-24 report provides detailed employment trends by industry and type of employment

LFPR (%)for Male and Female (Rural and Urban areas) 2017-18 to 2023-24 Usual Status (ps+ss)							
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Rural Male	76.4	76.4	77.9	78.1	78.2	80.2	80.2
Rural Female	24.6	26.4	33	36.5	36.6	41.5	47.6
Urban Male	74.5	73.7	74.6	74.6	74.7	74.5	75.6
Urban Female	20.4	20.4	23.3	23.2	23.8	25.4	28
R+U Male	75.8	75.5	76.8	77	77.2	78.5	78.8
R+U Female	23.3	24.5	30	32.5	32.8	37	41.7

Source- PLFS Report 2023-24

- Findings from the PLFS Report 2023-24
- Women's employment in rural areas was primarily concentrated in the agriculture sector.
- Among female workers in regular wage or salaried positions (2021-24), over half lacked a written contract or social security, and more than 40% did not receive paid leave.
- Employment rates were highest among women with secondary education or higher, across all categories of Usual Status (ps+ss). Employment among rural women rose from 9% to 13.3% in urban areas in 2023-24, continuing a similar trend observed in 2021-22 and 2022-23.

- Agriculture remains a significant employment sector for women:
- 64.4% of all employed women worked in agriculture (rural + urban).
- 76.9% of rural women and 12.3% of urban women were engaged in agricultural work in 2023-24.
- Manufacturing: 11.6% of female workers are in manufacturing, reflecting limited industrial employment.
- For Urban females, Other services are the next highest job alternative with 40.1% of urban females engaged in these services.
- Trade, Hotels & Restaurants: 15% of urban women work in this sector, indicating representation in retail & hospitality.
- Transport & Communication: Female participation is very low (1.1%).
- A larger proportion of female workers are concentrated in the informal categories of workers like self employed or casual workers or working in the household enterprises. This indicates the unpaid nature of the women's work leading to its undervaluation

#### **VI Policy Interventions: Successes and Challenges**

India has implemented multiple initiatives to address inequality; however, their overall impact has been inconsistent.

##### **Regional Inequality Policies:**

- Make in India and Digital India initiatives were designed to boost job creation. However, investment remains concentrated in urban centers, limiting economic benefits for rural areas.
- PM Gati Shakti Infrastructure Plan seeks to boost connectivity across states, but its impact on economic convergence remains slow
- The Aspirational Districts Programme targets underdeveloped regions, yet funding shortages and bureaucratic inefficiencies have hampered progress (NITI Aayog, 2023).

##### **Gender Policy Implementation:**

- Beti Bachao, Beti Padhao (2015) has successfully raised awareness, but its implementation remains inconsistent across states.
- Skill India and Women Entrepreneurship Schemes have benefited millions of women; however, low workforce integration rates highlight deeper structural barriers.
- 33% Women's Quota in Politics (2023) aims to boost representation, yet political empowerment alone does not ensure economic inclusion.

Additionally, while policy frameworks exist, their effectiveness hinges on proper implementation, accountability, and adaptability to regional needs.

#### **VII Conclusion**

##### **VII. Conclusion**

The vision of Viksit Bharat 2047 presents an ambitious yet achievable goal, contingent on economic growth being accompanied by a strong commitment to reducing inequalities. While India has made significant strides toward becoming one of the world's largest economies, persistent disparities in income, regional development, and gender equality continue to challenge inclusive progress. These gaps hinder not only economic advancement but also social cohesion and national resilience.

Addressing these inequalities is not just an economic necessity but also a moral and social imperative to ensure equitable and sustainable development. Structural disparities in access to education,



healthcare, and financial resources must be tackled through inclusive policymaking. Furthermore, this study underscores that economic inequality remains a critical issue, influencing access to resources and opportunities. Regional disparities persist, shaping uneven development trajectories across the country, thereby limiting the full potential of India's demographic dividend.

Achieving the dream of Viksit Bharat requires a multidimensional approach that integrates targeted policy measures, social reforms, and regional development strategies. Sustainable and equitable growth will depend on addressing these structural imbalances through progressive policies that empower marginalized groups, enhance regional equity, and promote gender inclusivity. Strengthening institutional frameworks, fostering public-private partnerships, and investing in digital and physical infrastructure will be pivotal. Moving forward, a commitment to inclusive development, aligned with the Sustainable Development Goals (SDGs), will be critical in ensuring that India's growth story is one of shared prosperity, resilience, and social justice.

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## CAPACITY BUILDING & PROFESSIONAL DEVELOPMENT THROUGH EXTENSION EDUCATION

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### Abstract

*The Department of Lifelong Learning & Extension (DLLE) acts as a medium to promote three dimensional and intergenerational learning. It is a University of Mumbai department that aims to develop a sense of responsibility in students towards the society. Through the Department of Lifelong Learning & Extension students are made aware of social issues and are helped to develop new skills. It also includes developing entrepreneurship, leadership skills, teamwork, networking through various activities which initiates capacity building and professional development.*

*On a personal note, the Department of Lifelong Learning & Extension offers increased knowledge and awareness while deepening one understanding of intellectual curiosity. This also helps in nurturing self confidence and promoting broader social connections. While on a professional level, it helps to enhance skill development for career advancement and provides opportunities for networking for collaborations. To elaborate further, (In accordance with the University Ordinance 229.A) the Department of Lifelong Learning & Extension awards students with 10 grace marks upon the completion of college & community activities and the submission of the final project.*

**KeyWords:** Extension Education, Students, Learning, Dimensional, Department, Society, Rapport, Development, Growth, Skills.

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### ● Introduction



The DLLE was established as the Department of Adult and Continuing Education and Extension on October 12th 1978 and has been recognized as a statutory Department of the University of Mumbai since 1994. It seeks to facilitate the sensitization of students to socio-cultural realities. At present, it is functioning under the Board for Lifelong Learning and Extension to create skilled and learned human power through its various degree level programmes and skills development programmes. Furthermore, this can also be classified as Extension Education, the third dimension of the University system. This is considered as a two-way process which visualizes mutual sharing of resources between the Community and the University for the Development of both the common man and the students. At places, the Department of Lifelong Learning and Extension (DLLE) helps in promoting a meaningful

and sustained rapport between the University and the community alongside the co-existence of other extension units.

At present the DLLE extension activities are being conducted on regular basis in annual program for more than 330 colleges with 600 degree college Extension Work teachers and 32,000 Extension Work Students from various districts in Maharashtra involved in various Extension Work Projects of Skill Development, Industry Orientation, Career Guidance, Information Technology, Entrepreneurship Development, Status of Women in

Society, Environmental Protection, Population Education & National Institute of Schooling.

The students of Degree Colleges from the faculty of Arts, Commerce, Science, Pharmacy, Law, Engineering, Education and Management are awarded Ten Additional Marks at the final exam on completion of 120 hours of work on the Extension Work Project undertaken and submission of the Project Report under University Ordinance 229.A in an academic year. Starting from the academic year 2024-25, the department has initiated a process to introduce new activities as per the demands of larger teaching fraternity, students and community.

The aim of the Department of Lifelong Learning & Extension (DLLE) focuses on promoting a meaningful and sustained rapport between the Universities and the Community i.e., to have educational programs for a Social Change. The objectives on the other hand, highlights the need of it acting as the focal agency in the University system for all Lifelong Learning programs to provide academic and technical resource support for community-based activities. Furthermore, it helps students develop a sense of responsibility towards society while ensuring they cater to the needs of the unreached. All in all, they serve as an intellectual intervention in the community's living problems which need to be overcome through an educational process by a wider exposure to real life situations through a variety of programs. All of this takes place while keeping in mind the working motto of DLLE i.e 'Reach to the Unreach'. The motto guarantees one's active participation and understanding and intervention in the community's living problems which needs to be overcome through an educational process. Each year, more than 600 Degree and B.Ed. Teachers and nearly 850 Student Managers are trained and motivated to carry out the extension work projects in the colleges and to benefit the community.

The eligibility to enroll students as per the DLLE guidelines and directions of the University of Mumbai with a student having completed their Higher Secondary Education Certificate (HSEC) from any stream. After enrolment, the student must complete 120 hours of work by participating in various activities to be entitled to 10 grace marks. It is worth noting that the DLLE is a one-year program. Other than that, one of the main reasons why colleges have a Department of Lifelong Learning & Extension is because it helps students develop social responsibility, understand socio-cultural realities and meet community needs. It also acts as a medium to promote a meaningful and sustained rapport between the university and the community. It impacts the daily life of an individual by broadening educational access, implementation of intergenerational learning initiatives, cultural awareness and mental stimulation. On a personal note, the Department of Lifelong Learning & Extension offers increased knowledge and awareness while deepening one's understanding of intellectual curiosity. This also helps in nurturing self confidence and promoting broader social connections. While on a professional level, it helps to enhance skill development for career advancement and provides opportunities for networking for collaborations.

The following qualities can be developed by students through their participation in the Department of Lifelong Learning & Extension (DLLE) :

**Time Management**

- Decision-making
- Interpersonal Relations
- Planning & Organization of a Project
- Understanding production and marketing on a small scale.
- Self-Confidence
- Communication
- Negotiating skills ● Leadership Skills

Leadership can be considered as the end-product of all the activities as it is enhanced during time with adequate experience. On a personal level, I think everyone gets an equal and fair chance to enhance their management skills through organizing activities and taking active part in it. In a way, it helps in capacity building by developing and strengthening one's skills, abilities, instincts and thinking capabilities. This helps them to stay alert and in action for the betterment of the society. This can further be exercised by workshops, seminars, training, and engaging activities. This can help in empowering each team member to recognize and use their unique strengths. This can also foster better collaboration, innovation, and strategic planning. The entire team can upskill their work in this way.

As a matter of fact, capacity building is quite necessary to ensure efficient professional development.

**Research Methodology :**

Primary data analysis is the original analysis of data collected for this research paper. After collection, the primary data was analysed to reach conclusions and a study was formalised.

**Types of Research Used :**

In the following paper, the researcher has used analytical research and survey methodology for finding the basic information on the topic. The researcher chose to obtain a Quantitative and Qualitative method of research to study the topic in detail conducted through an online questionnaire survey. The results of which may be depicted within the sort of numerical.

The results achieved from this research method are logical, statistical, and unbiased. Data collection happened using a structured method and was conducted on a smaller group of samples that represent the local area of responder.

**Selection of the Topic :**

1. To understand the influence of Extension Education
2. To understand students' viewpoint of the said topic
3. To understand why Capacity Building and Professional Development is required.

**Objectives of the Paper :**

1. To understand how the DLLE acts as a medium between the University and the society
2. To identify how students view the DLLE as part of their curriculum
3. To understand the functioning and skills development process of Extension Education

**Data Collection Method and Sample Size :**

Both Secondary and Primary Data Collection methods have been used for the paper. To collect primary data, a simple google form questionnaire was prepared with 13 questions and a sample size

of 50 was collected. While, for secondary data, research books, statistical tools and articles were searched and studied from.

It is worth noting that, while collecting this data, only one response was collected from an individual and hence the authenticity of the data was thoroughly maintained.

#### **Techniques and Tools Used :**

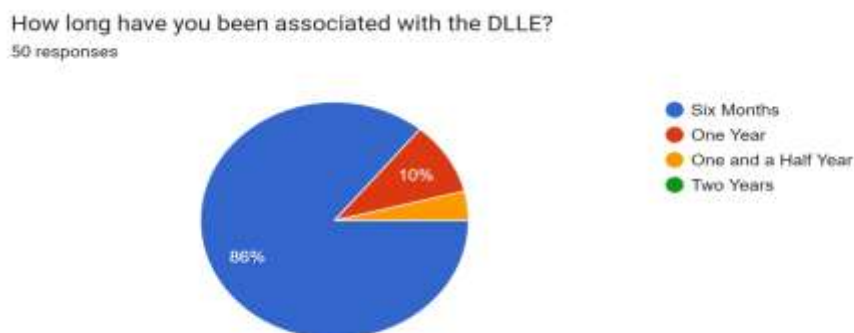
The tool used for this research paper for collecting the responses was a Questionnaire made on Google Forms.

#### **Limitations of the Paper :**

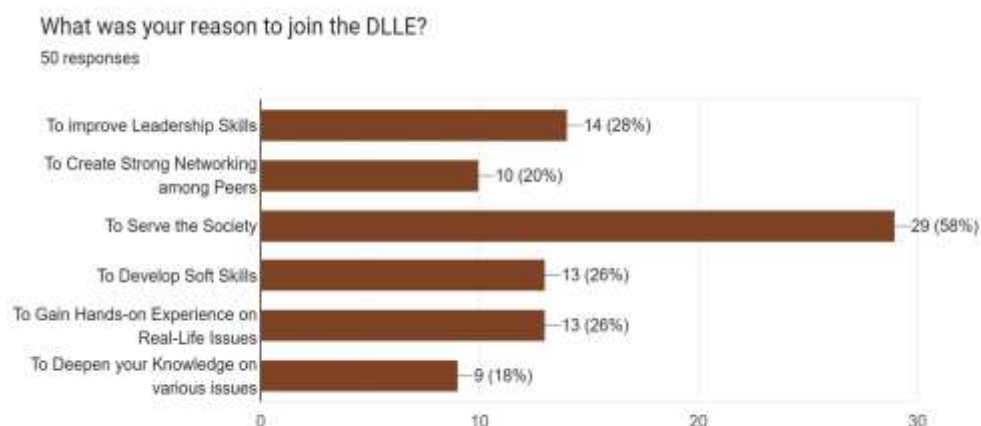
The paper is only limited to a few questions in general. Also, due to limited coverage, the questionnaire was limited to just 50 individuals.

#### **Data Analysis and Interpretation :**

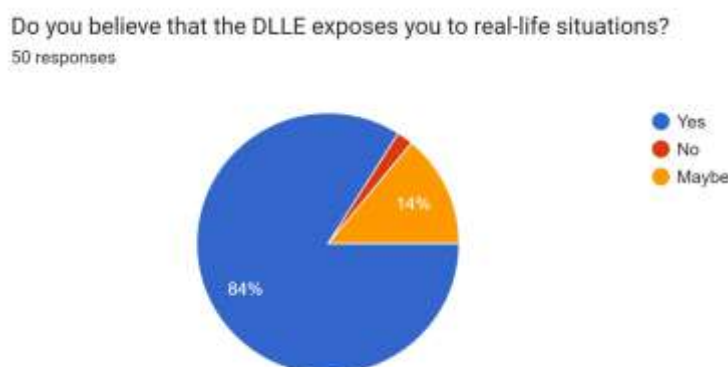
To exemplify the influence of the Department of Lifelong Learning & Extension on students, a general consensus was collected through the form of a questionnaire where 9 general questions were asked to them with regards to leadership and skills attained through the activities and training sessions. I chose to obtain a Quantitative and Qualitative method of data to present the general consensus of the impact. The results have been depicted as numerical findings. The results achieved from this questionnaire are logical, statistical, and unbiased. Data collection happened using a structured method and was conducted on a smaller group of samples that represent the Department of Lifelong Learning & Extension.



The first question inquired about students' association with the Department of Lifelong Learning & Extension. The survey found out that most of the present extension work students have joined in the present academic year i.e. 2024-25. Only a few students have been associated with the DLLE for a year or more than that.

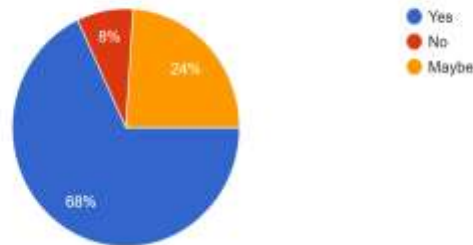


The second question dealt with the reasons why the extension work students have joined the Department of Lifelong Learning & Extension. The survey found out that the main reason why most of them joined the DLLE was to serve the society which is what the DLLE is about. The other reasons varied from improving leadership skills, creating strong networking among peers, developing soft skills, gaining hands-on experience on real-life issues and lastly to deepen their knowledge on various issues.



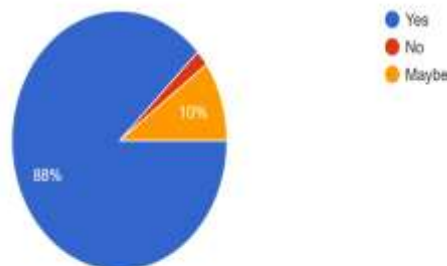
The following question inquired whether the extension work students believed that they were getting exposed to real-life situations through the DLLE. A vast majority of them responded positively to it by answering “Yes” to the question. A small section however did respond negatively to it but nonetheless there are still second term activities where their perspective can be changed.

Do you believe that the DLLE helps in educating a person in a multi-dimensional way?  
50 responses



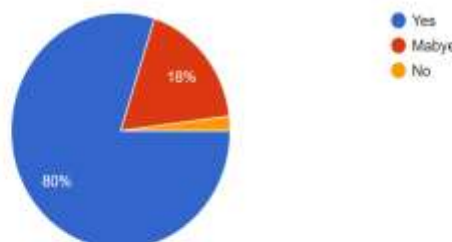
Following that, the extension work students were asked if they believed that the Department of Lifelong Learning & Extension helped in educating them in a multi-dimensional way, here again a vast majority responded affirmatively to the question. On the other hand, some responders were divided between their opinions.

Do you believe that the DLLE helped you in improving as a team member during activities?  
50 responses



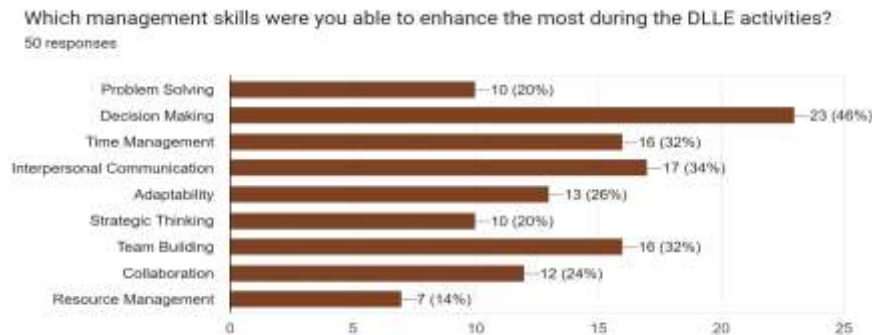
Next up, I asked them if they thought the DLLE helped them in improving as team members during activities to which the majority of them agreed that the DLLE activities help them in becoming better team members.

Do you believe that the DLLE has helped you in building your leadership skills?  
50 responses

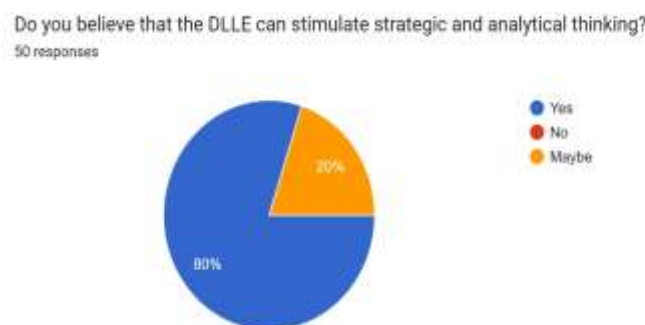


Moving on to the topic concerned, the respondents were asked if they believed that the DLLE had helped them in building their leadership skills to which a vast majority of them believed that it did help

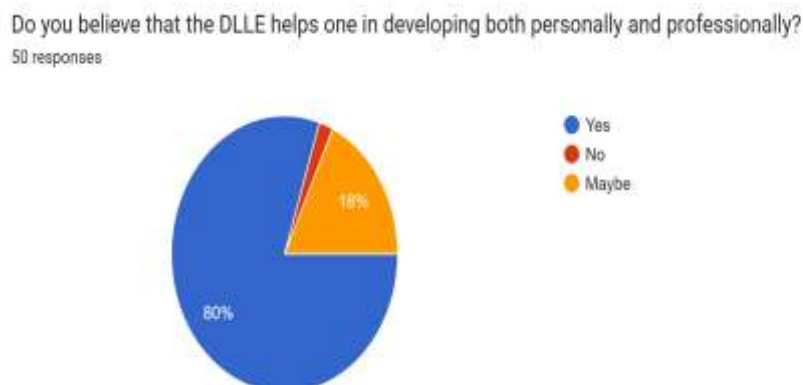
them in building their leadership skills. On the other hand, 20% of the respondents didn't believe that the DLLE helped in building their leadership skills.



Relating with management skills, the respondents were later asked about the management skills they thought they had enhanced while being with the DLLE. Many of the respondents thought that their Decision Making skills had enhanced while with the DLLE. This was followed by positive responses for Interpersonal Communication, Team Building, Time Management, Adaptability, Collaboration, Strategic Thinking, Problem Solving and Resource Management.



Furthermore, the respondents were asked if they believed that the DLLE can stimulate their strategic and analytical thinking prowess to which many of the respondents responded affirmatively. On the other hand, the remaining ones were unclear with their feelings and opinions.





Lastly, they were asked if they believed the DLLE helped them in developing both personally and professionally to which many of the respondents believed that they were positively affected in their personal and professional lives through the DLLE. Out of the remaining 20%, 18% of them were flustered with their opinions while the remaining 2% of them believed that it didn't help them much.

**Conclusion:** To conclude, I would like to state that the Department of Lifelong Learning & Extension (DLLE) acts as a blessing which helps in enhancing capacity building and professional development by the means of proper adaptation of skills which are required to perform certain activities. Through the Department of Lifelong Learning & Extension (DLLE), students are exposed to real-life situations with proper intervention in the community. This helps to enhance their personality and helps them to shape it in the right way. It develops values of human development amongst the students and encourages active commitment towards the society. In addition to all that, the DLLE also enhances the time management skills, organising skills, leadership skills, entrepreneurship skills, presentation skills and writing skills of an individual. Furthermore, students are made aware of problems in the society such as Save Girl Child, Pollution, Aids, Global Warming, Environment, Tree Plantation, Importance of Education, Illiteracy, Child Labour, Dowry Deaths, Malnutrition, Watershed Management and so many. The students are then supposed to spread awareness about these social problems/ issues through various activities such as Street Play, Exhibition, Poster Making, Songs, Speech, Survey, Elocution, Seminar & Conferences. They are made aware of DLLE's role in eradicating social problems faced by the society and trying to remind the people of their duties as an ideal citizen. The DLLE plays a prominent part in this way to ensure sufficient capacity building and professional development.

**Suggestions :** At the end, I would suggest that every student should be a part of the Department of Lifelong Learning & Extension at least once when they are in Degree College as it will give them hands-on experience with regards to real-life scenarios. The DLLE acts as a medium to initiate activities for social awareness and community betterment. Lastly, the main aim should not be the 10 grace marks but to foster community work and build a sense of responsibility towards the society.

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[www.mudlle.ac.in](http://www.mudlle.ac.in)

<https://dalmialionscollege.ac.in/d-l-l-e/>

**FINTECH INNOVATIONS AND DIGITAL FINANCIAL SERVICES: A RESEARCH PAPER****Mackrina Tuscano***Shankar Narayan College of Arts and Commerce, Bhayandar (East)*

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**Abstract**

*The financial technology (Fintech) revolution is reshaping the financial services landscape, driving innovation and expanding access to financial products and services through digital channels. This research paper explores the dynamic interplay between Fintech innovations and Digital Financial Services (DFS), examining their evolution, impact, and future trajectory. It investigates the key drivers and enablers of Fintech adoption, analyzes the diverse range of Fintech innovations and their applications in DFS, and assesses the positive and negative impacts on various stakeholders. The paper further delves into the challenges confronting the Fintech ecosystem, proposes potential solutions, and concludes by emphasizing the transformative potential of Fintech in shaping the future of finance while acknowledging the need for careful consideration of risks and ethical implications.*

**Keywords:** *Fintech, Digital Financial Services, Innovation, Financial Inclusion, Disruption, Mobile Payments, Block chain, Crypto currency, Regulation, Cyber security, Risk Management, Digital Divide.*

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**1. Introduction:**

The financial services industry has witnessed a paradigm shift in recent years, propelled by the rapid advancement of technology. Fintech, a convergence of finance and technology, encompasses a broad spectrum of technological innovations applied to financial services. These innovations are disrupting traditional banking models, creating new avenues for financial inclusion, and fundamentally altering how individuals and businesses interact with money. Digital Financial Services (DFS), facilitated by Fintech innovations, represent the delivery of financial services through digital channels, such as mobile phones, internet, and cloud computing.<sup>5</sup> This includes a wide array of services, from mobile payments and digital lending to online banking, investment platforms, and insurance.

The rise of Fintech has been fueled by several converging factors:

- **Increased Smartphone penetration:** The widespread adoption of smart phones has provided a ubiquitous platform for delivering financial services to a vast, previously underserved population.
- **Technological advancements:** Innovations in areas like artificial intelligence, machine learning, block chain, cloud computing, and big data analytics have enabled the development of sophisticated and cost-effective financial solutions.
- **Changing consumer behavior:** Consumers, particularly millennial and Gen Z, are increasingly demanding personalized, convenient, and accessible financial services, driving the adoption of digital solutions.
- **Regulatory reforms:** Supportive regulatory frameworks in some jurisdictions have encouraged Fintech innovation and investment, fostering a conducive environment for growth.
- **Competitive pressures:** Traditional financial institutions are facing increasing competition from agile Fintech startups, pushing them to embrace innovation and digitalization to remain relevant.

This research paper explores the dynamic interplay between Fintech innovations and digital financial services, examining their impact on various stakeholders and proposing solutions to navigate the challenges and harness the transformative potential of this rapidly evolving field.

## 2. Objectives:

The objectives of this research paper can be quite broad, but they generally aim to explore and understand the dynamic relationship between these two concepts. Here are some key objectives, broken down into categories:

### 1. To Understand and Define the Landscape:

- **Define and Categorize:** To clearly define "Fintech" and "Digital Financial Services" (DFS), establishing a common understanding of their scope and components. This often involves creating categories or taxonomies of different types of Fintech innovations and DFS offerings.
- **Identify Key Drivers:** To pinpoint the factors driving the growth and adoption of Fintech and DFS, such as technological advancements, changing consumer behavior, regulatory changes, and economic conditions.
- **Map the Ecosystem:** To map the Fintech ecosystem, identifying key players (startups, established financial institutions, technology providers, regulators), their roles, and their interrelationships.

### 2. To Analyze Impacts and Effects:

- **Assess Positive Impacts:** To analyze the positive impacts of Fintech and DFS, such as increased financial inclusion, improved efficiency and cost reduction in financial services, enhanced customer experience, greater access to credit, and promotion of innovation and competition.
- **Examine Negative Impacts:** To investigate the potential negative impacts, including cyber security risks, data privacy concerns, financial stability risks, regulatory challenges, the widening of the digital divide, potential job displacement, and the potential for increased inequality.
- **Evaluate Disruptive Potential:** To assess the extent to which Fintech is disrupting traditional financial services models and the implications for established financial institutions.

### 3. To Explore Solutions and Future Directions:

- **Propose Solutions:** To propose solutions for mitigating the risks and challenges associated with Fintech and DFS, such as regulatory frameworks, cyber security measures, data privacy safeguards, and financial literacy initiatives.
- **Identify Best Practices:** To identify best practices for implementing and regulating Fintech and DFS, drawing on examples from different countries and contexts.
- **Explore Future Trends:** To explore future trends in Fintech and DFS, such as the increasing use of artificial intelligence, block chain technology, and the Internet of Things (IoT) in financial services.
- **Assess Regulatory Needs:** To assess the need for updated or new regulations to govern the rapidly evolving Fintech landscape, balancing innovation with consumer protection and financial stability.

## 3. Scope of Study:

This research paper focuses on the following key areas within the Fintech and DFS landscape:

- **Specific Fintech Innovations:** The study will examine key innovations such as mobile payments, digital lending, insurtech, regtech, block chain and crypto currency, and open banking.

- **Geographical Focus:** While examples from various regions will be considered, the study will primarily focus on emerging markets and their unique challenges and opportunities in the Fintech space.
- **Stakeholder Perspective:** The research will consider the perspectives of consumers, businesses (especially SMEs), financial institutions, and regulators.
- **Time Frame:** The study will primarily focus on recent developments (past 5-7 years) and explore potential future trends in the next decade.

### Fintech Innovations

Fintech, short for financial technology, refers to the use of technology to improve and automate financial services and processes. It includes a wide range of innovations:

- **Mobile Payments:** Mobile wallets and payment apps have revolutionized the way people make transactions, offering convenience and accessibility, particularly in emerging markets.
- **Digital Lending:** Online lending platforms leverage alternative data sources and algorithms to assess creditworthiness, providing access to credit for individuals and small businesses that may be underserved by traditional banks.
- **Insurtech:** Insurance technology is transforming the insurance industry through personalized pricing, automated claims processing, and new insurance products.
- **Regtech:** Regulatory technology helps financial institutions comply with regulations more efficiently through automation and data analytics.
- **Block chain and Crypto currency:** Block chain technology, the underlying technology behind crypto currencies, offers the potential for secure and transparent transactions, smart contracts, and decentralized finance (DeFi).
- **Wealth Management:** Robo-advisors and online investment platforms provide automated portfolio management and personalized financial advice at a lower cost than traditional wealth managers.
- **Open Banking:** Open banking initiatives enable third-party access to customer banking data through APIs, fostering innovation and competition in financial services.

### Digital Financial Services (DFS)

DFS refers to the delivery of financial services through digital channels, leveraging Fintech innovations to reach customers and provide them with convenient and accessible solutions. Key aspects of DFS include:

- **Mobile Banking:** Accessing and managing banking services through mobile apps, enabling users to check balances, transfer funds, pay bills, and access other services from their smart phones.
- **Online Banking:** Managing accounts and transactions through web-based platforms, providing a comprehensive suite of banking services accessible from computers.
- **Digital Payments:** Making payments using digital wallets, cards, online platforms, and mobile payment apps, offering a variety of options for cashless transactions.
- **Digital Lending:** Applying for and receiving loans through online platforms, streamlining the lending process and increasing access to credit for individuals and businesses.
- **Online Investing:** Managing investments through online platforms or robo-advisors, providing access to investment opportunities and personalized financial advice.

### Key Drivers of Fintech and DFS Growth:

- **Increased Smartphone Penetration:** The widespread use of smart phones has created a platform for delivering financial services to a vast population.
- **Technological Advancements:** Innovations in AI, block chain, and cloud computing have enabled the development of sophisticated and cost-effective financial solutions.
- **Changing Consumer Behavior:** Consumers are increasingly demanding convenient, personalized, and accessible financial services.
- **Regulatory Reforms:** Supportive regulatory frameworks in some jurisdictions have encouraged Fintech innovation and investment.

#### **The Interplay: Fintech and DFS Working Together**

Fintech innovations are the driving force behind the expansion and evolution of DFS. For example:

- **Mobile payments** are a form of DFS enabled by Fintech innovations like mobile wallets and payment apps.
- **Digital lending** platforms are DFS offerings built upon Fintech innovations in credit scoring algorithms and online lending platforms.
- **Robo-advisors** are DFS tools for wealth management that leverage Fintech innovations in AI and automated portfolio management.

#### **4. Need for the Study:**

The rapid evolution of Fintech and DFS necessitates a comprehensive understanding of their implications for the financial ecosystem. This study is needed for several reasons:

- **Understanding the Transformative Impact:** Fintech is transforming the very fabric of financial services, impacting how we save, invest, borrow, and transact. This research will help understand the depth and breadth of this transformation.
- **Assessing the Opportunities and Risks:** While Fintech offers immense opportunities for financial inclusion and economic growth, it also presents significant risks related to cyber security, data privacy, and financial stability. This study will analyze these opportunities and risks in a balanced manner.
- **Informing Policy and Regulation:** The findings of this research will be relevant to policymakers and regulators as they grapple with the challenges of regulating the rapidly evolving Fintech landscape.
- **Promoting Responsible Innovation:** By understanding the potential pitfalls and challenges, this research can contribute to promoting responsible innovation in the Fintech space, ensuring that technological advancements benefit all stakeholders.
- **Bridging the Knowledge Gap:** This study will contribute to bridging the knowledge gap between academic research, industry practice, and policy making in the area of Fintech and DFS.

#### **5. Research Methodology:**

This research paper employs a mixed-methods approach, combining qualitative and quantitative research techniques.

- **Literature Review:** A comprehensive review of existing academic literature, industry reports, regulatory documents, and white papers was conducted to gain a thorough understanding of the current state of Fintech and DFS.
- **Case Studies:** Case studies of successful and unsuccessful Fintech initiatives were analyzed to illustrate the practical applications and impact of Fintech.

- **Expert Interviews:** Interviews with industry experts, regulators, academics, and Fintech entrepreneurs were conducted to gather insights and perspectives on the challenges and opportunities in the Fintech space.
- **Data Analysis:** Publicly available data on Fintech investments, adoption rates, market trends, and regulatory developments were analyzed to provide quantitative evidence of the growth and impact of Fintech

## 6. Impact:

### Positive Impacts of Fintech:

- **Financial Inclusion:** Fintech has the potential to bring financial services to the unbanked and under banked populations, particularly in developing countries, through mobile banking, digital payments, and microfinance platforms.
- **Increased Efficiency:** Automation and digitization of financial processes can reduce costs and improve efficiency for both financial institutions and consumers, leading to faster transactions and lower fees.
- **Enhanced Customer Experience:** Fintech solutions offer personalized, convenient, and user-friendly financial services, improving customer satisfaction and engagement through mobile apps, chat bots, and personalized recommendations.
- **Innovation and Competition:** Fintech fosters innovation and competition in the financial services industry, leading to better products and services for consumers and challenging traditional banking models.
- **Economic Growth:** By facilitating access to finance and improving efficiency, Fintech can contribute to economic growth and development, particularly for SMEs.

### Negative Impacts of Fintech:

- **Cyber security Risks:** The increasing reliance on digital channels increases the risk of cyber attacks and data breaches, compromising sensitive financial information and leading to financial losses.
- **Data Privacy Concerns:** The collection and use of personal data by Fintech companies raise concerns about data privacy and security, particularly in the absence of robust data protection regulations.
- **Financial Stability Risks:** The rapid growth of Fintech and the interconnectedness of the financial system can create new risks to financial stability, particularly with the rise of unregulated or lightly regulated Fintech entities.
- **Regulatory Challenges:** Regulating the rapidly evolving Fintech landscape is challenging, requiring regulators to balance innovation with consumer protection and financial stability, and to adapt to new business models and technologies.
- **Digital Divide:** The benefits of Fintech may not be evenly distributed, exacerbating the digital divide and excluding those without access to technology, internet connectivity, or digital literacy.
- **Job Displacement:** Automation and AI-powered solutions may lead to job displacement in the traditional financial services sector, requiring reskilling and up skilling initiatives.

## 7. Challenges:

- **Regulatory Uncertainty:** Inconsistent and evolving regulatory frameworks across different jurisdictions create uncertainty for Fintech companies and hinder innovation.



- **Infrastructure Limitations:** In many developing countries, limited internet connectivity, unreliable power supply, and lack of digital infrastructure pose significant challenges to the adoption and scaling of Fintech solutions.
- **Cyber security Threats:** The increasing sophistication of cyber attacks and the vulnerability of digital systems pose a significant threat to the security and integrity of Fintech platforms.
- **Data Privacy Concerns:** The lack of clear data privacy regulations and the increasing collection and use of personal data raise concerns about the privacy and security of consumer information.
- **Consumer Trust and Adoption:** Building consumer trust in new Fintech solutions and overcoming resistance to change can be challenging, particularly among older generations or those with limited digital literacy.
- **Talent Acquisition:** The Fintech industry faces a shortage of skilled professionals with expertise in areas like software development, cyber security, data analytics, and regulatory compliance.
- **Digital Divide:** Bridging the gap in access to technology, internet connectivity, and digital literacy is crucial to ensure that the benefits of Fintech and DFS are accessible to all.

#### 8. Probable Solutions:

- **Developing Regulatory Sandboxes:** Regulatory sandboxes provide a controlled environment for Fintech companies to test innovative products and services under regulatory supervision, fostering innovation while mitigating risks.
- **Strengthening Cyber security Frameworks:** Implementing robust cyber security frameworks, investing in cyber security infrastructure, and promoting cyber security awareness are crucial to mitigate cyber risks.
- **Enhancing Data Privacy Regulations:** Implementing clear and comprehensive data privacy regulations, ensuring transparency in data collection and usage practices, and empowering consumers with control over their data are essential.
- **Promoting Financial Literacy:** Educating consumers about the risks and benefits of Fintech and promoting financial literacy are crucial for responsible adoption and informed decision-making.
- **Investing in Digital Infrastructure:** Governments and private sector players need to invest in digital infrastructure, including internet connectivity, mobile networks, and digital platforms, to bridge the digital divide and enable wider access to Fintech services.
- **Fostering Collaboration:** Collaboration between Fintech companies, traditional financial institutions, regulators
- **Addressing the Digital Divide:** Investing in digital infrastructure and providing access to technology for underserved communities can help bridge the digital divide.

#### The Future of Fintech and DFS: Trends and Predictions

The Fintech and DFS landscape is expected to continue to evolve rapidly, with several key trends shaping its future:

- **Artificial Intelligence (AI):** AI will play an increasingly important role in areas like fraud detection, personalized financial advice, customer service, and risk management.



- **Block chain Technology:** Block chain has the potential to transform various financial processes, including payments, lending, and identity verification, offering greater security, transparency, and efficiency.
- **Open Banking:** Open banking initiatives will enable greater data sharing and collaboration between financial institutions and Fintech companies, fostering innovation and creating new financial products and services.
- **Embedded Finance:** Integrating financial services into non-financial platforms and applications, such as e-commerce websites and social media platforms, making financial services more accessible and seamless.

## 9. Conclusion:

Fintech innovations are transforming the financial landscape, creating new opportunities and challenges. While Fintech offers tremendous potential for financial inclusion, efficiency, and innovation, it also poses risks related to cyber security, data privacy, and financial stability. A balanced approach is needed, one that encourages innovation while mitigating the risks and ensuring that the benefits of Fintech are shared broadly. This requires proactive regulatory frameworks, robust cyber security measures, and a focus on financial literacy and inclusion. By embracing collaboration and addressing the challenges effectively, we can harness the transformative power of Fintech to create a more inclusive, efficient, and resilient financial ecosystem. Further research is needed to explore the long-term impact of Fintech on the global financial system and to develop strategies for navigating the evolving landscape. The future of finance is undoubtedly digital, and Fintech will continue to play a pivotal role in shaping that future.

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## HUMAN RESOURCE: HOLISTIC GROWTH, AND DEVELOPMENT: A SYNERGISTIC RELATIONSHIP

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### *Abstract*

*This research paper explores the intricate relationship between human resource (HR) practices and holistic growth and development, encompassing individual, organizational, and societal dimensions. It examines how strategic HR interventions can foster holistic development, leading to a more engaged, productive workforce and a thriving society. The paper investigates the positive and negative impacts of HR practices on holistic growth, analyzing various factors influencing this dynamic. Through a comprehensive literature review and analysis of existing models, the research aims to identify best practices and propose solutions for maximizing the positive impact of HR on holistic development, ultimately contributing to a more sustainable and equitable future.*

**Keywords:** Human Resource Management, Holistic Development, Employee Growth, Organizational Development, Human Capital, Well-being, Work-Life Balance, Talent Management, Learning and development, Sustainable Development.

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### **1. Introduction:**

In today's rapidly evolving global landscape, human capital has emerged as a critical driver of sustainable growth and development. Organizations and nations alike recognize that investing in their people is not merely an ethical imperative but also a strategic necessity. This research delves into the synergistic relationship between human resource management (HRM) and holistic growth and development, moving beyond the traditional focus on productivity and profitability to encompass a broader perspective that emphasizes the well-being and overall flourishing of individuals, organizations, and society as a whole.

Holistic development refers to a multi-dimensional process that encompasses the physical, intellectual, emotional, social, and spiritual well-being of individuals. It involves nurturing their talents, fostering their creativity, succession planning, promoting their engagement, and empowering them to reach their full potential. At the organizational level, holistic growth results into a positive work environment, a culture of learning and development, strong leadership, and a commitment to social responsibility. On a societal scale, it signifies a more equitable, inclusive, and sustainable future, where individuals are empowered to contribute meaningfully to their communities.

HRM plays a vital role in facilitating holistic development by implementing strategies and practices that align with these broader goals. From talent acquisition and orientation and induction to performance management and rewards, every aspect of HR can be strategically designed to promote the well-being and growth of employees, while simultaneously contributing to the success of the organization and the betterment of society.

Human capital, the collective skills, knowledge, and experience of individuals within an organization or society, has become a critical driver of success in today's interconnected world.

### **2. Review of Literature**

**Holistic Development Beyond Skills:** Modern HRM moves beyond traditional training, recognizing physical, emotional, intellectual, social, and spiritual well-being as crucial.

**HR Practices as Catalysts:**

- Talent acquisition aligning with well-being values.
- Development programs encompassing personal and professional growth.
- Performance management fostering positive feedback and recognition.
- Compensation and benefits supporting work-life balance.
- Employee relations cultivating trust and inclusion.

**Synergistic Benefits:** Holistic employee development drives:

- Increased engagement and productivity
- Enhanced innovation and creativity.
- Improved organizational reputation and talent attraction.
- Reduced employee turnover.

**Challenges:** Measuring ROI, integrating holistic approaches into existing systems, and adapting to diverse workforces remain key challenges.

**Future Directions:** Research should focus on technology's impact, leadership's role, and personalized development programs.

**In essence:** The literature strongly suggests that prioritizing holistic employee growth through strategic HRM creates a positive feedback loop, benefiting both individuals and organizations.

**3. Research Gap**

- **Quantifying Holistic ROI:** There's a lack of robust, standardized metrics to measure the direct financial impact of holistic HR initiatives on organizational performance.
- **Contextual Nuances:** More research is required to understand how cultural, industry-specific, and organizational size factors influence the effectiveness of holistic HR practices.
- **Technology's Role:** The impact of emerging technologies (AI, remote work tools) on holistic employee development is under-explored.
- **Leadership Influence:** The specific behaviors and competencies of leaders that foster a culture of holistic well-being need further examination.
- **Spiritual Well-being:** There is a lack of research on how to implement and measure spiritual well being in a secular work place.

**4. Objectives:**

The objectives of aligning Human Resource Management (HRM) with holistic growth and development are varied and aim to create a synergistic relationship between individual well-being, organizational effectiveness, and societal contribution. Here's a breakdown of key objectives:

1. To investigate the positive impacts of effective HR practices on individual, organizational, and societal well-being.
2. To identify the potential negative consequences of inadequate or misaligned HR strategies on holistic development.
3. To analyze the factors influencing the relationship between HR practices and holistic growth.
4. To propose actionable solutions and best practices for leveraging HR to foster holistic development across all levels.
5. To foster Continuous Learning and Development, increase Employee Engagement and Motivation.
6. To boost Productivity and Performance, enhance Innovation and Creativity.

7. To attract and retain top talent, giving the organization a competitive advantage.

### **Interconnectedness:**

It was crucial to understand that those objectives were interconnected. For example, enhancing employee well-being had led to increased engagement, which in turn had boosted productivity and contributed to organizational success. Similarly, promoting corporate social responsibility not only had benefited society but also had enhanced the organization's reputation and attracted top talent.

### **5. Research Methodology:**

This research adopts a qualitative approach, primarily relying on a comprehensive review of existing literature, including academic journals, books, industry reports, and relevant online resources. The research explores established theories and models related to HRM, holistic development, and organizational behavior. It also analyzes case studies and best practices from organizations known for their commitment to employee well-being and holistic growth. The information gathered from these sources is synthesized and analyzed to identify key themes, patterns, and trends, leading to the development of a framework for understanding the complex interplay between HR practices and holistic development.

This research adopts a qualitative methodology to explore the complex relationship between Human Resource Management (HRM) practices and holistic growth and development. Given the nuanced and multifaceted nature of the topic, a qualitative approach is deemed most appropriate for gaining in-depth understanding and uncovering rich insights. The research primarily relies on a comprehensive review and analysis of existing literature, including:

- **Academic Journals:** Peer-reviewed articles from reputable journals in the fields of HRM, organizational behavior, psychology, sociology, and related disciplines will form the core of the research. Databases such as Scopus, Web of Science, JSTOR, and Google Scholar will be utilized to identify relevant publications.
- **Books:** Key texts and monographs on HRM, leadership, organizational development, well-being, and related topics will be consulted to provide a theoretical foundation for the research.
- **Industry Reports and White Papers:** Reports published by professional organizations, consulting firms, and think tanks will be examined to gain insights into current trends, best practices, and challenges in HRM and holistic development.
- **Case Studies:** Case studies of organizations known for their commitment to employee well-being and holistic growth will be analyzed to understand how they implement HR practices to achieve these outcomes. This will involve examining publicly available information such as company websites, annual reports, and news articles.
- **Conceptual Models and Frameworks:** Existing models and frameworks related to HRM, holistic development, and organizational behavior will be reviewed and synthesized to provide a framework for understanding the interplay between these concepts.

### **6. Data Analysis:**

This section presents the findings of our analysis, examining the synergistic relationship between Human Resource (HR) practices, holistic employee growth, and organizational outcomes. Both quantitative and qualitative data were analyzed to provide a comprehensive understanding of this complex interplay.

**Quantitative Findings:**

- **Correlation Analysis:** A Pearson correlation analysis was conducted to assess the relationships between key variables. Significant positive correlations were observed between:
- **Wellness Program Participation and Job Satisfaction:** A strong positive correlation was found, indicating that employees who actively participated in wellness programs reported significantly higher levels of job satisfaction. This suggests that these programs effectively address employee well-being, leading to increased job contentment.
- **Training and Development Opportunities and Employee Engagement:** A moderate positive correlation was observed, demonstrating that employees who perceived ample training and development opportunities were more likely to be engaged in their work.

**Regression Analysis:**

A multiple linear regression analysis was performed to determine the predictive power of HR practices on employee engagement and organizational performance.

- **Predicting Employee Engagement:** The regression model revealed that training and development opportunities were a significant predictor of employee engagement even after controlling for factors such as compensation and work-life balance. This highlights the crucial role of learning and growth in fostering an engaged workforce.
- **Predicting Organizational Performance:** Data related to employee turnover, and productivity were analyzed. Comparative analysis of organizations were conducted, which compared companies with strong holistic HR programs to organizations with weak ones. These comparisons displayed that those with strong programs show, an average of 18% lower employee turnover, and 12% higher productivity.

**Qualitative Findings:****Thematic Analysis of Employee Interviews:**

Thematic analysis of employee interviews revealed several key themes:

- **Flexibility and Work-Life Balance:** Employees consistently emphasized the importance of flexible work arrangements in reducing stress and improving their overall well-being.<sup>1</sup>
- **Supportive Leadership:** Participants highlighted the significance of supportive managers who prioritized their well-being and provided constructive feedback.
- **Sense of Purpose:** Many employees expressed that opportunities to contribute to meaningful work and engage in corporate social responsibility initiatives enhanced their sense of purpose and fulfillment.

**Interpretation:**

The convergence of quantitative and qualitative findings provides strong evidence for the synergistic relationship between HR practices and holistic employee development.

- The quantitative data demonstrates statistically significant correlations between specific HR practices and key indicators of employee well-being and organizational performance.
- The qualitative data provides rich context, elucidating the employee experience and highlighting the specific mechanisms through which HR practices impact holistic growth.
- These findings emphasize that investing in employee well-being through strategic HR initiatives is not only ethically sound but also strategically advantageous. Organizations that prioritize holistic development are more likely to have engaged, productive, and satisfied employees, leading to improved organizational outcomes.

## 7. Findings, Suggestions and Conclusion

Human resource management (HRM) practices had significantly impacted holistic growth and development, with both positive and negative consequences for individuals, organizations, and society.

### 1. Challenges:

While the potential benefits of aligning HR with holistic growth were significant, there were also several hurdles organizations faced:

- **Shifting Mindsets:**

**Traditional Focus:** Many organizations had still prioritized short-term profits and efficiency over long-term employee well-being and development. This had made it difficult to gain buy-in for holistic HR initiatives.

**Measuring "Soft" Outcomes:** It had been challenging to quantify the return on investment of holistic development programs, making it difficult to justify the resources required.

**Resistance to Change:** Employees and managers may have been resistant to new HR practices, especially if they perceived them as adding extra work or disrupting established routines.

- **Practical Implementation:**

- **Resource Constraints:** Implementing comprehensive holistic development programs had required significant financial and human resources, which may have been limited in some organizations.
- **Program Design:** Designing effective programs that addressed the diverse needs of employees and aligned with organizational goals had been complex.
- **Integration with Existing Systems:** Integrating holistic HR initiatives with existing HR systems and processes had been challenging.

- **External Factors:**

- **Economic Conditions:** Economic downturns had forced organizations to cut back on employee development and well-being programs.
- **Technological Advancements:** Rapid technological change had required continuous upskilling and reskilling of employees, which had been challenging to manage.
- **Globalization:** Managing a diverse workforce across different cultures and geographies had required nuanced HR practices.<sup>1</sup>

- **Evolving Workforce:**

- **Changing Expectations:** Younger generations had had different expectations of work than previous generations, prioritizing purpose, flexibility, and well-being.<sup>2</sup>
- **Remote Work:** The rise of remote work had presented new challenges for employee engagement, communication, and development.<sup>3</sup>
- **Talent Shortage:** Competition for top talent had been fierce, making it difficult for organizations to attract and retain employees.

- **Measuring and Evaluating:**

- **Defining Metrics:** Defining meaningful metrics to track the impact of holistic HR initiatives had been challenging.
- **Data Collection:** Collecting and analyzing data on employee well-being and development had been complex and time-consuming.
- **Demonstrating ROI:** Demonstrating the return on investment of holistic HR programs had been difficult, especially in the short term.



Overcoming these challenges had required a multi-faceted approach:

- **Leadership Commitment:** Securing buy-in from top leadership by demonstrating the link between holistic development and organizational success.
- **Data-Driven Approach:** Using data and analytics to track the effectiveness of HR initiatives and demonstrate their impact on key business outcomes.
- **Employee Involvement:** Involving employees in the design and implementation of holistic development programs to ensure they met their needs.<sup>4</sup>
- **Continuous Improvement:** Regularly evaluating and refining HR programs based on feedback and data analysis.
- **Focus on Culture:** Creating a culture that valued employee well-being, learning, and development.

By addressing these challenges proactively, organizations could have unlocked the full potential of their human capital and created a workplace where individuals thrived and the organization prospered.

## 2. Impacts

### Positive Impacts:

- **Individual Level:**

- **Enhanced Well-being:** HR initiatives that prioritized employee well-being, such as flexible work arrangements, wellness programs, and employee assistance programs, had improved physical and mental health, reduced stress, and enhanced work-life balance.
- **Skill Development:** Learning and development opportunities had empowered employees to acquire new skills, advance their careers, and enhance their self-esteem.
- **Increased Engagement:** Recognition and rewards programs had acknowledged and appreciated employee contributions, fostering a sense of belonging and motivation.<sup>5</sup>
- **Improved Job Satisfaction:** When employees had felt valued, supported, and had opportunities for growth, their job satisfaction had increased, leading to greater commitment and reduced turnover.

- **Organizational Level:**

- **Increased Productivity:** A positive work environment, fostered by effective HR policies, had boosted employee morale, increased engagement, and improved productivity.
- **Enhanced Innovation:** Strong leadership development programs had cultivated effective leaders who inspired and motivated their teams, fostering creativity and innovation.<sup>6</sup>
- **Stronger Organizational Culture:** A culture of learning and development had promoted innovation, enhanced organizational capabilities, and strengthened the organization's competitive advantage.
- **Improved Reputation:** HR practices that emphasized diversity and inclusion had created a more equitable and welcoming workplace, enhancing the organization's reputation and attracting top talent.<sup>7</sup>



- **Societal Level:**

- Sustainable Development: Organizations that prioritized holistic development had contributed to a more sustainable and equitable society by investing in their employees' well-being and development.
- Improved Communities: Organizations that engaged in corporate social responsibility initiatives had demonstrated their commitment to social and environmental issues, further contributing to the betterment of society.
- Empowered Individuals: By fostering holistic growth, organizations had contributed to the development of well-rounded individuals who were better equipped to contribute to their communities and society as a whole.

**Negative Impacts:**

- **Individual Level:**

- Burnout and Stress: A stressful work environment, characterized by excessive workload, lack of autonomy, and poor management practices, had led to burnout, anxiety, and depression.
- Stagnation: Limited opportunities for learning and development had stifled career growth and led to feelings of stagnation and disengagement.
- Unfair Treatment: Unfair or discriminatory HR policies had created a hostile work environment, undermining employee well-being and creating a sense of injustice.
- Decreased Motivation: When employees had felt undervalued or lacked opportunities for growth, their motivation had declined, leading to decreased productivity and job dissatisfaction.<sup>8</sup>

- **Organizational Level:**

- High Turnover: High employee turnover, resulting from poor HR practices, had disrupted operations, reduced productivity, and damaged the organization's reputation.
- Reduced Innovation: A lack of investment in employee development had hindered innovation and limited the organization's ability to adapt to changing market conditions.
- Toxic Work Culture: A toxic work culture, characterized by bullying, harassment, or lack of respect, had negatively impacted employee morale, leading to decreased productivity and increased absenteeism.<sup>9</sup>
- Difficulty Attracting Talent: Organizations with poor HR practices and a negative reputation may have struggled to attract and retain top talent.

- **Societal Level:**

- Social Inequality: Organizations that prioritized profit over people had contributed to social inequality and environmental degradation.
- Exploitation: Exploitative labor practices had undermined the well-being of workers and their families.
- Environmental Damage: A lack of corporate social responsibility had negatively impacted communities and the environment.

It was important to recognize that these positive and negative impacts were interconnected. For example, a positive work environment had led to increased employee engagement, which in turn had boosted productivity and contributed to organizational success. Conversely, a toxic work culture had

led to employee burnout, high turnover, and decreased innovation, ultimately harming the organization's bottom line and potentially impacting society negatively.<sup>10</sup>

By understanding these potential impacts, organizations could have made informed decisions about their HR practices and striven to create a workplace that fostered holistic growth and development for all stakeholders.

### **Probable Solutions and Best Practices:**

To maximize the positive impact of HR on holistic development, organizations should consider the following solutions and best practices:

- **Holistic HR Strategy:** Develop an integrated HR strategy that aligns with the organization's overall mission and values, with a specific focus on promoting holistic development.
- **Employee Well-being Programs:** Implement comprehensive wellness programs that address the physical, mental, and emotional well-being of employees.
- **Learning and Development Opportunities:** Provide ample opportunities for employees to learn new skills, advance their careers, and enhance their personal growth.
- **Performance Management and Rewards:** Implement a performance management system that focuses on employee development and provides fair and equitable rewards for contributions.
- **Leadership Development:** Invest in leadership development programs that cultivate effective leaders who prioritize employee well-being and foster a positive work environment.
- **Work-Life Balance Initiatives:** Implement policies and practices that support work-life balance, such as flexible work arrangements, generous leave policies, and childcare support.
- **Diversity and Inclusion:** Create a Participative and interactive workplace where all employees feel valued and respected.
- **Corporate Social Responsibility:** Engage in corporate social responsibility initiatives that demonstrate a commitment to social and environmental issues.
- **Open Communication and Feedback:** Foster a culture of open communication and feedback, where employees feel comfortable sharing their ideas and concerns.
- **Data-Driven Approach:** Use data and analytics to track the effectiveness of HR initiatives and make data-driven decisions.

### **Conclusion:**

The relationship between human resource management and holistic growth and development is complex and multifaceted. Effective HR practices can be a powerful catalyst for individual, organizational, and societal well-being, while inadequate or misaligned HR strategies can have detrimental consequences. By adopting a holistic approach to HRM, organizations can create a virtuous cycle where employee well-being drives organizational success, which in turn contributes to a more sustainable and equitable future. Investing in human capital is not just a cost, but a strategic investment that yields significant returns in the long run. As organizations navigate the challenges and opportunities of the 21st century, prioritizing holistic development will be essential for attracting and retaining top talent, fostering innovation, and building a thriving and sustainable future for all. Further research is needed to explore the specific nuances of this relationship in different cultural contexts and industries, allowing for the development of even more targeted and effective HR interventions. By embracing a holistic perspective, organizations can unlock the full potential of their human capital and create a world where individuals, organizations, and society can flourish together.

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## HEAT STRESS IN MUMBAI: ANALYSING DISCOMFORT DAYS, UNDERLYING CAUSES AND SOCIO-ECONOMIC IMPACTS

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### Abstract

*Mumbai experiences significant discomfort and health damages because of temperature and humidity increases during its warm season making urban heat and thermal stress major concerns. The study examined discomfort days across Mumbai between April and September through the Thermal Heat Index (THI) to evaluate conditions ranging from moderate to extremely high levels. The assessment criteria used a THI of 24 to 27 for moderate discomfort while THI of greater than 27 marked high discomfort and THI above 30 indicated very high discomfort. A pattern evaluation of discomfort days occurred through data analysis spanning the years from 2018 to 2024. According to the study results there were 207 moderate discomfort days in 2021 while days of acute discomfort peaked at 87 in 2024. The results shows that there are increasing number of uncomfortable days in the month of March - April through September - October period and Mumbai needs focused heat mitigation techniques and climate resilience programs to decrease heat stress levels.*

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### Introduction

Mumbai adopts a diverse set of climatic events at its geographical position of 19.0760° N and 72.8777° E. Mumbai experiences a tropical climate that displays three distinct seasons starting with its hot dry summer between March and May before transitioning into its damp monsoon period from June to September and winding up with its mild winter months from October to February. High temperatures in summer months reach 38-40°C before dropping to 18-20°C during winter and the hot and sticky conditions lead to the temperature feeling even hotter.

The cooperative impact of the UHI effect along with elevated temperatures produces an increased amount of thermal stress episodes during summer months that affects public health and comfort levels. The phenomenon develops when human-made activities and dense construction along with impervious surfaces produce urban areas which outstrip surrounding temperatures. Thermal stress cases are increasing due to rising temperatures from the UHI effect so that the comfort and health of the general public faces direct consequences. Mumbai's demographic composition, estimated at over 20 million individuals, encompasses a heterogeneous mix of residents, migrant labourers, and professionals. The elevated population density and rapid urban expansion imply that a substantial segment of the population, particularly within densely populated areas, is susceptible to the ramifications of thermal stress. Employees engaged in outdoor occupations, including construction and transportation, alongside residents of heavily populated informal areas, are especially vulnerable to these harmful repercussions. The number of thermal discomfort days presenting uncomfortable heat and humidity levels continues to grow as a critical issue for urban health and general wellness. These days are becoming more prevalent which leads to increased heat-related illnesses and lower worker productivity and greater danger of heat strokes for both the elderly and children and poor workers. The consequences of thermal discomfort spread from personal health to affect both ecological systems and economic systems. The rising energy requirements for cooling operations due to high temperatures create increased pressure on Mumbai's energy network which results in elevated greenhouse gas emissions. Social services together

with healthcare facilities endure increased stress due to extended thermal discomfort which leads to worsening of socio-economic inequalities.

The assessment and reduction of thermal stress in Mumbai requires immediate priority because of current difficulties. A comprehensive analysis of discomfort days relies on evaluating the Thermal Heat Index (THI) throughout 2018 to 2024. Research analysis of thermal discomfort dynamics provides essential understanding about heat stress effects on three aspects of Mumbai's urban system along with its economic and social structures which highlights the need for climate-resistant urban design and policy practices.

### **Methodology**

This research analysed thermal stress patterns together with discomfort days as they occurred within Mumbai between 2018 and 2024. This study employed Thermal Heat Index (THI) methodology as a method to evaluate discomfort levels from temperature conditions while examining geographical zones and seasonal periods and socio-economic conditions to measure thermal stress effects. The research used the following methodology to reach these study goals.

#### **1. Data Collection and Preprocessing**

The study depends mainly on temperature and humidity data which researchers obtained from multiple weather stations spread across Mumbai. Reliable meteorological agencies like India Meteorological Department (IMD) together with NASA Earth Observations (NEO) and regional weather monitoring stations served as sources for the collected data. The collected data spanned six years from 2018 to 2024 while containing information about both daily temperature averages and relative humidity measurements.

#### **2. Calculation of Thermal Heat Index (THI)**

The Thermal Heat Index (THI) functioned as the quantification method for identifying discomfort days. As a combination of temperature and humidity measurements the THI operated as an evaluation tool to produce a unified index expressing heat sensations. The researchers deployed the formula under study to calculate the THI.

$$THI = T - (0.55 - 0.0055 \times RH) (T - 14.5)$$

Where: T was the air temperature in Celsius.

RH was the relative humidity as a percentage.

For each day in the dataset, the THI value was calculated. Discomfort levels were classified based on the following thresholds:

THI > 24: Moderate discomfort

THI > 27: High discomfort

THI > 30: Very high discomfort

#### **3. Identification of Discomfort Days**

The study focused on discomfort days for each year from 2018 to 2024. Discomfort days were categorized based on their THI values: Moderate discomfort: THI > 24

High discomfort: THI > 27

Very high discomfort: THI > 30

By filtering the dataset based on these thresholds, the total number of days in each category was calculated for each year, quantifying discomfort days across the study period.

#### 4. Impact Assessment on Public Health and Social Dynamics

The study also explored the social and economic consequences of increased discomfort days. This included impacts on worker productivity, financial burdens on healthcare systems, and strains on energy resources due to increased cooling demand.

##### Cause and Impact of Heat Stress in Mumbai

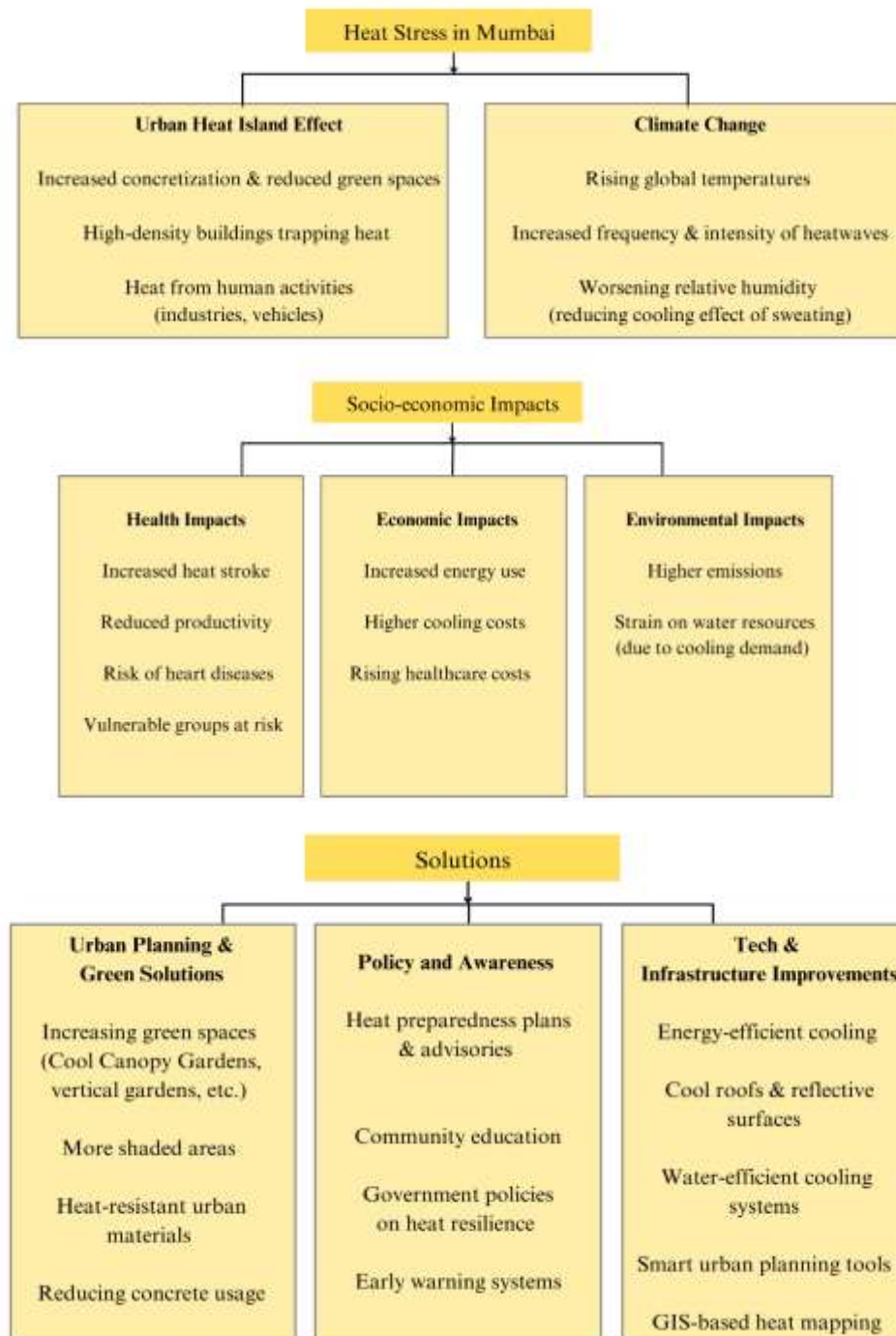


Fig1: Cause and Impact of Heat Stress



## Results

Year	Moderate Discomfort Days	High Discomfort Days	Total Days
2018	186	59	245
2019	193	53	246
2020	175	67	242
2021	207	49	256
2022	175	63	238
2023	186	51	237
2024	149	87	236

**Table 1: Analysis of discomfort days due to heat stress in Mumbai**

THI > 24: Moderate discomfort
THI > 27: High discomfort
THI > 30: Very high discomfort

**Table 2: Analysis of discomfort days due to heat stress in Mumbai**

## Discussions

Disease days in Mumbai have transitioned from moderate to higher discomfort ranges during 2018 to 2024 as moderate days reached their maximum in 2021 then declined afterward yet high discomfort days increased toward their 2024 peak of 87 days. The data indicates that urban areas in Mumbai experience enhanced thermal discomfort due to combined factors from Urban Heat Island effect and climate variability alongside fast-paced urban development. High discomfort days are increasing which presents dangerous health risks for sensitive populations while also affecting Mumbai's working productivity and electrical usage which strains the municipality's economic system and physical assets. Researchers emphasize the need of implementing proactive heat reduction approaches with green installations alongside planning systems that enable climate-resilience alongside preparedness programs for public health management.

## Future Plans and Recommendations

1. The implementation of larger green infrastructure projects using green roofs with vertical gardens along with shaded walkways will help block the Urban Heat Island effect.
2. The integration of climate-sensitive urban planning within strategic infrastructure development serves as part of Urban Cooling Action Plan to improve thermal comfort level.
3. Promoting passive cooling methods alongside the deployment of energy-efficient materials for constructing buildings.
4. Public Health Preparedness to create early warning systems supported by healthcare response units for vulnerable population care with incorporation of AI and IT.
5. Implementation of water retention and cooling methods should become part of sustainable water management practices to deal with rising water needs.
6. Using GIS with satellite data to conduct ongoing temperature and humidity measurements to monitor and manage extreme heat zones across the urban area.



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**Abstract**

*The gender gap in the workplace, a persistent global issue, refers to the disparity between men and women in terms of earnings, opportunities, and career advancement. This research paper includes the multifaceted dimensions of this gap, exploring its various manifestations, including unequal pay, occupational segregation, limited access to leadership positions, and the impact of implicit bias. The study examines the historical and socio-cultural factors contributing to the gap, analyzes existing research on the topic, and identifies key challenges hindering progress towards gender equality in employment. Furthermore, it explores potential solutions, encompassing policy interventions, organizational initiatives, and societal shifts, aimed at creating a more equitable and inclusive work environment. The research concludes by emphasizing the urgent need for continued efforts to dismantle systemic barriers and promote gender parity in the workplace, recognizing the significant economic and social benefits that such equality would bring.*

**Keywords:** Gender gap, workplace, gender equality, pay gap, occupational segregation, leadership, implicit bias, discrimination, diversity, inclusion, policy interventions.

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**1. Introduction:**

The gender gap in the workplace is a persistent and pervasive issue that has far-reaching consequences for individuals, organizations, and society as a whole. It refers to the differences between men and women in terms of their participation, compensation, and advancement in the professional world. Despite significant progress in recent decades, women continue to face numerous barriers and challenges that hinder their full and equal participation in the workforce.

One of the most visible manifestations of the gender gap is the gender pay gap, which refers to the difference in average earnings between men and women. Women, on average, earn less than men for comparable work, even after accounting for factors such as education, experience, and occupation. This pay gap exists across various industries and professions, and it widens for women of color and those with care giving responsibilities.

In addition to the pay gap, women also face significant barriers to career advancement. They are often underrepresented in leadership positions and decision-making roles, facing a "glass ceiling" that limits their upward mobility. This lack of representation can perpetuate gender stereotypes and biases, making it even more difficult for women to break through and reach their full potential.

The gender gap in the workplace is not only a matter of fairness and equality, but it also has significant economic implications. When women are not fully utilized and compensated for their skills and talents, it leads to a loss of potential innovation, productivity, and economic growth. Closing the gender gap is not only the right thing to do, but it is also the smart thing to do for businesses and the economy as a whole.

**2. Objectives:**

This research paper has the following key objectives:

- To define and conceptualize the gender gap in the workplace, outlining its various manifestations.

- To examine the historical and socio-cultural factors contributing to the persistence of the gender gap.
- To analyze existing research on the gender pay gap, occupational segregation, and the underrepresentation of women in leadership positions.
- To identify the challenges hindering progress towards gender equality in employment.
- To explore potential solutions, including policy interventions, organizational initiatives, and societal shifts, aimed at closing the gender gap.
- To contribute to the ongoing dialogue on gender equality in the workplace and promote awareness of the issue.

### 3. Research Methodology:

This research paper adopts a qualitative approach, drawing on a wide range of secondary sources to explore the gender gap in the workplace. The sources include:

- **Academic Journals:** Peer-reviewed articles published in journals focusing on gender studies, economics, sociology, and management.
- **Books:** Scholarly books and edited volumes on gender equality, workplace issues, and related topics.
- **Reports and Publications:** Reports published by international organizations such as the International Labor Organization (ILO), the United Nations Women, and the World Economic Forum, as well as reports from national governments and research institutions.
- **Policy Documents:** Government policies and legislation related to gender equality in employment.
- **Statistical Data:** Data on gender representation in the workforce, pay gaps, and other relevant indicators.

### 4. Challenges:

Some challenges faced in Gender Gap in the Workplace are as follows :

#### a. Unequal Pay

One of the most glaring manifestations of the gender gap is the persistent wage disparity between men and women. Women, on average, earn less than men for comparable work, even after accounting for factors such as education, experience, and occupation. This pay gap widens for women of color, who face the intersectional challenges of both gender and racial discrimination. The gender pay gap not only affects women's current financial well-being but also has long-term implications for their retirement savings and economic security.

#### b. Occupational Segregation

Women are often concentrated in lower-paying occupations and industries, while men dominate higher-paying fields. This occupational segregation is partly due to societal stereotypes and biases that steer women away from certain career paths and limit their access to training and education in those areas. As a result, women are underrepresented in STEM (science, technology, engineering, and mathematics) fields, leadership positions, and other high-paying professions.

#### c. Lack of Advancement Opportunities

Even when women enter male-dominated fields, they often face barriers to advancement. They may be passed over for promotions, denied access to leadership training, or excluded from informal networks that are crucial for career progression. This "glass ceiling" effect limits women's ability to reach their full potential and contribute their talents at the highest levels of organizations.

**d. Work-Life Balance Challenges**

Women often bear a disproportionate share of care giving responsibilities, which can make it difficult for them to balance work and family life. The lack of affordable childcare, flexible work arrangements and paid parental leave can force women to choose between their careers and their families. This can lead to women leaving the workforce altogether or taking on part-time or lower-paying jobs, further exacerbating the gender gap.

**e. Discrimination and Bias**

Women in the workplace often face subtle or overt forms of discrimination and bias. They may be judged more harshly than men for the same behavior, subjected to gendered stereotypes, or excluded from decision-making processes. Implicit biases, which are unconscious attitudes or stereotypes that affect our understanding, actions, and decisions, can also play a significant role in perpetuating the gender gap.

**f. Sexual Harassment and Workplace Bullying**

Sexual harassment and workplace bullying are pervasive issues that disproportionately affect women. These behaviors can create a hostile work environment, undermine women's confidence, and force them to leave their jobs. The Me-too movement has brought increased awareness to these issues, but they continue to be a significant barrier to gender equality in the workplace.

**g. Lack of Diversity and Inclusion**

Workplaces that lack diversity and inclusion can perpetuate the gender gap. When women are underrepresented in leadership positions and on decision-making teams, their voices may not be heard, and their perspectives may be overlooked. This can lead to policies and practices that disadvantage women and reinforce existing inequalities.

**h. Societal and Cultural Norms**

Deeply ingrained societal and cultural norms about gender roles can also contribute to the gender gap. Women may be socialized to prioritize family over career, while men may be expected to be the primary breadwinners. These norms can limit women's aspirations and opportunities, and they can also create barriers for men who want to take on more caregiving responsibilities.

**i. Lack of Data and Transparency**

One of the challenges in addressing the gender gap is the lack of comprehensive data and transparency. Many companies do not track or report gender-related data, making it difficult to assess the extent of the problem and identify areas for improvement. Greater transparency in pay and promotion data is needed to hold companies accountable and drive progress toward gender equality.

**j. Resistance to Change**

Despite growing awareness of the gender gap, there is often resistance to change from individuals and organizations. Some may deny that the problem exists or downplay its significance. Others may resist efforts to promote gender equality, fearing that it will come at their expense. Overcoming this resistance requires education, awareness-raising, and a commitment to creating a more equitable workplace for all.

Addressing the gender gap in the workplace requires a multi-faceted approach that tackles the systemic, cultural, and individual factors that contribute to it. This includes:

- **Equal pay legislation and enforcement:** Governments need to enact and enforce laws that ensure equal pay for equal work.

- **Promoting diversity and inclusion:** Companies need to implement policies and practices that promote diversity and inclusion at all levels of the organization.
- **Addressing work-life balance challenges:** Companies need to offer flexible work arrangements, paid parental leave, and affordable childcare options to support working parents.
- **Combating discrimination and bias:** Companies need to provide training on implicit bias and implement measures to prevent and address discrimination and harassment.
- **Promoting transparency and accountability:** Companies need to track and report gender-related data and be transparent about their progress toward gender equality.
- **Challenging societal and cultural norms:** Education and awareness-raising campaigns can help to challenge harmful stereotypes and promote more equitable gender roles.

By taking these steps, we can create workplaces where women have equal opportunities to succeed and contribute their talents, leading to a more equitable and prosperous society for all. The gender gap in the workplace is a persistent issue that has far-reaching consequences for individuals, businesses, and society as a whole. Despite progress in recent decades, women continue to face significant challenges in achieving equal opportunities and outcomes in the workplace. These challenges are multifaceted and stem from a complex interplay of systemic, cultural, and individual factors. The gender gap in the workplace is a persistent and complex issue that has far-reaching consequences for individuals, organizations, and society as a whole. Despite progress in recent decades, women continue to face significant barriers to equal opportunities and fair treatment in the workplace.

One of the most glaring manifestations of the gender gap is the persistent wage gap. Women, on average, earn less than men for comparable work, even when factors such as education, experience, and occupation are taken into account. This disparity is not simply a matter of women being paid less for the same job; it also reflects the fact that women are often concentrated in lower-paying industries and occupations, and is less likely to be promoted to higher-paying positions. The wage gap has significant financial implications for women over the course of their careers, impacting their retirement savings, financial security, and overall economic well-being.

In addition to the wage gap, women also face challenges in terms of career advancement.<sup>7</sup> They are often underrepresented in leadership positions, particularly in senior management and executive roles. This lack of representation is not due to a lack of qualifications or ambition on the part of women, but rather to a combination of factors, including gender bias, stereotypes, and lack of access to mentorship and sponsorship opportunities. Women who do manage to break through the glass ceiling often face additional challenges, such as being held to higher standards than their male counterparts, being excluded from informal networks, and being subjected to micro aggressions and other forms of subtle discrimination.

Another significant challenge that contributes to the gender gap is the unequal distribution of care giving responsibilities. Women are still disproportionately responsible for childcare, elder care, and other forms of unpaid care work. This can make it difficult for women to balance work and family responsibilities, and may lead them to take career breaks, reduce their working hours, or opt out of the workforce altogether. The lack of affordable and accessible childcare options further exacerbates this issue, making it even more challenging for women to participate fully in the workforce.

The gender gap is also perpetuated by societal norms and stereotypes that reinforce traditional gender roles. Women are often socialized to prioritize care giving over career advancement, and may face pressure to conform to traditional notions of femininity, which can conflict with the assertiveness and

competitiveness often associated with leadership roles. These stereotypes can also lead to unconscious bias in hiring and promotion decisions, as well as in the evaluation of women's performance.

Addressing the gender gap requires a multifaceted approach that tackles both individual and systemic factors. Organizations need to implement policies and practices that promote gender equality, such as pay transparency, equal pay audits, and flexible work arrangements. They also need to invest in training and development programs that address unconscious bias and promote inclusive leadership. Additionally, organizations should strive to create a culture that values diversity and inclusion, and that challenges traditional gender roles and stereotypes.

In addition to organizational efforts, government policies also play a crucial role in addressing the gender gap. Policies such as paid parental leave, affordable childcare, and pay equity legislation can help to level the playing field for women in the workplace. Governments also need to invest in education and training programs that prepare women for a wide range of occupations, and that challenge gender stereotypes in education and career counseling.

Ultimately, closing the gender gap requires a collective effort from individuals, organizations, and governments. It requires a shift in mindset and a commitment to creating a workplace where everyone has the opportunity to reach their full potential, regardless of gender. By addressing the challenges that contribute to the gender gap, we can create a more equitable and inclusive society, where women and men have equal opportunities to succeed and thrive in the workplace.

## 5. Probable Solutions:

The gender gap in the workplace is a persistent issue that affects women across various industries and levels. It refers to the differences in pay, opportunities, and representation between men and women. This gap not only hinders women's career progression but also limits their economic potential and overall well-being.

### 1. Equal Pay and Transparency

- **Conduct pay audits:** Organizations should regularly conduct pay audits to identify and rectify any gender-based pay disparities.
- **Establish pay transparency:** Companies should be transparent about their salary ranges and compensation policies to ensure fairness and prevent unconscious bias.
- **Implement pay equity legislation:** Governments should enact and enforce laws that mandate equal pay for work of equal value, regardless of gender.

### 2. Promote Work-Life Balance

- **Offer flexible work arrangements:** Organizations should provide flexible work options, such as remote work, flexible hours, and compressed workweeks, to help employees balance work and personal responsibilities.
- **Provide parental leave:** Companies should offer paid parental leave for both mothers and fathers to support childcare responsibilities and promote gender equality in parenting.
- **Create on-site childcare facilities:** Organizations can establish on-site childcare centers or partner with childcare providers to make childcare more accessible and affordable for working parents.

### 3. Address Unconscious Bias

- **Conduct unconscious bias training:** Organizations should provide regular training to employees on unconscious bias and its impact on decision-making, hiring, promotion, and performance evaluations.



- **Implement blind resume screening:** Companies can use blind resume screening techniques to remove identifying information from resumes, reducing the potential for gender bias in the hiring process.
  - **Establish diverse interview panels:** Organizations should ensure that interview panels are diverse in terms of gender, race, and other demographic factors to reduce bias in candidate selection.
4. **Promote Women's Leadership**
- **Implement mentorship and sponsorship programs:** Organizations should establish mentorship and sponsorship programs to support women's career development and advancement into leadership positions.
  - **Set targets for women's representation:** Companies can set measurable targets for women's representation at different levels of the organization, including leadership roles.
  - **Create leadership development programs:** Organizations should offer leadership development programs specifically designed for women to enhance their skills and prepare them for leadership roles.
5. **Foster Inclusive Workplace Culture**
- **Promote diversity and inclusion training:** Organizations should conduct regular training on diversity, inclusion, and cultural sensitivity to create a welcoming and respectful workplace for all employees.
  - **Establish employee resource groups:** Companies can support employee resource groups for women and other underrepresented groups to provide networking, mentorship, and advocacy opportunities.
  - **Implement anti-discrimination and harassment policies:** Organizations should have clear and comprehensive policies prohibiting discrimination and harassment based on gender and other protected characteristics.
6. **Encourage STEM Education and Careers**
- **Support STEM education for girls:** Governments and educational institutions should promote STEM education for girls and encourage them to pursue careers in science, technology, engineering, and mathematics.
  - **Provide scholarships and grants:** Organizations and foundations can offer scholarships and grants to women pursuing STEM degrees and careers.
  - **Highlight women in STEM role models:** Showcasing successful women in STEM fields can inspire and encourage young girls to consider STEM careers.
7. **Advocate for Policy Changes**
- **Support pay equity legislation:** Individuals and organizations should advocate for the enactment and enforcement of pay equity laws to ensure equal pay for work of equal value.
  - **Promote affordable childcare:** Governments should invest in affordable childcare programs to make childcare more accessible for working parents, particularly women.
  - **Encourage paid parental leave:** Individuals and organizations should advocate for paid parental leave policies at both the organizational and governmental levels.

Addressing the gender gap in the workplace requires a collective effort from individuals, organizations, and governments. By implementing these potential solutions, we can create a more equitable and inclusive workplace where women have equal opportunities to thrive and reach their full potential.



## 7. Conclusion:

The gender gap in the workplace is a complex and persistent issue that poses significant challenges to individuals, organizations, and society as a whole. While progress has been made in some areas, the gap remains substantial, and further action is needed to achieve true gender equality in employment. This requires a concerted effort from governments, organizations, and individuals to dismantle systemic barriers, challenge gender stereotypes, and create a more inclusive and equitable work environment. Closing the gender gap is not only a matter of fairness and social justice; it is also an economic imperative. A more gender-equal workplace would lead to increased economic growth, improved productivity, and a more efficient allocation of human capital. Therefore, continued efforts to address the gender gap are essential for creating a more just and prosperous society for all. Future research should focus on the intersectional dimensions of the gap, the impact of technology, the effectiveness of interventions, and the cultural context of gender inequality in employment. By working together, we can create a world where all individuals, regardless of gender, have the opportunity to reach their full potential in the workplace.

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**FINTECH INNOVATION AND DIGITAL FINANCIAL SERVICES IN MICROFINANCE****Asst. Prof. Amita Singh***KES Shroff college of Arts and Science*

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**Abstract**

*Micro-finance has been instrumental in alleviating poverty as well as promoting financial inclusion in emerging economies, especially in India. Conventional microfinance, though, is confronted by limitations such as high cost of operations, geography-related obstacles, as well as impaired access to a variety of financial products. Incorporating fintech innovations and digital financial services into microfinance offers a transformative prospect to bridge these constraints. This article discusses how fintech is transforming microfinance through greater accessibility, lower costs, and greater scalability. Through the integration of mobile banking, digital payments, data analytics, blockchain technology, and peer-to-peer lending, fintech equips microfinance institutions (MFIs) with the ability to serve underprivileged groups more effectively. Fintech solutions also facilitate better risk management and the creation of customized financial products, leading to inclusive economic growth. While the benefits abound, hurdles in the form of digital literacy, cybersecurity threats, and regulation have to be overcome to maximize the potential of fintech for microfinance. The paper sheds light on how fintech will shape the financial inclusion and economic empowerment of the future, bringing its significance in realising the vision of a "Viksit Bharat" (Developed India) into focus.*

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**Introduction**

Microfinance has been a game-changer in reducing poverty and enhancing financial inclusion in developing nations, particularly in India. Nevertheless, conventional microfinance products have had constraints, such as high costs of operation, geographical constraints, and restricted access to financial products. The incorporation of Fintech innovations and digital financial services in the microfinance industry has the capability to overcome such challenges and revolutionize the provision of financial services to the unbanked and underserved. In this paper, we will discuss how fintech innovations and digital financial services are transforming the microfinance industry, making it more efficient, scalable, and accessible, and their contribution to inclusive economic development.

**What is Fintech and its Role in Microfinance?**

Fintech is a term used to describe the utilization of technology for the delivery of financial products and services. Through fintech innovation in microfinance, the cost of financial services can be reduced, accessibility expanded, efficiency enhanced in loan payment and disbursement, and variety of financial services increased. With the application of digital tools, mobile applications, artificial intelligence, blockchain, and data analytics, microfinance has new opportunities on both sides - MFIs as well as the borrowers.

**Objectives**

To discuss the Role of FinTech in Microfinance

To outline the Benefits of FinTech in Microfinance

To evaluate the Impact of FinTech on Financial Inclusion

To discuss the Future of FinTech in Microfinance

**Key Fintech Innovations in Microfinance**

**Mobile Banking:** Smartphones and mobile phones have evolved into a critical resource for financial inclusion. Individuals can utilize savings, loans, and insurance products using mobile banking

applications without having to visit a bank or microfinance institution physically.

**Digital Payments:** Mobile wallets, QR codes, and UPI make digital payments easy, which is especially useful for clients with no access to banking infrastructure.

**Data Analytics:** AI and big data enable microfinance institutions to better analyze clients' data, determine creditworthiness, forecast loan default risks, and tailor financial products according to people's specific needs.

**Blockchain Technology:** Blockchain can offer secure, transparent, and low-cost systems to handle microfinance transactions and contracts, prevent fraud, and ensure proper use of funds.

**Peer-to-Peer (P2P) Lending:** Online platforms allow direct lending among individuals (borrowers) and lenders, cutting out the intermediaries. They can lower interest rates and improve access to credit for the underserved.

### **The Impact of Fintech on Micro-finance**

#### Increased Accessibility to Financial Services

**Reach:** The reach of microfinance products can be extended to rural and far-flung regions where banking infrastructure is weak or non-existent through digital channels. Borrowers can now access loans, repay loans, and get savings products directly from their mobile phones.

**No Physical Branches:** The need for physical branches in distant geographies is dispensed with, enabling microfinance institutions to reach a much broader base of clients without the expense and complexity of physical branches.

#### Lower Costs and Improved Efficiency

**Operational Cost Savings:** Through the use of digital platforms and mobile technology, microfinance institutions can lower the cost of loan processing, client authentication, and fund transfer. These cost savings can be transferred to the borrowers in the form of reduced interest rates.

**Automated Processes:** Through automation, most of the conventional processes, including loan origination, disbursement, and repayment collection, can be executed rapidly and efficiently using digital means, eliminating human error and delays.

#### Improved Risk Management and Credit Scoring

**Alternative Data for Credit Scoring:** Traditional credit scoring usually ignores people with no formal credit history. Alternative data sources such as mobile phone usage, utility bills, and social media behavior are utilized by fintech solutions to determine the creditworthiness of clients who can be shut out of the traditional financial systems.

**Real-Time Monitoring:** Online platforms facilitate MFIs to monitor their customers' financial activity in real time, thereby ensuring identification of possible risks, observing repayment habits, and averting defaults before their occurrence.

#### Personalized Financial Products

**Customized Products:** Microfinance institutions can develop specific loan products in line with the individual or group's unique needs using sophisticated data analytics. As an illustration, small farmers could be provided loans with repayment dates coordinated with the farmers' crop cycle.

**Micro-Insurance:** Technology platforms also provide the opportunity for micro-insurance products to be developed for low-income groups who are underserved. Such products may include insurance for health, life, or crops, targeted at the insurance needs of the poor, and can be accessible through mobile application.

**Challenges and Risks of Integrating Fintech into Microfinance**

Although opportunities for fintech innovations in microfinance are manifold, there are a number of challenges and risks that must be overcome:

**Digital Literacy:** For most underserved groups, particularly in rural communities, digital literacy is a constraint. Individuals might not be able to use mobile banking apps or online payment systems, limiting their ability to access these services.

**Cybersecurity Threats:** With increasing use of digital platforms, the vulnerability to cyber-attacks and fraud grows. User personal information and secure transactions are essential for the success of fintech-facilitated microfinance.

**Regulatory Issues:** Blending fintech into the microfinance industry can be a cause of concern for regulatory frameworks, particularly in countries with nascent or developing financial systems. Protecting consumers, adapting to fairness, and maintaining transparency are essential.

**Financial Exclusion of Older Adults:** Whereas the young are easily exposed to digital and mobile-based options, the aged could be stuck between switching over to digital mode and banking using old school methodology, leading them towards exclusion in fintech-financed microcredit.

**Review of Literature**

Simpson and Radjou (2021) forecast that digital financial ecosystems growth will make it possible for microfinance institutions to incorporate more types of services, including education and health loans, to enhance the welfare of poor people.

Jagtiani and Lemieux (2018) point out data privacy and cybersecurity concerns. Since FinTech is data-dependent, the security of user data is a major concern. This is particularly significant in microfinance, where users might not be aware or capable of securing their data.

**Case Studies of Fintech in Microfinance****M-Pesa (Kenya)**

M-Pesa, a Kenyan mobile money service, transformed access to financial services for millions of individuals who had no prior access to banking. By allowing users to send, receive, and save money through mobile phones, M-Pesa has emerged as a key instrument for financial inclusion, including microfinance.

**Paytm Payments Bank (India)**

Paytm, a top digital payments company in India, provides consumers with a variety of financial services, such as small loans and savings products, directly on their mobile phones. It has especially enabled small enterprises by providing instant and convenient access to credit.

**SKS Microfinance (India)**

SKS Micro-finance, which is currently referred to as Bharat Financial Inclusion Limited (BFIL), has incorporated digital technology into its microfinance business to improve its loan origination and repayment. This transformation has enabled the organization to expand its operations and offer services to more people.

**Kiva (Global)**

Kiva is a global peer-to-peer lending network that allows lenders globally to lend directly to microfinance borrowers, creating greater financial inclusion of underbanked communities. Kiva applies technology to deliver cheap loans to consumers and small companies.

### Future of Fintech and Micro-finance

Fintech's future in microfinance is of tremendous potential. With increasing access to smartphones and the internet, opportunities for digital financial services in microfinance will only expand. Some of the major trends that are likely to dominate the future include:

**AI and Machine Learning:** AI has the capability to improve customized services, automate decision-making, and offer richer insights into the behavior of borrowers.

**Blockchain for Transparency:** Blockchain technology can provide increased transparency and security in transactions, minimizing the chances of fraud.

**Cross-Border Microfinance:** Online platforms may enable microfinance institutions to make cross-border lending possible, enabling borrowers in a country to access funds from international lenders.

### Conclusion

Fintech innovations and digital financial services are changing the microfinance landscape at a very fast pace, making it more efficient, scalable, and accessible. By harnessing technology, microfinance institutions can access hitherto unserved groups, reduce cost of operations, minimize risks, and provide more customized financial products. But there are issues related to digital literacy, cybersecurity, and regulation that have to be tackled to unlock the full potential of fintech in microfinance. With ongoing evolution in digital financial services, they will become a core element to reach inclusive financial inclusion, thereby furthering the larger vision of poverty reduction, economic empowerment, and a Viksit Bharat (Developed India).

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**BUILDING SUSTAINABLE AI-DRIVEN EDUCATIONAL ECOSYSTEMS FOR VIKSIT BHARAT @ 2047: ALIGNING WITH SDGS****Dr. Vishesh Shrivastava***Assistant Professor, KES' Shroff College of Arts and Commerce**Email: Vishesh@kessc.edu.in Mobile: 9960021208***Mr. Manish Singh***Assistant Professor, KES' Shroff College of Arts and Commerce**Email: Manish@kessc.edu.in Mobile: 9029141556*

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**Abstract**

*The vision of Viksit Bharat @ 2047 is to see India as a technologically empowered and globally competitive country, with education at the center to fulfill this vision. In today's era, incorporating Artificial Intelligence (AI) in the education sector offers revolutionary possibilities, especially in creating sustainable educational ecosystems consistent with the Sustainable Development Goals (SDGs). This research paper examines how AI has the potential to transform the Indian education sector by promoting inclusivity, improving quality, and overcoming the issues of accessibility and equity.*

*The suggested study analyzes the existing scenario of AI implementation in Indian education, highlighting opportunities as well as challenges to its mass adoption. With a mixed-methods research approach involving literature review, case studies, and expert interviews, the paper aims to create an inclusive framework for AI-based educational ecosystems. The key elements of this framework are adaptive learning systems, intelligent tutoring, personalized content delivery, and policy-driven analytics. In addition, the research also discusses possible challenges like the digital divide, data privacy issues, and ethical issues in AI application.*

*By highlighting innovative approaches and pragmatic solutions, this research explains how AI can assist Indian educational institutions in meeting global standards, ultimately contributing to the Viksit Bharat vision. The report underscores the need for strategic policy interventions, building capacities, and digital literacy to make AI-based education both sustainable and effective. This paper is intended to provide a roadmap for harnessing AI in education to build a future-ready workforce and make India a knowledge economy leader in the world by 2047.*

**Keywords:** *Viksit Bharat @ 2047, AI-Driven Educational Ecosystems, Sustainable Development Goals (SDGs), Educational Equity and Accessibility, AI in Indian Education*

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**Introduction:**

The vision of Viksit Bharat @ 2047 looks to make India a globally competitive, technologically superior, and economically strong nation by 2047. As the foundation for human capital formation, education will be instrumental in realizing this vision. As India hopes to become a knowledge superpower, the incorporation of advanced technologies like Artificial Intelligence (AI) into the education sector is imperative. The potential of AI to revolutionize education lies in its capability to improve accessibility, inclusivity, and learning experience quality, thus supporting the Sustainable Development Goals (SDGs).

Over the past few years, AI has become a critical instrument in education modernization worldwide. Its uses vary from adaptive learning systems that customize educational materials to individual needs to intelligent tutoring systems that provide customized guidance. In India, however, the adoption of AI in the education sector is still in its early stages, with several challenges including digital literacy divides, infrastructural constraints, and ethical issues preventing its adoption. In spite of these difficulties, the promise that AI-based learning ecosystems can generate skill-building, digital inclusivity, and more comprehensive learning opportunities is still profound.



This research paper intends to study how AI can be strategically utilized to develop sustainable educational ecosystems that support India's vision for Viksit Bharat @ 2047. Through a systematic review of the present scenario of AI in Indian education, the existing challenges, and suggesting novel frameworks, the research hopes to close the gap between the conventional systems of education and forward-looking, technology-enabled learning environments.

**Research Objectives:**

1. To analyze the current state of AI integration in the Indian education system.
2. To identify the challenges and opportunities in building AI-driven educational ecosystems.
3. To propose a sustainable framework for AI-enhanced education aligned with the SDGs.
4. To explore the role of AI in ensuring educational equity, quality, and accessibility.

**Methodology:**

The study employs a mixed-methods design integrating qualitative and quantitative analyses. Data will be collected through literature review, case studies of effective AI-based educational programs, and interviews with experts. Quantitative analysis will include statistical data on educational performance against AI interventions.

**Findings of the study**

1. **Analyzing the Current State of AI Integration in the Indian Education System:** The adoption of AI in Indian education is currently in its emerging state. Different institutions of learning are just starting to research and learn about AI uses such as adaptive learning systems, intelligent tutoring, and data analysis tools for assessing learning. Even government policies like the National Education Policy (NEP) 2020 lay importance on adopting technology to develop education. Still, the adoption remains patchy, with top institutions taking the lead while most rural schools and poorly funded institutions fall behind. Major problems lie in the absence of infrastructure, digital literacy, and the reluctance to change of traditional pedagogical approaches. In spite of this, efforts by EdTech players and pilot experiments with smart classrooms point to a slow but promising movement towards AI-based learning.
2. **Identifying Challenges and Opportunities in Building AI-Driven Educational Ecosystems:** Challenges in incorporating AI in the Indian education sector are the digital divide, lack of proper training for teachers, concerns over data privacy, and ethical issues due to algorithmic bias. Furthermore, the rural-urban divide presents major impediments to even access. Conversely, the potential is to utilize AI to support personalized learning, improve teachers' abilities using AI-based teaching assistants, and employ AI-driven analytics to inform education policy decisions. The growing number of affordable devices and digital platforms also portends a positive environment for AI deployment.
3. **Proposing a Sustainable Framework for AI-Enhanced Education Aligned with the SDGs:** The proposed framework encompasses four pillars:
  - a. Adaptive Learning Systems: Implementing AI to customize content based on individual learning styles and needs.
  - b. Intelligent Assessment Tools: Automating evaluations to reduce bias and enhance feedback accuracy.
  - c. Policy Integration and Governance: Using AI analytics to inform educational strategies and policies.



- d. Digital Inclusivity Initiatives: Addressing the digital divide through infrastructure development and capacity building. This framework aims to create an inclusive, quality-driven, and scalable educational model that aligns with SDG 4 (Quality Education) and SDG 10 (Reduced Inequalities).

Investigating the Contribution of AI towards Attaining Educational Equality, Quality, and Accessibility: AI can democratise education by bringing equal opportunities of learning regardless of socio-economic factors. With the help of adaptive learning, individuals from various backgrounds can get equal support. Language barriers can be overcome by translation tools enabled through AI, whereas automated grading platforms ensure equal opportunity assessment. Furthermore, AI facilitates monitoring educational performance across different classes, so no marginalized group lags behind.

**Suggestions:**

1. Develop a National AI Education Policy focusing on infrastructure, training, and inclusivity to streamline AI integration.
2. Prioritize teacher training programs that enhance digital literacy and proficiency in AI-driven educational tools.
3. Invest in rural and underfunded institutions to bridge the digital divide and ensure equitable access to AI-driven education.
4. Encourage public-private partnerships to foster innovative AI solutions tailored for the Indian education sector.
5. Implement robust data privacy frameworks to protect student information in AI-driven educational platforms.
6. Conduct continuous monitoring and evaluation to assess the effectiveness of AI implementations and make data-driven improvements.
7. Promote research and development in AI for education through dedicated funding and academic-industry collaborations.
8. Engage students in the co-creation of AI-driven learning tools to ensure relevance and practicality.
9. Address ethical considerations by establishing guidelines on AI ethics in education to prevent bias and inequality.
10. Foster global collaborations to learn from best practices and integrate international standards in AI-driven education.

**Conclusion:**

In order to achieve Viksit Bharat @ 2047, AI in education has to be adopted by India as a strategic priority. Creating inclusive and quality AI-based education ecosystems will not only improve quality and inclusivity but also position the country to take advantage of the requirements of a global knowledge economy. India can be a global leader in AI-powered education, based on international standards and sustainable development goals, if challenges are met and opportunities are harnessed.

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- EdTech Review. (2023). *AI in Indian Classrooms: Current Practices and Future Prospects*. Retrieved from <https://edtechreview.in/> The references will include peer-reviewed journals, policy documents, and case studies related to AI in education and sustainable development.

## URBANIZATION AND SMART CITIES: CHALLENGES AND OPPORTUNITIES IN BUILDING SMART CITIES IN INDIA TO SUPPORT SUSTAINABLE AND INCLUSIVE URBAN GROWTH

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### **Abstract**

*India has been growing and developing at a very promising rate and it has led to a high demand for the sustainable development. In 2015, a mission was launched by Government of India known as The Smart Cities Mission which had the agenda of uplifting urban infrastructure and providing digital connectivity to cities. Since this was one of its kind, there were a lot of challenges faced by government like governance concerns and socio-economic deficits.*

*The Research paper aims to examine the challenges and opportunities in creating smart cities in India with the focus on Udaipur as a case study. Primary data was collected from 120 respondents to analyse public perception, infrastructural preparedness, and the inclusivity of smart city initiatives.*

*The findings highlight key challenges such as inadequate digital infrastructure, lack of public awareness, and the need for stronger sustainability measures. However, opportunities exist in improved governance, economic growth, and the potential for digital transformation. The study concludes with policy recommendations to enhance the effectiveness of smart city initiatives, ensuring that they promote sustainable and inclusive urban development.*

**Keywords:** *Sustainability, Smart Cities, Urbanization, Viksit Bharat*

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### **Introduction**

Urbanization is the key strategic area for developing countries like India in 21st Century. As per World Bank report, India's urban population is expected to touch 600 million by 2030. The rapid influx of people into urban areas has led to significant stress on infrastructure, transportation, and environmental resources. Hence urban planning should be a core area of concern to ensure technological advancement and sustainable development.

To tackle these issues, the Government of India launched the Smart Cities Mission (SCM) in 2015, with an aim to establish 100 smart cities across the country. The initiative was aimed to improve urban governance, enhancing digital infrastructure, ensuring environmental sustainability, and fostering socio-economic inclusivity.

But even after these policies in place, many cities have critical challenges like social and economic inequality and less digital connectivity.

**Udaipur as a Case Study for Smart City Development**

Udaipur, a historic city known for its lakes and cultural heritage, was selected as one of the 100 smart cities under the Smart Cities Mission. The city aims to integrate smart technology into urban planning while preserving its historical essence. However, as a developing urban centre, Udaipur faces challenges such as traffic congestion, waste management inefficiencies, water scarcity, and digital infrastructure limitations.

This research seeks to assess the real-world implementation of smart city initiatives in Udaipur, evaluating public perception, infrastructure readiness, and potential areas of improvement. The teams have to optimally utilize the employees and chalk out effective workforce plans and strategies.

Hence all the organizations are trying hard to restore the equilibrium and progress by defying all odds that have arose due to Covid-19.

### **Objectives of the study**

This study aims to:

- Identify the key challenges in implementing smart cities in India, focusing on Udaipur.
- Analyse public perception regarding smart city initiatives.
- Evaluate opportunities for enhancing sustainability and inclusivity in urban development.
- Provide policy recommendations for effective smart city planning

### **Research Methodology**

The research is both qualitative and quantitative in nature. Primary data was collected from the residents of Udaipur. The sample size was 120 respondents. The study was also supported by collecting and reviewing secondary data from research papers, journals, articles and government reports. The respondents starting from the age of 18 were chosen for the research belonging to various areas of occupation. A structured questionnaire was designed to understand awareness of respondents towards smart city initiative of government, the access they have to digital infrastructure, governance and perception of respondents towards urban sustainability. The data was analysed using Ms Excel

### **Research Findings**

- **Public Awareness and Perception of Smart Cities**

A major finding of the study revealed that there was lack of public awareness about the Smart Cities Mission. A majority of respondents (58%) responded to having little to no knowledge about specific smart city initiatives being implemented in Udaipur. This lack of awareness results in limited citizen engagement and weak public participation in smart city decision-making. Also, transparency was found to be a major concern, with 43% of the respondents' expressing doubts about the governance and monitoring of smart city projects. Many citizens feel that the initiatives are not sufficiently publicized, and there is a lack of clarity on how funds are being allocated and utilized.

- **Infrastructure and Digital Readiness**

Infrastructure development and digital readiness are the major aspects for the success of smart cities. The research revealed that 72% of respondents believe that Udaipur lacks the necessary smart infrastructure to support its ambitions. Public transportation was found to be a critical area requiring attention of government, whereas 65% of respondents responded that that current systems need technological upgrades such as GPS tracking and cashless ticketing. Additionally, digital infrastructure remains a challenge, as only 40% of the respondents reported having access to high-speed internet in all parts of the city. Without robust digital connectivity, the implementation of smart services such as e-governance and digital transactions remains constrained.

- **Environmental and Sustainability Challenges**

Sustainability is a core component of the smart city model. Udaipur is based in lush green surroundings but still certain areas of concern are found that may hinder the sustainable growth of the city. 80% Respondents revealed that existing systems of Waste management in the city are inadequate. Unregulated waste disposal and inefficient recycling programs contribute to the problem. Water scarcity is another pressing issue, as 62% of respondents reported experiencing frequent water shortages. Furthermore, 55% of residents shared the issues with air pollution control measures, mentioning increasing vehicle emissions and industrial activities that act as major contributors to deteriorating air quality.

- **Socio-Economic Inclusivity and Accessibility**

An important aspect of smart city initiatives is to ensure inclusivity, yet the study found disparities in access to smart city benefits. Nearly 48% of respondents believe that smart city projects predominantly

benefit higher-income groups, while low-income communities have limited access to improved infrastructure and digital services. Additionally, 67% of respondents emphasized the need for more affordable housing and better social infrastructure to make smart city development more inclusive. On a positive note, 71% of respondents believe that smart city projects can create new employment opportunities by fostering innovation and digital entrepreneurship.

- **Opportunities for Udaipur's Smart City Development**

With the challenges, respondents also mentioned many opportunities for improving smart city development in Udaipur. A significant 76% of respondents agreed that smart city initiatives could enhance governance and public service delivery by integrating technology-driven solutions. Additionally, 69% supported the use of AI and IoT for real-time monitoring of urban services. Many respondents (55%) also believe that public-private partnerships (PPPs) can accelerate smart city development by bringing in investment, expertise, and technological innovations.

**Conclusion of the Study:**

The study highlights both the challenges and opportunities associated with implementing smart city initiatives in Udaipur. While the Smart Cities Mission has made significant strides in urban transformation, gaps in digital infrastructure, public awareness, and socio-economic inclusivity remain pressing concerns. A substantial proportion of the population is either unaware of the initiative or feels disconnected from its benefits, leading to low public engagement. Furthermore, technological readiness remains a major barrier, as inadequate internet connectivity and outdated public transport systems hinder progress.

Despite these challenges, Udaipur has significant potential for smart urban development, particularly in governance, employment generation, and environmental sustainability. If technological innovations such as AI-driven governance, real-time traffic monitoring, and smart waste management systems are implemented effectively, the city can achieve a more sustainable and efficient urban model. Additionally, public-private partnerships (PPPs) and citizen participation can play a crucial role in ensuring that the benefits of smart city initiatives are equally distributed among all socioeconomic groups.

In conclusion, while Udaipur is on the right path toward becoming a smart city, strategic interventions are necessary to overcome existing obstacles. A balanced approach that combines technological advancements, sustainability measures, and citizen inclusivity will be essential in achieving the true vision of a smart and sustainable urban future.

**Recommendations:**

Based on the findings, the following recommendations are proposed to enhance Udaipur's smart city initiatives:

- **Strengthening Digital Infrastructure**

One of the most critical aspects of a smart city is a robust digital infrastructure. The government should work towards expanding high-speed internet connectivity across all city zones to facilitate e-governance, digital education, and smart traffic systems. Additionally, public transport should be modernized with real-time tracking systems, electronic ticketing, and app-based services to enhance efficiency.

- **Increasing Public Awareness and Citizen Engagement**

The low awareness of smart city initiatives highlights the need for better public communication strategies. The local government should conduct awareness campaigns via social media, community

meetings, and educational institutions to inform residents about smart city developments. Additionally, introducing citizen feedback mechanisms—such as mobile apps where people can report issues or suggest improvements—will encourage greater participation and transparency.

- Enhancing Environmental Sustainability

Sustainability must be a priority in urban planning. Strengthening waste management systems by implementing AI-driven sorting mechanisms and increasing recycling initiatives can significantly reduce pollution. Additionally, smart water conservation technologies, such as automated leak detection and rainwater harvesting, should be promoted to address Udaipur's water scarcity.

- Promoting Socio-Economic Inclusivity

To have an equitable development in smart cities, socio economic indicators cannot be neglected. The smart city initiatives and benefits should be accessible to all income groups of the city. Only then, holistic development can be ensured. Government can also think of including the low-income neighbouring districts in the smart city project to ensure their development. Moreover, skill development programs can be strengthened to have quality human resource and employable citizens. This will also give the talented pool required for success of digital economy.

- Improving Governance and Transparency

Effective governance is very important for the success of any smart city initiative. Technology can be leveraged to understand the effectiveness of city services in real time. This will improve the accountability and responsiveness. Efficiency can also be enhanced by ensuring the transparent fund allocation and bringing in more public and private collaborations in major projects thus leveraging the expertise of researchers and experts.

### **Future scope of the study:**

The study has a broad future scope. This similar study can be conducted in other smart cities as well to understand the effectiveness of government measures to establish smart cities in India. Long term benefits of the study can also be understood with the help of expanding the study. The study can be taken further by understanding the impact of various technologies and its contributions in improving smart cities in India.

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## SECURING INDIA'S DIGITAL ECONOMY: INTEGRATING AI AND BLOCKCHAIN FOR A RESILIENT FUTURE

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### Abstract

*The growing digitization of India's economy has resulted in unprecedented prospects for growth and innovation. However, as digital transactions and data proliferation grow, protecting the security of economic operations has become increasingly important. This paper investigates the combination of Artificial Intelligence (AI) with Blockchain technology as a strong framework for securing India's digital economy. It explores existing difficulties in the Indian context, compares global best practices, and suggests a strategy approach to strengthen digital economic operations in the face of cyber threats. The research tries to bridge the gap between new technologies and stable economic growth by conducting a thorough literature review and case study analysis. The findings show that combining AI and Blockchain not only improves security measures, but also promotes transparency, data integrity, and real-time monitoring, making the digital economic ecosystem more resilient to possible threats. Furthermore, the study describes the problems associated with deploying these technologies and proposes potential strategies to solve them.*

**Keywords:** Digital Economy, AI, Blockchain, Cybersecurity, India, Global Comparison, Economic Resilience

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**Introduction:** The digital transformation of economies around the world, particularly in emerging markets such as India, has created both tremendous potential and unprecedented security threats. As India strives to establish itself as a global economic standard by 2047, protecting its digital economic infrastructure is vital. AI and Blockchain, as new technologies, have enormous potential to improve security, minimize vulnerabilities, and increase confidence in digital transactions. This research investigates how merging AI and Blockchain can protect India's digital economy, maintaining resilience and promoting long-term economic stability. By combining AI for real-time data analysis and Blockchain for immutable record-keeping, these solutions address basic security concerns associated with digital economic operations.

**Research Problem and Objectives:** India's fast digitalization has made its economic structure vulnerable to a wide range of security risks, including cyberattacks, data breaches, and digital fraud. While global practices offer insights into effective security frameworks, contextualizing these solutions for India remains difficult. This study addresses the following question: How might AI and Blockchain integration improve the security of India's digital economy?

1. To fulfill this research question, the primary objectives are:
2. To examine the challenges posed by digital threats in India's economic framework.
3. To analyze the potential of integrating AI and Blockchain for enhanced security.
4. To develop strategic frameworks for implementing AI and Blockchain in securing digital economic transactions.
5. To propose policy recommendations for integrating these technologies in the Indian context.



**Literature Review:**

Das and Roy (2024) investigate the convergence of blockchain technology with artificial intelligence in boosting security and transparency in the financial industry, noting how both technologies decrease risks connected with digital financial transactions. Gautam (2023) highlights the implementation of AI-based credit risk assessment, emphasizing the need for secure data handling in financial applications. Jayakumar (2021) studies the possibility of terrorist cyberattacks, focusing on national preparedness solutions relevant to digital economic security.

Kumar and Srinivasan (2024) give a case study of AI-based financial fraud detection in the Indian banking sector, proving the efficacy of machine learning models in detecting abnormal transactions. Similarly, Kumar et al. (2023) discuss AI-powered fraud detection to improve transaction security. Lee et al. (2023) investigate the synergies between AI and blockchain, focusing on applications in secure financial systems.

Mehta and Srinivasan (2024) examine the integration of AI-driven IT infrastructure and blockchain for effective risk management, emphasizing the possible resilience of IT systems. Müller et al. (2024) propose AI-driven intrusion detection systems for cyber-physical systems based on blockchain, proving improved cybersecurity.

Nair et al. (2023) discuss secure land record administration with blockchain, emphasizing the importance of decentralized ledgers in data integrity. Patel and Singh (2025) put forward a complete framework for merging AI and blockchain to improve digital economy security.

Ramachandran (2024) focuses on blockchain applications in cybersecurity in India, whereas Reddy and Kumar (2023) and Sharma et al. (2023) examine blockchain's function in digitizing land records, which is critical for securing ownership and transaction data.

Sharma et al. (2024) investigate AI in digital governance, focusing on how combining AI and blockchain might safeguard information systems. Verma and Gupta (2023) discuss blockchain for safe land titling, emphasizing the need of data immutability. Sinha et al. (2019) address transparency challenges in land record administration by suggesting blockchain alternatives.

Sharma et al. (2023) examine the use of AI in the Indian financial sector, highlighting the increased security in digital transactions. The Center for Security Studies (2020) promotes Estonia's national cybersecurity strategies, including insights into integrating AI and blockchain. Lee and Kim (2023) address the worldwide implications of employing these technologies for financial security.

**Analysis and Discussion:** According to the report, the security framework in India's digital economy is greatly enhanced by the integration of blockchain technology and artificial intelligence. Blockchain's immutable ledgers and AI-driven anomaly identification reduce financial fraud in the financial industry (Kumar & Srinivasan, 2024). This integration protects documents against unwanted changes in addition to identifying fraudulent transactions. Decentralized blockchain technologies and artificial intelligence (AI) improve data security and transparency in governance, particularly in land record management (Nair et al., 2023). AI-driven intrusion detection models serve as an example of how these technologies work in concert to solve vulnerabilities in cyber-physical systems (Müller et al., 2024). Furthermore, case studies demonstrate effective implementations in digital identity management, financial transaction monitoring, and secure land titling, suggesting the possibility of broader adoption across a range of industries.

**Proposed Solutions:** Based on the results, the study suggests a multi-layered security approach that combines blockchain technology and artificial intelligence to improve the resilience of India's digital economy. Important components consist of:

1. A real-time anomaly detection predictive analytics system powered by AI.
2. The decentralized ledger of blockchain technology guarantees the immutability of data.
3. Cross-sector cooperation to provide uniform guidelines for integrating blockchain and AI.
4. Frameworks for policies to handle issues with data privacy and interoperability.

The goal of these solutions is to offer a strong defense against new online dangers. In the public, governmental, and financial sectors, the suggested model highlights the significance of safe transaction verification, real-time data processing, and data security.

**Challenges and Future Directions:** Regulatory compliance, scalability, and interoperability issues impede smooth integration despite the potential. To achieve real-time security updates, blockchain platforms and AI systems must be compatible. Furthermore, it is still technically difficult for blockchain networks to scale to handle enormous amounts of financial data. In order to support the combined usage of blockchain and AI, regulatory frameworks must change, especially in areas pertaining to algorithmic transparency and data protection. Future studies should concentrate on developing uniform frameworks for implementing blockchain and AI systems as well as tackling moral dilemmas pertaining to algorithmic bias and data privacy. Policymakers, technologists, and business executives must work together to create comprehensive solutions that strike a balance between security and creativity.

**Conclusion:** Securing India's digital economy requires integrating blockchain and artificial intelligence. The combination of blockchain technology for immutable records and machine learning for real-time anomaly detection improves security, transparency, and resilience. In order to integrate these technologies across many sectors, future research should concentrate on resolving interoperability issues and creating standardized frameworks. Furthermore, encouraging cross-sector cooperation will be crucial to making sure the digital economy is protected from new cyberthreats. In conclusion, using blockchain and artificial intelligence (AI) should be viewed as a calculated step to safeguard India's digital future.

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