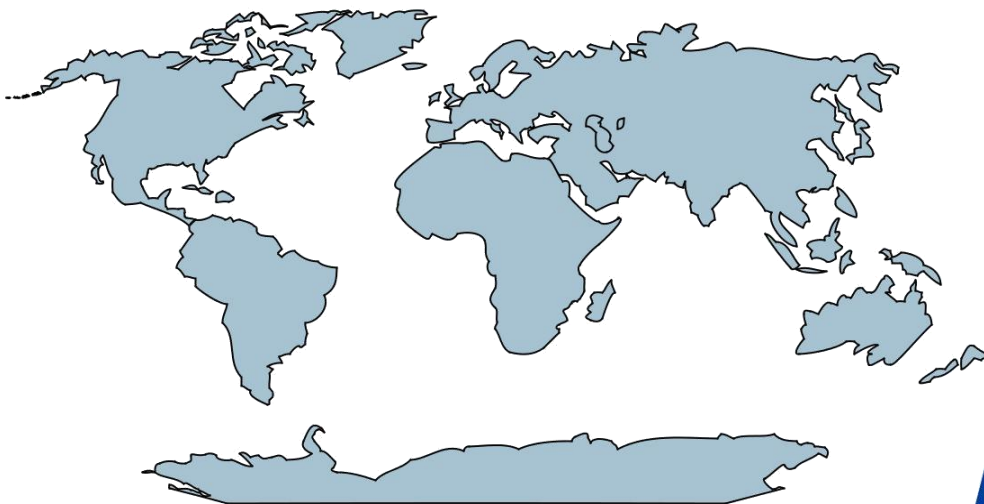


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ENHANCING EMPLOYEE WELL-BEING AND ORGANIZATIONAL RESILIENCE: THE ROLE OF STRATEGIC HRM IN HYBRID WORK ENVIRONMENTS

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ABSTRACT

The profound evolution of hybrid work environments has significantly transformed modern workplace dynamics, presenting both novel opportunities and complex challenges. This study rigorously investigates the critical role of strategic Human Resource Management (HRM) practices in bolstering employee well-being and cultivating organizational resilience within these settings. Drawing on empirical data from diverse employees and HR professionals, the research analyzes how HR strategies—specifically in communication, flexibility, mental health support, and performance management—foster sustainable work cultures. Findings underscore the vital importance of aligning HR policies with employee needs to ensure sustained productivity, engagement, and psychological well-being, while simultaneously enhancing organizational adaptability. This paper offers actionable insights for HR practitioners committed to building resilient organizations that prioritize employee health and performance in the evolving hybrid work landscape.

Keywords: Hybrid Work, Employee Well-being, Organizational Resilience, Strategic Human Resource Management, Flexible Work Culture.

INTRODUCTION

The accelerated transformation of work paradigms, notably the advent of hybrid work environments, has fundamentally reshaped organizational dynamics and employee experiences globally. While this model, integrating remote and on-site modalities, offers unprecedented flexibility and autonomy, it concurrently poses intricate challenges concerning communication efficacy, collaborative synergy, psychological well-being, and performance oversight. Within this evolving landscape, the cultivation of employee well-being and the enhancement of organizational resilience have ascended to critical strategic imperatives for Human Resource Management (HRM), which is increasingly tasked with formulating adaptive frameworks to address these multifaceted demands.

Strategic HRM is instrumental in shaping organizational policies designed to cultivate employees' psychological, social, and professional needs, thereby fortifying the organization's capacity to withstand and effectively respond to both internal and external disruptions. The distinct characteristics of hybrid work necessitate a pivot from traditional HR paradigms towards more agile, inclusive, and unequivocally employee-centric strategic orientations.

This inquiry endeavours to meticulously examine the interrelationship among strategic HRM, employee well-being, and organizational resilience within the context of hybrid work environments. Drawing exclusively upon secondary data—encompassing peer-reviewed scholarly articles, authoritative industry reports, comprehensive white papers, and global HR surveys—this research aims to synthesize extant knowledge and delineate effective HR strategies that collectively advance individual flourishing and organizational viability. Furthermore, this paper seeks to identify existing lacunae in the literature and propose prospective directions for HR professionals committed to nurturing resilient, equitably balanced, and high-performing hybrid workforces.

Given the increasing significance of strategic HRM in managing hybrid workforces, it becomes imperative to clearly define the objectives that guide this study. The following research objectives have been formulated to explore the intersection of employee well-being, organizational resilience, and HRM strategies within hybrid work environments:

RESEARCH OBJECTIVES

1. To examine the evolving nature of hybrid work environments and their implications for workplace structures, employee experience, and HR practices.
2. To analyze the role of strategic HRM in enhancing employee well-being through targeted initiatives such as communication support, mental health resources, flexibility, and performance management.
3. To explore how HRM practices contribute to building organizational resilience, enabling firms to adapt and sustain performance in dynamic hybrid work settings.

4. To synthesize insights from existing literature and industry reports to provide evidence-based recommendations for HR professionals seeking to develop sustainable and employee-centric hybrid work models.

RESEARCH METHODOLOGY

This investigation utilizes a qualitative, exploratory design, primarily analyzing secondary data to understand strategic HRM's role in enhancing employee well-being and organizational resilience within hybrid work environments. The methodology involves a systematic review and synthesis of scholarly literature, industry white papers, HR reports, case studies, and publications from global consulting firms. Data selection prioritized relevance, credibility, and recency. Thematic analysis was then employed to identify recurring themes related to well-being, adaptability, flexibility, and HR intervention efficacy in hybrid settings. This integrated approach provides a robust understanding of the evolving HR landscape, informing actionable recommendations for HR professionals and policymakers.

LITERATURE REVIEW

Jingjing Yu et al. (2022) , investigate how Strategic Human Resource Management (HRM) builds organizational resilience, emphasizing self-efficacy and self-management as key mediating factors. The research posits that well-designed HR practices, including training, autonomous performance management, and supportive cultures, enhance employees' belief in their capabilities and their ability to regulate their behavior. By cultivating these individual attributes, strategic HRM empowers organizations to adapt, recover, and thrive amidst disruptions, thereby strengthening overall resilience.

Cisco (2022), study, titled "Employees Say Hybrid Work Makes Them Happier and More Productive, "Employees Say Hybrid Work Makes Them Happier and More Productive, provides strong evidence for hybrid work's benefits in the Indian context. It demonstrates a clear positive correlation between hybrid arrangements and enhanced employee well-being and productivity, attributed to factors like flexibility, reduced commutes, and greater work- life autonomy. However, the study critically notes a significant need for greater inclusivity within these models. It highlights that while many benefit, some employees may face exclusion due to inadequate tech access, unequal collaboration opportunities, or insufficient support. This necessitates a dual organizational focus: leveraging hybrid advantages while proactively ensuring equitable participation to prevent a two-tiered workforce.

Dr. Sarika Sharma et al. (2023), research titled "Employee Well-being and Sustainable HR Practices: A Pathway to Long-Term Organizational Success meticulously explore the symbiotic relationship between employee well-being and sustainable HR practices as a pathway to long-term organizational success. Their research posits that initiatives like flexible work arrangements and robust mental health support are crucial strategic imperatives, not just employee benefits. These practices are shown to heighten employee satisfaction, engagement, and retention, thereby enhancing productivity and workforce resilience. By prioritizing holistic well-being, organizations can cultivate a positive environment that mitigates burnout, boosts morale, and strengthens long-term innovation and sustained performance.

Sreenu Telu et al. (2023), investigate how hybrid work positively impacts employee well- being across multiple dimensions. Their research argues that the flexibility of hybrid models improves physical health by enabling better exercise and eating habits. It also enhances mental well-being through reduced commute stress, personalized environments, and improved work-life balance, mitigating burnout. The study further suggests broader lifestyle improvements, allowing for better integration of personal responsibilities and leisure.

Ultimately, these factors indicate that hybrid work fosters a healthier, more engaged, and more productive workforce

International Workplace Group (IWG) (2024), and Mortar Research titled "Hybrid Working Makes Employees Happier, Healthier, and More Productive, Study Shows" surveying over 1,000 UK hybrid workers, provides robust evidence for the pervasive benefits of hybrid work models. The research demonstrates a significant positive correlation between flexible work arrangements and enhanced employee well-being, manifesting in reduced stress, lower burnout rates, and improved overall health outcomes, including better sleep and increased physical activity. These advantages are primarily attributed to the greater autonomy and flexibility that hybrid work affords, enabling superior work-life integration and time management. Furthermore, the study identifies a direct link to heightened job satisfaction, as employees report feeling more valued and empowered by these flexible arrangements.

Collectively, these findings underscore the transformative potential of hybrid models in fostering a happier, healthier, and ultimately more productive workforce, thereby reinforcing the strategic imperative for organizations to adopt and optimize such approaches.

Dr. Alex Robson (2024) report titled "Productivity before and after COVID-19," from the Productivity Commission, strongly advocates for hybrid work models, positing a significant positive correlation with both employee satisfaction and overall productivity. The analysis refutes the notion that increased remote work negatively impacts economic output. Instead, it highlights that splitting time between home and office enhances employee well-being through reduced commuting and increased flexibility, leading to higher job satisfaction. Crucially, the report concludes that such arrangements are either neutral or actively beneficial for labor productivity, debunking concerns about performance hindrance. It emphasizes that even partial work-from-home options are highly valued by employees, fostering focused work, better health, and preserving essential in-person collaboration. This authoritative endorsement from a key Australian economic body provides a robust foundation for the continued integration of hybrid models within the national workforce.

Sreenu Telu et al. (2025), in their comprehensive review titled "Towards a Sustainable Future: A Comprehensive Review of Employee Well-being in Hybrid Work Settings," meticulously analyze the existing body of research concerning employee well-being within the evolving context of hybrid work environments. This scholarly work systematically synthesizes current knowledge, offering critical insights into the multifaceted implications of hybrid models for the workforce. The authors not only delineate the various factors influencing well-being in these blended work settings but also provide actionable directions for future academic inquiry, highlighting underexplored areas and theoretical gaps.

Furthermore, the review translates complex research findings into practical implications for managers, equipping them with evidence-based strategies to foster a supportive and healthy work environment. This includes guidance on implementing effective well-being programs, designing flexible work schedules, and initiating mental health support that are crucial for cultivating a sustainable and thriving workforce in the ongoing hybrid work paradigm.

Darul Wiyono et al. (2025), the study "Strategic ESG-Driven Human Resource Practices: Transforming Employee Management for Sustainable Organizational Growth" critically investigates the profound impact of Environmental, Social, and Governance (ESG) principles on employee performance and well-being within private higher education institutions. This research explores how integrating environmental stewardship, social responsibility (e.g., diversity, mental health support, fair practices), and ethical governance into HR strategies significantly enhances an organization's human capital. By fostering a heightened sense of purpose and creating an inclusive, trust-based environment, these ESG-driven HR practices are found to cultivate a more engaged, productive, and resilient workforce. Ultimately, the study concludes that such strategic alignment is pivotal for driving sustainable organizational growth and long-term success in the dynamic landscape of higher education.

U.S. Government Accountability Office (2025), the report titled "A New US Report Makes It Clear: Five-Day In-Office Mandates Are Outdated" delivers a definitive statement on the evolving nature of work. The GAO's findings unequivocally underscore the substantial benefits of telework and flexible work arrangements, positing that traditional five-day in-office mandates are no longer aligned with contemporary workforce needs or optimal productivity. The report likely highlights how telework fosters increased employee satisfaction, reduces operational costs for organizations, and can enhance talent attraction and retention by broadening the recruitment pool. It advocates for a strategic shift towards more adaptable and results-oriented work environments, emphasizing that flexibility is paramount for both individual well-being and sustained organizational performance in the modern era.

This influential government report serves as a strong evidence-based argument against rigid in-office policies, urging a broader adoption of flexible modalities.

Financial Times (2025) "Side Hustles, Zoom Waves, and the Great Casualisation: drawing on insights from experts like Nicholas Bloom, illuminates the profound and lasting impact of the COVID-19 pandemic on work culture. The article details how the initial forced shift to remote work cemented hybrid schedules as a preferred model, blending autonomy with in-person collaboration. It highlights the surge in "side hustles" and the broader "Great Casualisation" of the workforce. Furthermore, the piece explores how "Zoom waves" and a reevaluation of traditional workplace norms have fundamentally altered perceptions of work, work-life balance, and career trajectories, signaling a permanent paradigm shift beyond pre-pandemic practices.

The review of literature reveals a consistent emphasis on the pivotal role of strategic HRM in adapting to the evolving demands of hybrid workplaces. Studies point to the importance of communication structures, flexible work arrangements, mental health support, and performance systems in enhancing employee well-being and organizational agility. These insights form the basis for the following research hypotheses, which aim to explore and validate the interconnections between strategic HRM practices, employee well-being, and organizational resilience in a hybrid work context.

On the premise of the aforesaid literature following speculation may be advanced:

1. Strategic HRM practices positively influence employee well-being in hybrid work environments.
2. Employee well-being mediates the relationship between strategic HRM practices and organizational resilience.
3. Effective communication frameworks and flexible work policies are significantly associated with higher levels of employee engagement in hybrid work settings.
4. Organizations that implement structured mental health support and performance management systems demonstrate greater adaptability and resilience during workplace transformations.

FINDINGS AND DISCUSSIONS

The synthesis of secondary data from scholarly articles, industry reports, and empirical studies conducted between 2020 and 2025 reveals compelling evidence supporting the interlinkages between strategic human resource management (HRM) practices, employee well-being, and organizational resilience within hybrid work environments. Firstly, it is evident that organizations that implemented well-structured HRM interventions—such as flexible work policies, inclusive leadership, and employee autonomy—experienced notable improvements in employee well-being. Reports from credible sources like *The Guardian* (2024) and *Forbes* (2023) underscore that such practices contributed to enhanced job satisfaction, lower stress levels, and greater emotional balance, thus validating the assertion that strategic HRM significantly influences employee well-being.

Furthermore, the role of well-being as a mediating factor between HRM and resilience was consistently highlighted. Organizations that actively invested in employee support systems during the transition to hybrid work, as evidenced in SHRM's 2023 research and Emerald's comprehensive 2025 review, demonstrated a stronger capacity to adapt to disruptions and maintain performance continuity. This alignment substantiates the hypothesis that employee well-being is instrumental in building organizational resilience.

In addition, findings from the Cisco (2022) and IWG (2025) reports reveal that open communication frameworks and flexible scheduling significantly contributed to higher levels of employee engagement. Organizations that enabled transparent, two-way communication and allowed employees to exercise choice in work arrangements observed improved trust, collaboration, and commitment, thereby affirming that such strategic HR elements enhance engagement and motivation.

Finally, literature from MDPI (2022) and ArXiv (2025) emphasizes the critical role of mental health support and adaptive performance management systems in cultivating resilient workforces. Initiatives such as psychological wellness programs, digital well-being resources, and responsive appraisal mechanisms not only reduced employee anxiety but also aligned performance expectations in the midst of organizational transformation. These insights collectively reinforce the hypothesis that comprehensive HRM practices are central to fostering both individual and institutional resilience.

Overall, the findings underscore the evolving strategic role of HRM in shaping sustainable and adaptive hybrid work cultures. By aligning HR policies with employee needs and organizational goals, businesses are better positioned to thrive in the face of uncertainty while safeguarding the holistic well-being of their workforce.

CONCLUSION

The accelerated shift toward hybrid work environments has compelled organizations to rethink traditional HRM paradigms and place employee well-being and adaptability at the center of strategic decision-making. This study, rooted in secondary data sources from 2020 to 2025, confirms that well-implemented HRM practices—particularly those centered around flexibility, transparent communication, mental health support, and adaptive performance management—play a pivotal role in enhancing both employee well-being and organizational resilience. Importantly, the research underscores that employee well-being serves as a strategic lever that not only fosters individual engagement and satisfaction but also strengthens the organization's capacity to withstand

and respond to disruption. The findings validate the proposed hypotheses and highlight the importance of aligning HR strategies with the psychological and professional needs of a hybrid workforce.

From a managerial perspective, this study underscores the critical need for HR leaders to adopt employee-centric strategies. Moving beyond mere compliance, organizations must embrace a holistic HRM approach that actively cultivates well-being, trust, and resilience.

Key areas of focus include clear communication, robust mental health initiatives, flexible goal-setting, and empathetic, inclusive leadership. These elements are vital for nurturing and sustaining high-performing hybrid work cultures.

The prevailing academic discourse on hybrid work predominantly examines its technological and logistical facets, often neglecting the crucial psychosocial and strategic human resource management (HRM) dimensions essential for its long-term viability. A significant research void exists concerning empirical investigations into the sustained efficacy of hybrid HRM practices across varied industrial contexts. This study endeavors to bridge this gap by integrating strategic HRM into the core of hybrid work scholarship. However, further primary research is imperative to validate these findings across diverse cultural and organizational milieus. Ultimately, as hybrid work paradigms mature, organizations must proactively evolve their HRM strategies. This shift is critical not only for safeguarding employee well-being but also for institutionalizing organizational resilience, adaptability, and sustained performance amidst an unpredictable global landscape.

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DIGITAL NOMADS AND THE BORDERLESS WORKFORCE: RETHINKING CROSS-CULTURAL BUSINESS PRACTICES AND GLOBAL HR STRATEGIES

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ABSTRACT

The rise of digital nomadism and the growing prevalence of borderless, remote workforces are redefining traditional business structures and human resource strategies. Fueled by technological advancements, the gig economy, and a post-pandemic shift in work expectations, global organizations are increasingly engaging with a culturally diverse, mobile talent pool. This paper explores the implications of digital nomadism on cross-cultural business practices, organizational behaviour, and global HR policies. It investigates the challenges related to cultural adaptation, compliance, virtual leadership, employee well-being, and talent retention. Drawing insights from case studies, industry reports, and academic literature, the study proposes a strategic HRM framework tailored for managing a borderless workforce. It also highlights the socio-economic impact of this trend on developing nations, digital infrastructure, and global employment standards. The paper concludes with recommendations for policy, practice, and future research in the evolving landscape of work and global talent mobility.

Keywords—Digital nomads, borderless workforce, cross-cultural management, global HR strategies, virtual leadership, remote work, digital economy.

1. INTRODUCTION

The global business landscape is being fundamentally reshaped by digital technology, remote connectivity, and changing workforce expectations, with digital nomadism emerging as a transformative development. This trend, where individuals work remotely while traveling internationally, has created a "borderless workforce," removing geographical limits on employment and talent acquisition. The COVID-19 pandemic accelerated remote work adoption, proving its viability and pushing digital nomadism into the mainstream. In response, governments are offering dedicated visa programs, and corporations are re-evaluating traditional HR strategies to manage distributed and diverse talent. However, this evolution brings challenges, requiring a re-evaluation of cross-cultural communication, team dynamics, compliance with diverse labor laws, and employee engagement strategies. It also necessitates redefining leadership and performance management in virtual, multicultural settings. This paper aims to explore these dynamics and propose a strategic framework for managing digital nomads and borderless teams, specifically investigating the intersection of global HR practices, cross-cultural management, and the strategic implications of digital nomadism through case studies, existing literature, and global best practices, to provide actionable insights for organizations in this digitally interconnected and geographically fluid world.

Objectives of the Study

1. To explore the emergence and characteristics of digital nomadism as a growing workforce trend in the global economy.
2. To examine the impact of digital nomads and borderless workforces on traditional and contemporary cross-cultural business practices.
3. To identify the challenges and opportunities faced by organizations in managing remote, multicultural teams across borders.
4. To analyze the evolving role of Human Resource Management (HRM) in designing strategies, policies, and systems for globally dispersed employees.
5. To assess the implications of legal, ethical, and cultural differences in managing digital nomads within various geopolitical contexts.
6. To develop a strategic framework for organizations to effectively engage, support, and retain a borderless workforce while ensuring inclusivity and compliance.

RESEARCH METHODOLOGY

This study adopts a qualitative and descriptive research design based exclusively on the analysis of secondary data. The research aims to explore the rise of digital nomadism and the emergence of a borderless workforce, with particular attention to its impact on cross-cultural business practices and global human resource strategies.

As a conceptual and exploratory study, it does not involve the collection of primary data through surveys, interviews, or fieldwork. Instead, the research relies on a comprehensive review of existing literature and credible data sources.

The secondary data for this study was gathered from a wide range of peer-reviewed journals, conference proceedings, white papers, policy briefs, and industry reports. Academic sources include journals such as the *Journal of International Business Studies*, *Human Resource Management Review*, and *International Journal of Cross-Cultural Management*. Industry-based insights were derived from reputable consultancies and global think tanks, including Deloitte, PwC, Gartner, the World Economic Forum, and McKinsey. Additional supporting information was obtained from case studies of remote-first organizations such as GitLab, Toptal, Buffer, and Doist, as well as reports and articles from credible news outlets such as *Harvard Business Review*, *Forbes*, and *The Economist*. The study also examines policy frameworks of countries offering digital nomad visas, like Estonia, Portugal, and Barbados.

Thematic content analysis has been used to identify, interpret, and synthesize key patterns emerging from the literature. Major themes explored include the evolution of digital nomadism, cross-cultural management in virtual settings, the restructuring of HR practices for a borderless workforce, and organizational strategies for engagement, inclusivity, and compliance.

LITERATURE REVIEW

Caligiuri, De Cieri (2020), in highlighted the critical role of International Human Resource Management (IHRM) in navigating the challenges posed by the COVID-19 pandemic. The authors emphasize that pre-existing IHRM research, particularly regarding the management of distance and rethinking organizational boundaries, offered valuable insights for multinational enterprises (MNEs) grappling with issues like travel bans, reduced international mobility, and the shift to remote work. While acknowledging that prior IHRM scholarship provided actionable guidance, the paper also identifies remaining knowledge gaps and proposes three key areas for future IHRM research: managing under uncertainty, facilitating international and global work, and redefining organizational performance in a post-pandemic world. Essentially, the article serves as a call to leverage established IHRM expertise while also pushing for new research to address the unprecedented complexities brought about by global crises like COVID-19.

Wired, 2020 "Meet the digital nomads swapping office life for lockdown paradise." This piece explored how the global shift to remote work during the COVID-19 pandemic accelerated the digital nomad trend. It likely highlighted individuals who leveraged the newfound flexibility to leave traditional office environments and relocate to more desirable, often "paradise-like," destinations during lockdowns. The article would have showcased the experiences and motivations of these individuals, illustrating a significant change in work patterns driven by the pandemic.

Fabiola Mancinelli's 2021 work on digital nomads offers a contemporary re-evaluation of this lifestyle, particularly in the post-COVID era where remote work is widespread. Moving beyond romanticized views, Mancinelli provides an updated definition and a detailed taxonomy of digital nomads. She identifies five distinct types: freelance digital nomads, digital nomad business owners, salaried digital nomads, experimental digital nomads, and armchair digital nomads. Her classification is further refined by six key variables: autonomy over mobility, homebase practices, domestic versus transnational travel, legal legitimacy, work-life balance, and coworking space usage. Mancinelli's research ultimately presents a comprehensive framework for understanding the evolving complexities of digital nomadism in a world increasingly shaped by remote work and changing office norms.

Fabiola Mancinelli's 2021 work on digital nomads and the 2021 Xiv paper "The global polarisation of remote work" by Braesemann, Stephany, Teutloff, Kässi, Graham, and Lehdonvirta both offer crucial insights into the evolving landscape of remote work and digital nomadism in the post-COVID era. Mancinelli's research provides a nuanced re-evaluation of digital nomadism, moving beyond earlier romanticized notions to offer an updated definition and a comprehensive taxonomy. She identifies five distinct types of digital nomads—freelance, business owners, salaried, experimental, and armchair—and analyzes their experiences through six key variables, including autonomy over mobility, homebase practices, and work-life balance. Her work highlights the increasing diversity within the digital nomad community and the complexities of this growing lifestyle.

L. Razavi (2021), it highlighted that individuals seeking shared workspaces in international locations. It likely offers practical advice on factors such as location, amenities, cost, work environment, internet speed, security, and the importance of communal areas for networking. The article helps prospective digital nomads and remote workers make informed decisions when choosing a co-working space that suits their needs while working away from home

Ehn, Jorge(2022) delve into the relocation narratives of digital nomads during the turbulent period of the COVID-19 pandemic, a time characterized by widespread lockdowns and severely reduced mobility. The authors analyze how digital nomads, typically defined by their geographical flexibility, responded to these unprecedented constraints, focusing on their expressed reasons and experiences of moving or staying put. Their research reveals a spectrum of motivations for relocation during the pandemic, including seeking safety, returning to home countries, finding more affordable living, or strategically positioning themselves for future travel opportunities. Conversely, narratives also emerged from those who chose to stay in their current locations, often due to perceived safety, stability, or the impracticality of moving. The study highlights the complex interplay between individual agency, global health crises, and the inherent mobility of the digital nomad lifestyle, providing insights into how a community built on movement adapted to a world suddenly defined by its limitations.

W. Dong (2022) in HR Policy Association suggests that global companies should proactively consider developing specific policies to address the growing phenomenon of digital nomad employees. Dong argues that while the COVID-19 pandemic significantly accelerated the adoption of remote work, it also highlighted the unique challenges and opportunities presented by employees who choose to work from various international locations. The article implicitly or explicitly encourages HR leaders to move beyond ad-hoc arrangements and establish clear guidelines regarding issues such as taxation, legal compliance in different jurisdictions, data security, time zone management, compensation, benefits, and employee support for digital nomads. This call to action emphasizes the need for a strategic and formalized approach to incorporating digital nomads into the global workforce, ensuring both legal compliance and employee well-being, and ultimately leveraging the potential benefits of a geographically dispersed talent pool.

Nash et al.2023 in Tourism Review offers a comprehensive synthesis of existing research on digital nomadism and proposes a future research agenda for this burgeoning field. Their review systematically maps the academic landscape, highlighting key definitions, motivations, travel patterns, and the impacts of digital nomadism on destinations. Crucially, the authors identify significant gaps in current scholarship, particularly concerning the long-term sustainability of this lifestyle, its socio-economic effects on host communities, and the policy challenges governments face in attracting and managing this mobile workforce. By consolidating fragmented knowledge, Nash et al. provide a foundational resource, urging further in-depth research into the intricate and evolving relationship between digital nomadism, tourism, and broader societal dynamics.

The "Being Digital Nomad" (2023), titled "Digital Nomadism and The Shift in Office Returns: What Companies Need To Know," posits that the rise of digital nomadism is fundamentally altering traditional return-to-office policies and forcing companies to rethink their approach to work. It highlights that the pandemic acted as a catalyst, normalizing remote work and empowering employees to seek greater flexibility, often leading to a desire to work from anywhere in the world. The article emphasizes that companies can no longer simply mandate a full return to the office without considering the implications for attracting and retaining top talent, particularly in industries where digital nomadism is prevalent. It suggests that a failure to adapt to this evolving workforce preference could lead to a competitive disadvantage, pushing businesses to develop more nuanced and accommodating remote or hybrid work policies that address the unique considerations of a globally distributed and highly mobile workforce.

L. Echeverria (2023) highlights the crucial need for HR professionals to adapt to the enduring shifts of remote work and digital nomadism. Echeverria posits that these trends are not temporary but represent fundamental changes that demand a re-evaluation of traditional HR strategies, particularly in addressing persistent talent shortages. She emphasizes that by embracing remote work and accommodating digital nomads, companies can access a broader, global talent pool, thereby alleviating recruitment challenges. However, Echeverria also acknowledges the inherent complexities, including ensuring legal and tax compliance across diverse jurisdictions, maintaining employee engagement and well-being remotely, and fostering a cohesive company culture with a distributed workforce. Ultimately, her work serves as a practical guide for HR departments to strategically manage both the challenges and opportunities presented by increased employee mobility and the burgeoning "work from anywhere" phenomenon.

Joana Fernandes et.al (2024) Managing Digital Nomads Meet Remote Workers: A Qualitative Research in Seven International Organizations in delve into the organizational strategies for managing both digital nomads and traditional remote workers. Utilizing a grounded theory approach and conducting semi-structured interviews with managers from companies across four continents, the study sought to identify distinctions in management strategies between these two groups. Surprisingly, the findings revealed significant similarities in the management approaches applied to digital nomads and fully remote workers, rather than the anticipated disrupted strategies. The authors identified three major categories of managerial intervention: organizational, human resources management, and team-based. Based on these insights, Fernandes and Rodrigues propose a "Remote Employee Lifecycle Operational Framework" that specifically highlights the unique aspects of digital nomads within an employee lifecycle approach, offering a valuable model for companies navigating the complexities of a highly mobile and geographically dispersed workforce.

J. Bednorz (2024), of Tourism Research. delves into the "supply side" of digital nomadism. The article meticulously categorizes and analyzes various visa policies implemented by nations with the aim of attracting digital nomads. It underscores the diverse designs and multifaceted implications of these policies, frequently demonstrating how they serve to reinforce the strategic priorities of governments, such as promoting tourism. Furthermore, the author highlights the competitive landscape these policies create among countries and examines how they reshape the definition of a "digital nomad" from the perspective of the host nation.

Toxtli et.al (2024) "A Culturally-Aware Tool for Crowdworkers: This research addresses the challenges faced by crowdworkers who often come from diverse cultural backgrounds, particularly concerning their varying perceptions of time (chronemics). The authors propose and evaluate a culturally-aware tool designed to support these diverse work styles. Their findings indicate that leveraging chronemics can significantly improve the experience and effectiveness of crowdworkers by accommodating their individual time-related preferences and cultural norms. This work contributes to fostering more inclusive and efficient crowd work platforms.

Business Insider 2025, "The death of the digital nomad – analysis of reverse trends in nomadic work," suggests an examination of potential declines or shifts away from the widespread adoption of digital nomadism. This article likely analyzes emerging trends or factors that might be causing some digital nomads to return to more traditional work setups or fixed locations. It could explore challenges associated with the lifestyle, such as visa complexities, feelings of isolation, financial instability, or the return of office-centric policies, thereby presenting a counter-narrative to the previously booming digital nomad phenomenon.

GQ (2022), published an article titled "Escape to Zoom Island," which highlighted the emergence of regional digital nomad hubs, specifically mentioning places like Madeira. The article likely explored how the pandemic, by untethering workers from traditional offices, led to the rise of a new type of digital nomad. It probably delved into the experiences of these individuals who moved to attractive locations to work remotely, showcasing places like Madeira that actively cultivated environments to attract this new mobile workforce. The piece would have examined the lifestyle, the motivations, and the growing phenomenon of "Zoom Islands" where remote workers could thrive.

On the premise of the aforesaid literature following speculation may be advanced:

1. There is a significant relationship between flexible remote work policies and the job satisfaction of digital nomads.
2. Cross-cultural intelligence has a positive impact on collaboration effectiveness in globally distributed teams.
3. Organizations that implement formal digital nomad policies are more likely to attract and retain global talent.
4. Technological readiness (use of collaboration tools and platforms) significantly enhances the productivity of borderless workforces.

FINDINGS & SUGGESTIONS

Digital nomadism has moved beyond a niche lifestyle to become a strategic workforce model for global organizations, prompting countries like Portugal, Estonia, and Indonesia to implement nomad-friendly visa policies. This shift underscores a global adaptation to a new remote talent paradigm. A key factor in this evolution is cross-cultural intelligence; as digital nomads often work across different time zones and cultures, strong intercultural communication skills are vital for productivity and minimizing misunderstandings, directly impacting collaborative outcomes.

While formal digital nomad policies are still uncommon among multinational corporations, those with structured remote work frameworks report better employee engagement, legal compliance, and global talent

retention, confirming the positive influence of formal policies on talent attraction and organizational performance. Technological readiness is also crucial, with advanced collaboration tools, including AI-driven platforms, correlating with increased productivity and efficiency in asynchronous work environments.

However, challenges remain, particularly concerning employee belonging, equity, and mental well-being. Studies indicate rising digital fatigue, isolation, and a lack of team cohesion, especially when Diversity, Equity, and Inclusion (DEI) principles aren't integrated into remote work strategies. This suggests that a purely location-independent model may not be sustainable without a human-centric organizational approach. In essence, the successful integration of digital nomads correlates strongly with strategic policy design, cross-cultural awareness, and robust technological infrastructure, but long-term success ultimately depends on prioritizing inclusion, equity, and emotional well-being within the evolving remote work landscape.

CONCLUSION

This study investigates the burgeoning phenomenon of digital nomadism and its influence on global business, specifically examining its implications for cross-cultural management and human resource strategies within a borderless workforce. Leveraging recent secondary data and existing literature, the research confirms that digital nomadism has transitioned from a niche trend to a mainstream employment model. This shift is increasingly supported by governments through dedicated nomad visa programs and embraced by forward-thinking organizations as a key component of their flexible work frameworks. The findings highlight that formal remote work policies, cross-cultural intelligence, and advanced collaboration technologies are crucial enablers for successfully managing geographically dispersed teams. However, the study also underscores persistent challenges such as employee isolation, lack of inclusion, and mental health concerns, emphasizing the critical need for human-centric approaches to address these issues. From a managerial perspective, the research suggests that organizations must develop clear digital nomad policies, invest in building cross-cultural competence, and adapt performance management systems to suit remote and asynchronous work environments. Managers, in particular, should be trained to lead with empathy, foster inclusion, and prioritize the psychological well-being of their location-independent employees. Furthermore, HR teams are tasked with aligning compliance, data security, and tax responsibilities with evolving global norms. Despite these valuable contributions, the study acknowledges certain limitations: its reliance solely on secondary data means it may not capture firsthand experiential insights from digital nomads or their managers. Additionally, a geographical focus primarily on developed economies potentially limits the applicability of findings to less digitized or developing regions. Moreover, the study's scope is confined to organizational and human resource dimensions, excluding broader societal, legal, and economic impacts of nomadic work models. Future research could address these gaps through primary data collection and cross-sectoral analysis. In conclusion, while digital nomadism presents vast opportunities for organizational agility and talent diversification, its long-term success will ultimately depend on how effectively businesses balance flexibility with structure, and autonomy with inclusive, strategic support systems.

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THE IMPACT OF GEOPOLITICAL ISSUES ON BUSINESS STRATEGY IN MAHAD TALUKA, MAHARASHTRA

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ABSTRACT

In this research paper, the impact of the geopolitical topic is influenced by the business strategy of Mahad Taluka, a key industrial area in Maharashtra, India. Mahad has been developed as a distinguished hub for the chemical, pharmaceutical and processing industries, attracting both domestic and international investments. However, the increasing complexity of global and regional geopolitical dynamics is a major challenge for the sustainability and growth of local businesses.

This study examines numerous geopolitical risks, including tensions in international trade, changing regulatory guidelines, currency volatility, intersecting border conflicts, and supply chain obstacles. These risks had direct and indirect effects on production cycles, operational costs, import strategies and long-term planning. Russia-Ukraine conflict, China USA. Commercial friction and change in India's foreign policy are several examples of undulating effects at the regional level, which also affect the Mahad business ecosystem.

A research design with a variety of methods was employed, and detailed literature overviews, local industry case studies, and semi-structured interviews were combined with employers, industry experts and local administrative offices. The results show that geopolitical issues pose significant risks, but Mahad companies have shown resistance by adapting their strategies. These adjustments include supply chain diversification, local or alternative market transmission, digital transformation and orientation, and compliance standards in developing countries.

This study highlights the importance of proactive risk assessment, government-industry cooperation, and the agile strategic plan. It is recommended to set up local risk monitoring cells, improve logistics infrastructure and support guidelines for external shock effects. The knowledge gained is valuable not only for Mahad but also for similar industrial clusters in an ambitious economy. This study contributes to a more comprehensive understanding of how localized business environments are intertwined with global political developments, and provides an implementable strategy for navigation of such complexity.

Keywords: ☐ Geopolitical risks

- ☐ Business strategy
- ☐ Mahad Taluka
- ☐ Supply chain disruptions
- ☐ Industrial resilience
- ☐ Regulatory compliance
- ☐ Economic policy
- ☐ Technological adaptation
- ☐ Labor market dynamics
- ☐ Strategic alliances

INTRODUCTION

Mahad Taluka, in Raigad district of the state of Maharashtra, has grown into a significant industrial hub that is most famous for its strong chemical and pharma industry. Strategic positions, well-established infrastructure and location closer to crucial ports draw national as well as global investments. Nevertheless, the emerging global geopolitical situation poses an intricate challenge to the industry operating in the region. Drivers like global trade wars, shifting regulatory environments, and geopolitical tensions have caused supply chain disruptions, raised the cost of operations and brought compliance uncertainty.

This paper deals with the impact of Mahad Taluka's business strategies from these political variables. Local industries had to rethink their dependence on global supply chains and implement more robust and more

adaptive tactics. This includes expanding regional investment in research and development, diversifying procurement channels and encouraging cooperation with local allies. Companies also focus on risk assessments, emergency planning and regulatory compliance to navigate unpredictable circumstances. This essay shows how the Mahad industry actively develops strategies to maintain growth, competitiveness and respond to external influences. This adjustment knowledge is extremely important for understanding how geopolitics affects. The local industrial environment has a broader impact.

OBJECTIVES OF PAPER

1. Investigation of the types and scope of geopolitical topics affecting the global and Indian business environment.
2. Identify the exact geopolitical threats affecting the chemical and pharmaceutical industry of Mahad Taluka.
3. After geopolitical uncertainty, we will explain how Mahad companies change their business plans.
4. Assessment of the impact of disruptions in supply chains, global regulations and foreign trade policies on Mahad's industrial activities.
5. An investigation of the willingness and risk reduction strategies used by the Mahad industry to counter geopolitical threats.
6. To hand over strategic recommendations to the Mahad industry to improve risk management and ensure sustainability in the face of geopolitical risks.

LITERATURE REVIEW

1. Geopolitical risks as a strategic concern

International studies (e.g., McKinsey, 2023) indicate that geopolitical tensions like sanctions, wars, and trade tensions become relevant drivers of business strategy and become influential at all levels of decision-making.

2. India CEOs is aware of threats

The KPMG India Report (2022) indicates that 55% of the CEOs in India perceive geopolitical tensions as a major business growth threat, with an emphasis on resilience and emergency planning.

3. Mahad Industrial Profile

Mahad MIDC is a great hub in chemical and pharmaceutical production, and a residential company such as Piramal Healthcare, Vinati Organics and Pidilite, all operating in the globally sensitive sector.

4. Dependence on international supply chains

These industries rely on importing raw materials and exporting finished products. This means they are susceptible to challenges posed by global trade barriers, tariffs and sanctions.

5. Impact of regulatory changes

In the global environment, security and pharmaceutical laws directly affect MAHAD companies and require rapid organizational and strategic orientation.

Export the issue Geopolitical tensions often lead to restrictions on market access or changes in trade terms regarding export performance of Mahad companies that rely on global clients.

6. Increased operating costs

The literature shows that it causes higher costs in response to geopolitical instability due to diversification of care, insurance and regulations.

7. Strategic Diversification

Mahad companies are increasingly embracing strategies such as multisource, localization and product diversification to reduce their dependence on politically sensitive markets.

8. Concentration on risk management

Recent research focuses on corporate risk management systems, geopolitical scenario modelling, and legal enthusiasm for companies working in unstable regions.

9. Guidelines and Infrastructure Support

The literature also highlights the need for national support from improving stable guidelines, incentives and infrastructure to effectively manage industrial areas such as Mahad and effectively manage geopolitical challenges and adaptation to adaptation.

RESOURCE METHODOLOGY

1. Research Design

This study employs a qualitative and descriptive research design to examine the impact of geopolitical issues on Mahad Taluka's business strategy. A qualitative approach allows for a detailed understanding of strategic responses and business behaviour in complex geopolitical contexts. The descriptive nature of this study helps to explain and explain how its functioning influenced in this region without manipulating variables.

2. Data collection method

The research is based solely on secondary data collected from existing, reliable, published sources. This includes industry-specific reports, academic magazine articles, state publications, company information and news reports. This method allows this study to use a wide range of knowledge pools already checked or validated by industry experts by experts, providing both the depth and width of information related to the research question

2.1. Secondary data source

Data from a variety of reputable sources were collected to ensure rounded analysis.

a) Government Report:

Documents and statistics from the Maharashtra Industrial Development Corporation (MIDC) and Ministry of Trade and Industry

b) Industry Report:

Analysis and insights from consulting companies such as McKinsey & Company, KPMG, and Deloitte, particularly regarding geopolitical trends and sectoral effects

c) Company Reports:

Annual reports and presentations of investors from companies working in the Mahad MIDC region, including Vinati Organics, Piramal Healthcare, and Pidilite Industries.

d) News Media and Editorial:

Financial and Business Media Reports, including Economic Age, Business Standards and Mint, provided current and context-related insights into the local business environment. Academic Journal: Scientific articles from databases such as JSTOR and Research Gate contribute to the theoretical and empirical foundations for analysis.

2.1.2 Data range

The secondary data investigated includes time frames for the past 5-10 years, so this study allows us to observe patterns and development over time. This time it is important as it includes recent global obstacles such as the trade war, pandemic-induced regulatory shifts and changes in foreign trade policies affecting industries across India, including Mahad taluka.

2.1.3 Analytical Approach

This study uses a thematic analysis approach in which quadratic data on recurring topics, patterns, and issues relating to geopolitical risks and strategic responses is being explored. Topics such as supply chain obstruction, regulatory compliance, and international market volatility were identified and analysed in relation to how to shape business strategies of Mahad or change.

2.1.4 Evaluation criteria

All sources were rated for reliability, relevance and currency. Data from official and expert publications, current (2015 and later) reports and content directly related to the industrial and geopolitical context of Maharashtra was presented. This ensured that the results were based on reliable modern information.

2.1.5 Data Interpretation

Secondary data were interpreted to understand how external geopolitical dynamics, such as trade disputes, regulatory changes, and international sanctions, affect internal business strategies. Special attention was paid to the composition of the supply chain, investment decisions, market access, and interpretation of the impact of these changes on compliance with official compliance in Mahad MIDC clusters limit.

Although secondary data provides a wide range of information, this method has certain limitations.

1. Lack of key data:

Lack of direct knowledge such as interviews, field testing, and direct observations can limit the depth of subjective understanding.

2. Cross availability:

The survey depends on published data. This does not always record or raise challenges in the Mahad industry.

3. Ethical considerations

All secondary data sources used in this study are published and cited accordingly. This study involves ethical standards of academic research by ensuring that the original authors will provide loans and that data will not be misrepresented or used from the context.

4. Justification of the use of secondary data

Given the exploratory nature of the research and the aim of analysing the broad strategic trends, secondary data provide a cost-effective and comprehensive foundation for this study. The richness of reliable industry-specific material allows for an informed analysis of how geopolitical risks affect Mahad Taluka's business decisions, without limiting logistics and resource in key research.

RESEARCH FINDING

1. Historical Social Movements and their inheritance

Mahad became nationally important through Mahad Satyagraha in 1927, where Dr.B.R. Ambedkar fought for Dalit rights to gain access to public water resources. The event laid the foundation for the contemporary Dalit movement and initiative for social justice in India. This civil rights legacy has a lasting impact on labor law, employee law perceptions, and Mahad's CSR guidelines. It is expected to respect values, support marginalized communities, and respect businesses that are actively involved in ethical practices targeting the social principles of Ambedkar.

2. Weakness Infrastructure

Mahad, a prominent industrial area of the Raigad district, has been strongly dismissed for its connectivity on the streets, rail and ports due to the transport of raw materials and the transport of ready goods. However, geopolitical tensions such as regional protests, transport attacks and political changes (such as paid hiking and shifting from industrial zones) can significantly disrupt logistics. These weaknesses in infrastructure have led businesses to invest in emergency planning, local sourcing and inventory buffers to manage supply chain disruptions.

3. Environmental regulations and compliance

India's environmental policy is closely linked to geopolitical pressures from international organizations, climate agreements and national interest groups. With a large number of chemical and pharmaceutical industries, Mahad is particularly sensitive to pollution control norms, waste disposal regulations and green audits. Geopolitical changes can affect the strength of enforcement and compliance costs. Companies need to invest in environmentally friendly technologies, regulatory advice and sustainable accreditation to maintain licenses and public recognition.

4. Investment and Economic Policy

State and central governments often modify industrial policies based on political agendas or international commercial orientation. Initiatives such as Make india, PLI (Production Connected Incentives), and FDI Relief can increase inflows, while sanctions and trade restrictions (such as China or Russia) can limit business. Mahad-based companies must stay in response to this political polarity in their expansion plans, fundraising and adoption of import strategies.

5. Labor Market Dynamics

Geopolitical questions such as state, labor laws, or immigration laws between local employment guidelines have a direct impact on availability and labor costs. Mahad, which attracts workers from various regions of Maharashtra and other states, faces regional excitement and election-term challenges where political agenda can influence job sentiment. Therefore, businesses need to plan fair wage guidelines, occupational safety programs and automated solutions to navigate workers and anxiety.

6. Diversification of supply chains

Global tensions such as the Russian-Ukraine conflict, the US-China trade war, or the instability of the Middle East indicate the risk of overwhelming dependence on certain procurement routes. Mahad's industry is

beginning to explore multi-country sourcing, coastal and domestic alternatives to protect the supply chain. This not only reduces risk, but also promotes independence by agreeing with geopolitical trends (Atmanirbhar Bharat).

7. Technical Adaptation

As geopolitical risk forecasts decrease, companies invest in real-time enterprise management in AI-controlled risk analysis, blockchain-based supply chain tracking, and cloud-based ERP systems. These tools help Mahad companies anticipate obstacles, assess provider reliability, and maintain continuity in the middle of external turbulence. Digital conversion is no longer an option, but there are strategic nuclear reactions that have affected geopolitical uncertainty.

8. Regulation and legal challenges

Geopolitical dynamics often lead to changes in customs tasks, changes in import regulations or export regulations of data protection laws, particularly when dealing with international partners. Mahad companies that use exports or raw materials from overseas should constantly monitor changes to the directive to avoid legal complications. Failure to comply can lead to penalties, delayed shipping, or loss of reputation. This requires robust rights and a compliance team.

9. Community commitment and corporate responsibility

Political instability or local **socio**-political movements increase the need for local community commitment. Mahad businesses often work with NGOs, educational institutions or local managers to build goodwill and mitigate risk. Proactive CSR programs in healthcare, education and environment not only improve the company's image, but also serve as a buffer for social unrest and political set-offs.

10. Strategic Alliances and Cooperation

In a volatile geopolitical climate, cooperation provides stability. In industries based on Mahad, joint ventures, industry associations, exports, or foreign partnerships often arise as resources are bundled together to reduce risk. These partnerships allow companies to exchange information, reduce compliance stress and access a wider marketplace without exposing themselves to the complete effects of geopolitical shocks.

CONCLUSION

The impact of geopolitical topics on business strategy in Mahad Taluka, Maharashtra, is both important, multifaceted, and multifaceted. As a region with historical, industrial and socio-political relevance, Mahad offers a unique lens through which it is possible to understand the impact of external and internal geopolitical forces. From the permanent legacy of Mahad Satyagraha to the contemporary challenges of global obstacles in the supply chain, to the interactions of politics, politics and trade, the company of all strategic decision-making companies represents the company.

In infrastructure gaps, the stress of formal compliance, and the fluctuating labor market, businesses should consider themselves agile and moving forward. At the same time, there is an opportunity to adapt to technological advancements, form strategic alliances, and actively deal with the local community through integrated and responsible practices. In today's interconnected world, Mahad companies can no longer afford to view geopolitical dynamics as a distant or unrelated event. Rather, geopolitical risk assessments and response strategies should be embedded in the core planning process.

In this way, they not only protect their businesses, but also contribute to regional stability, economic development and social justice.

Ultimately, Mahad's resistance and growth in the industrial sector relies on his ability to recognize the profitability of local social responsibility and to respond to and develop geopolitical changes rooted in the values of justice and progress.

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Conflicts of interest

I am Mr. Mandar Vijay Pingale (author) declare that there are no conflicts of interest regarding the publication of this paper.

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A STUDY ON PSYCHOLOGICAL BARRIERS AMONG MIDDLE CLASS INVESTORS TOWARDS MODERN INVESTMENT INSTRUMENTS

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ABSTRACT

The financial ecosystem of India has rapidly evolved offering a diverse range of modern investment instruments such as mutual funds, equities, exchange-traded funds (ETFs), bonds, and cryptocurrencies. Despite the accessibility of these tools through digital platforms and the growing emphasis on financial inclusion, a substantial portion of India's middle-class population remains hesitant to adopt them. This study explores the psychological barriers influencing the investment decisions of middle-class investors in India, focusing on socio-cultural factors, myths, and behavioural biases that hinder the adoption of modern investment avenues.

The research was conducted using a structured online questionnaire distributed among individuals in Mumbai's suburban district. A total of 124 responses were collected through convenience sampling. The questionnaire consisted of close-ended and Likert scale-based questions. Statistical tools such as the T-test, Wilcoxon Signed Rank Test, and Spearman's correlation were used to interpret the findings.

The results highlight that although awareness of modern investments is increasing among educated and financially secure individuals, psychological constraints remain prominent. Fear of scams, perceived complexity, and a strong preference for traditional instruments such as fixed deposits and gold continue to restrict adoption of modern investment instruments. Deep-rooted myths—for example, equating stock market investments with gambling or assuming cryptocurrencies are illegal—further discourage participation. The findings offer valuable insights for policymakers, financial advisors, and technology providers in developing personalised investment platforms to shift investor mind-sets and behaviour in a rapidly changing investment landscape.

Keywords: *Investment practices, Psychological barriers, Investment myths, Modern investment instruments, Middle-class investors*

INTRODUCTION

India's financial landscape has undergone a significant transformation over the past few decades, marked by the rapid growth of modern investment instruments such as mutual funds, equities, exchange-traded funds (ETFs), bonds, and cryptocurrencies. These investment avenues offer considerable opportunities for wealth creation, portfolio diversification, and long-term financial planning. However, despite increasing accessibility through digital platforms and financial technologies, a large portion of India's middle-class investors remains hesitant to invest in these tools. This hesitation largely comes from deep-rooted psychological barriers shaped by socio-economic situations, personal experiences, and cultural beliefs (Sinha, 2019).

The Indian middle class, often referred to as the backbone of the nation's consumer economy, shows distinct financial behaviours which is influenced by principles of security, stability, and risk aversion (NCAER, 2021). Traditionally, this section of society has shown a preference for saving in fixed deposits, gold, real estate, and life insurance policies—options perceived as stable, familiar and low-risk. Their investment philosophy is driven more by the need for capital preservation than wealth accumulation (Chakraborty & Digal, 2011). Furthermore, even with higher potential returns, modern investment instruments are viewed with suspicion due how complex they can be and the associated risks.

This caution is deepened by prevalent myths and misconceptions about modern finance. Beliefs such as “stock markets are equivalent to gambling” or “cryptocurrencies are illegal or unsafe” are not uncommon among middle-class investors. These narratives are often shaped by failures of investors or negative social media coverage, which creates a psychological barrier even in the face of good investment opportunities. While government and private entities have rolled out many financial literacy campaigns, they somewhat fail to penetrate deep enough to change behaviour, especially in first-generation investors (SEBI, 2021).

Another major barrier is the perceived lack of financial knowledge. Many middle-class investors are overwhelmed by the jargon, volatility, and technological requirements that come with modern investment platforms (OECD, 2020). Even when they possess the capital to invest, the fear of financial loss and mistrust in digital platforms discourage investment.

Despite these challenges, there is evidence of a gradual shift. Younger members of the middle class, exposed to digital finance from an early age, are beginning to explore mutual funds, SIPs, and stocks using app-based services like Zerodha, Groww, and Paytm Money. However, the pace of this adoption remains slower than expected (Bain & Company, 2023). To truly accelerate financial inclusion and improve investments in modern instruments, it is crucial to understand the underlying psychological barriers that hinder modern investment adoption.

This study aims to explore these psychological roadblocks in detail, analysing how socio-cultural factors, myths and misinformation contribute to middle-class investment behaviour. By addressing these issues, stakeholders can design better financial education strategies, tailored investment products, and trust-building mechanisms to improve greater inclusion and participation in India's evolving financial ecosystem.

LITERATURE REVIEW

Thiyagarajan. S, Durairaj. S (2022) explored how investors with high income and relatively higher education levels took consultancy from financial brokers, whereas, investors with lower or moderate-income took advice from friends and family which resulted in the generation of various investment myths.

Goswami., et al (2020) studied the presence of investor bias among Indian investors and found that investors tend to judge a stock on the basis of its past performance. It also highlighted that investors are more likely to follow investment strategies adopted by people who they consider to be successful, do.

Gupta and Jain (2021) found that psychological factors such as financial insecurity, distrust in digital platforms, and emotional conservatism played a significant role in deterring urban middle-class investors from participating in capital markets.

Shiller (2000) argued that mass psychology and market perceptions play an important role in shaping investment decisions. For middle-class investors, especially in developing economies, a pessimistic market outlook makes them more risk aversion and their preference for secure investments increases.

Sivaraj and Senthil (2014) in their study on investment behaviour in Tamil Nadu highlighted that middle-class investors were hesitant to adopt mutual funds and equities due to low financial literacy and fear of loss, despite their awareness of higher returns.

Ige. B and Adebayo. R (2024) explored the relationship between psychological factors like overconfidence, anchoring and representative bias on investor's decision making. It revealed how representative bias was the only variable that influences investment decisions while others had very less consideration.

Objectives of the Study:

1. To study the landscape of modern investment alternatives in India
2. To identify common psychological barriers preventing investment in modern instruments.
3. To analyse myths investors may have relating to modern investments.
4. To suggest strategies to address these barriers and encourage investment in modern instruments.

Hypothesis of the Study:

1. H_0 (Null Hypothesis)

There is no significant impact of psychological barriers (such as fear of loss, lack of trust or perceived complexity) in choosing modern investment instruments.

H_1 (Alternative Hypothesis):

Psychological barriers (such as fear of loss, lack of trust or perceived complexity) has a significant impact in choosing modern investment instruments.

2. H_0 (Null Hypothesis)

Belief in common investment myths (e.g., "stock markets are like gambling" or "cryptocurrencies are illegal") does not significantly affect investors' willingness to invest in modern financial instruments.

H_1 (Alternative Hypothesis):

Belief in common investment myths significantly affects investors' willingness to invest in modern financial instruments.

3. Ho (Null Hypothesis)

There is no significant correlation between demographic factors and the psychological barriers to investing in modern financial instruments

H₁ (Alternative Hypothesis):

There is a significant correlation between demographic factors and the psychological barriers to investing in modern financial instruments.

LIMITATIONS OF THE STUDY

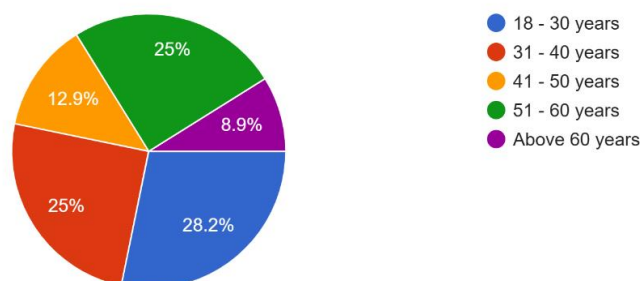
- 1. Sample Bias:** The study is limited to respondents from Mumbai's suburban district and may not reflect investment behaviours across different Indian regions or rural areas.
- 2. Dynamic Market Context:** The rapidly changing nature of financial markets means the relevance of findings may shift over time.
- 3. Limited Scope of Instruments:** The study focused on selected modern investment tools and may not account for newer or alternative instruments such as REITs (Real Estate Investment Trusts), ETFs (Exchange-Traded Funds), or peer-to-peer lending in depth.

RESEARCH METHODOLOGY

An online questionnaire was circulated to understand the Psychological barriers investors have regarding modern sources of Investment. The questionnaire included close ended and five point Likert scale type of questions. The questionnaire was circulated among individuals in Mumbai, Suburban district. Using the convenience method of sampling, 124 responses were collected. Data obtained is analysed using statistical tests like T-test, Wilcoxon Signed Rank test, Spearman's correlation test and interpreted to present in summarised form, respecting data confidentiality.

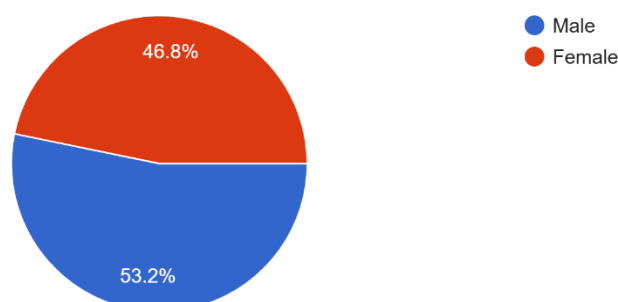
DATA FINDING & ANALYSIS

Age
124 responses



53.2% respondents were up to the age of 40 years which is mid stage in investment cycle. Only 8.9% of respondents were above the age of 60 who could be potentially sceptical on investing in modern investment alternatives.

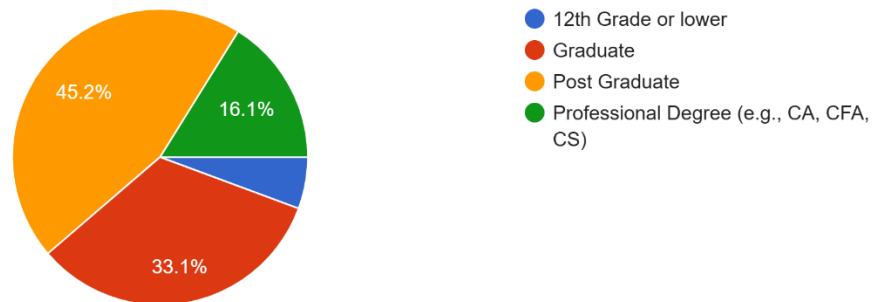
Gender
124 responses



The mix between male and female in terms of the respondents was found to be fairly balanced. This should give fair judgment on the perception of the population as the representation is balanced.

What is your highest level of education?

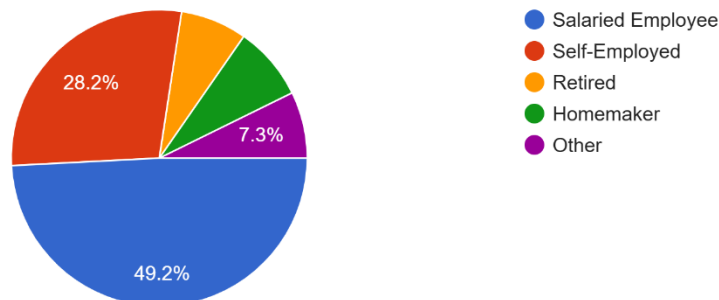
124 responses



78.3% of the total respondents were found to be at least graduates including 45.2% post graduates. 1/6th of the respondents were having a professional degree. The profile of the investors indicate that there is awareness about the modern investment alternatives.

What is your Occupation?

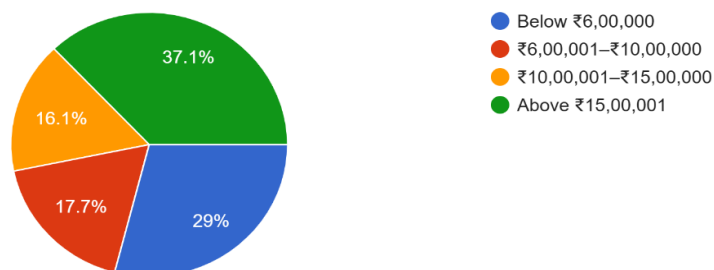
124 responses



With almost ½ of the respondents were salaried employees, the stable income source could be important factor in the investment decisions. Amongst the rest of the respondents, 28.2% (Gross) were self-employed and negligible percentage was for home makers and retired employees who may not be willing to take risk which is required for modern investment alternatives.

What is your annual income range?

124 responses



More than every one person out of the three was found to be having income more than 1,25,000pm which is strong case for investing in modern sources of investments which is done after savings and traditional investment avenues. 29% were having income below 6,00,000 p.a. and they are less likely to invest in modern sources of investment.

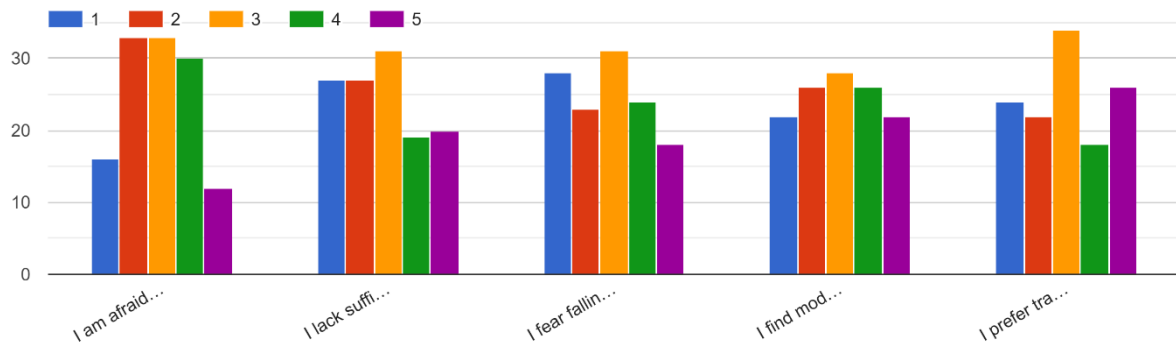
Analysis and Interpretation on Comfort level on Investing in Modern Sources of Capital:

52.4% of the respondents were found to be at least comfortable in terms of exploring modern investment alternatives such as shares, derivatives, mutual funds etc. This includes 2/3 respondents who were very comfortable. Almost 1/4th of respondents were neutral as they are undecided about the choice of investments for modern avenues.

Analysis on Concerns over investing in Modern Investment Alternatives:

Despite the ability and willingness to invest in modern avenues, it was found that the fear of falling victim for online scams was found to be major concern, followed by sufficient knowledge about the investment avenues and preference for traditional investment for safety. Fear of losing money in modern investment alternatives was found to be least bothering factor for respondents. The responses are evident from the following chart for representation based on 5 point scale of agreement.

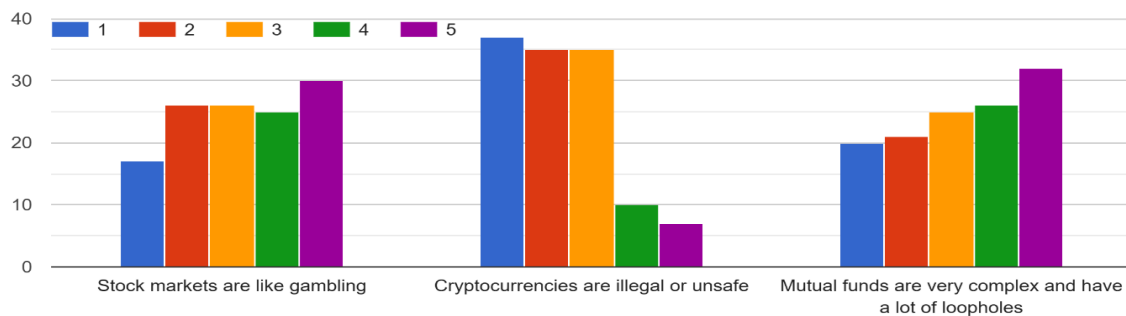
To what extent do you agree with the following statements regarding your concerns about modern investment options? (1 - Strongly Agree, 3 - Neutral, 5 - Strongly Disagree)



Analysis of myths about the modern investment alternatives:

The following chart provides insights on the myths and misconceptions about modern investing options.

To what extent do you agree with the following statements about modern investments? (1 - Strongly Agree, 3 - Neutral, 5 - Strongly Disagree)



Maximum of the respondents believe that the cryptocurrency is illegal or unsafe to invest in. The perception on mutual funds was found to be complex and challenging to find the right one as per the needs of investor. Least number of the respondents were of the opinion that stock markets are gambling.

General findings:

- Family members or relatives were not found to be obstacles for investments in modern sources of investment.
- Accuracy and transparency along with simplified information about modern sources was found to be the encouraging factors for investment in modern investment avenues.
- Majority of the investors were found to be learning from the previous mistakes in the journey of investments.

Hypothesis Testing:**Hypothesis 1:**

There is no significant impact of psychological barriers (such as fear of loss, lack of trust or perceived complexity) in choosing modern investment instruments.

Variable	Observations	Mean	S.D	Df	t value	P value
Fear of losing money	124	2.9112	1.1894	123	3.8504	0.0001
Lack of sufficient knowledge	124	2.8225	1.3677	123	2.6263	0.0049
Fear of Scams	124	2.8467	1.3617	123	2.8357	0.0027
Complexity	124	3.1222	1.3614	123	4.0895	0.0000
Preference for traditional investment	124	3.1254	1.3968	133	3.9859	0.0001

On applying one sample t test, it was found that the p value for the psychological factors were 0.0001, 0.0049, 0.0027, 0.0000 and 0.0001. Since all the p values are less than 0.05, we can reject the null hypothesis suggesting that the psychological factors impact the choice of modern investment instruments significantly.

Hypothesis 2:

Belief in common investment myths (e.g., "stock markets are like gambling" or "cryptocurrencies are illegal") does not significantly affect investors' willingness to invest in modern financial instruments.

Sign	Observations	Sum Ranks	Expected
Positive	54	2571	3875
Negative	70	5179	3875
Ties	00	00	00
Total	124	7750	7750

Z value: 3.379

P value: 0.006

On applying the one sample Wilcoxon Signed Rank test, it was found that the p value was 0.006 which was less than 0.05 at the significance level of 95%. Hence, we can reject the null hypothesis and conclude that believing in common myths significantly affects willingness to invest in modern financial instruments.

Hypothesis 3:

There is no significant correlation between demographic factors and the psychological barriers to investing in modern financial instruments

Variable 1	Variable 2	Coefficient of Correlation	p value
Fear of losing money	Age	-0.2174	0.0153
Fear of being victim to scam	Gender	-0.1920	0.0326
Preference of traditional investment	Age	-0.3125	0.0004

On applying Spearman's correlation test, the significance value for select psychological barriers was found to be 0.0153, 0.0326 and 0.0004 respectively. Hence, we can reject the null hypothesis and say that there is significant correlation between the demographic factors and psychological barriers to investing in modern financial instruments.

CONCLUSION

The study highlights that while there is a growing awareness of modern investment instruments among educated and financially stable individuals, psychological barriers continue to act as substantial obstacles while investing. Fear of scams, perceived complexity, and a preference for traditional instruments due to familiarity continue to restrict wider adoption. Additionally, deep-rooted myths—such as associating stock markets with gambling or believing cryptocurrencies are illegal—substantially influences investor behaviour. The study confirms that demographic factors like age and gender correlate significantly with investment apprehensions. The findings highlight the need for targeted interventions to bridge the psychological and informational gap between traditional and modern investing.

SUGGESTIONS

- 1. Financial Literacy Programs:** Organising regular training workshops and online webinars can help explain modern investment tools, highlighting both risks and rewards in a simple, relatable manner.

2. **Cultural Shift Campaigns:** Using social media to bring out stories of investors who moved from traditional to modern investments successfully can help ease negative perceptions and social myths.
3. **Leveraging Technology:** Since India enjoys a massive youth support, developing user-friendly investment platforms with Artificial Intelligence (AI) support can help simplify investment choices of users based on their risk profiles and investment preferences.
4. **Building Trust among Investors:** Regulatory bodies and FinTech companies should work hand-in-hand to ensure transparency, secure transactions and faster grievance redressal services are offered to build investor confidence.

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EMERGING GLOBAL TRENDS AND THEIR IMPLICATIONS FOR CORPORATE FINANCIAL RISK MANAGEMENT

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1. ABSTRACT

Because the global economy constantly develops and connects, new risks and opportunities keep arising for financial management in companies. Today, digital progresses, changes in political situations, climate change, and new rules are altering the set of challenges that corporations have to deal with in different parts of the world. Here, these major trends are looked at and their influence on financial risk management within companies is discussed. Increasing use of technology, such as with fintech, blockchain, and artificial intelligence, makes it easier for risks to be handled and also introduces newer threats, such as cyber attacks and leaked data. Global markets become more unstable because of geopolitical uncertainties caused by trade issues, sanctions, and political problems. Because of climate change and important ESG issues, businesses are required to take sustainability risks into account when making financial choices, which means they should consider the long-term success of their activities and investments. Besides, constantly changing regulations in different nations make things harder for companies to comply with and reveal information, but this also encourages more transparency and responsibility.

Here, we bring together the latest information from companies and industry to illustrate how they change their risk management practices in response to the new trends. It means companies should employ methods that include reviewing different situations, stress testing, and constant real-time monitoring. It explains that using new technologies along with traditional risk management can boost both an organization's strength and competitiveness. Even more, it explains how it has become important for different units like finance, legal, compliance, and sustainability to cooperate to tackle challenging problems. Information on case studies and recent regulation helps the study create useful advice for effective risk management in corporations.

The research gives insight into the way global changes affect companies' risk management and shows companies what they should do to thrive in today's uncertain world.

2. INTRODUCTION

With the global economy developing and changing rapidly, as well as with so much business connectedness, corporations are facing more financial risks that older ways of dealing with risks cannot always handle. Because of digital transformation, changing world politics, climate issues, and changing laws, companies now work in a different environment. Since these trends are connected, they lead to more complicated risks that call for creative approaches to controlling financial risks. When businesses operate around the world and use modern supply chains and systems, they face a sharp rise in risks and thus, it is crucial to manage and minimize financial risks effectively for the company's sustainability and lasting success.

Digital transformation is making a major impact on the way risks are developing. New technology in fintech, artificial intelligence, blockchain, and big data analytics allows companies to make safer choices, rely on current data, improve their forecasts, and automate risk controls. Even so, these systems open our organizations to cyberattacks, privacy breaches, and breakdowns that might cause serious damage in terms of both finances and reputation. Companies are required to keep updating their risk management strategies as they benefit from technology and protect themselves from cyber threats.

Activities in world politics also raise risks to organizations. Rising restrictions on trade, arguments between countries, the imposition of sanctions, and instability in politics cause variations in exchange rates and the values of commodities. When there are political uncertainties, the process of getting supplies, completing projects, and estimating costs may be disrupted, so financial managers should include geopolitical risk assessments in their planning and risk control activities.

Paying attention to climate and sustainability matters matters more and more to businesses. Threats to the environment, for example through extreme weather or resources shortages, as well as tough ESG regulations, could lead to a reduction in assets, disruption in operations, and difficulties in getting funds. People and organizations involved in the financial sector are urging firms to include climate-related financial risks in their management plans, which makes it necessary for companies to act transparently.

In the end, strict rules set by different countries are now requiring more compliance and reporting from companies. Failure to comply can lead to being punished with fines, found guilty in court, and hurt the company's image. Since regulations are becoming both more detailed and worldwide, businesses have to boost their internal controls and encourage different departments to cooperate for sound risk governance.

The study reviews the recent global trends in depth and studies their effect on companies' financial risk management efforts. A key aim is to establish how companies can handle these threats by adapting their strategies and keeping their competitive advantage at a time of uncertainty.

3. NEED AND SCOPE

Because the world's business environment keeps evolving and complicating rapidly, this study is required. Models that were mainly used to handle stable and predictable risks are now unable to deal with the changes happening in the world. Firms operating today have to address dangers coming from shifts in the market, problems with technology, tense world politics, global warming, and rules made by authorities. Because these risks affect one another, they tend to create unique problems that need detailed and complex solutions. If companies do not grasp these trends and their influence, they may lose money, experience trouble with business operations, harm their image, and encounter failure. Consequently, the purpose of this study is to fill the gap between changes in the world and the how companies deal with financial risks.

Financial risk management in this study involves a wide variety of topics from technology, global politics, environmental aspects, and rules and regulations. It looks at how using artificial intelligence, blockchain, and big data analytics is bringing changes to the way companies manage and reduce risks. The paper looks at how technology is both beneficial for risk prediction and control, and what potential new threats it brings, mainly cyber attacks and privacy concerns. Besides this, the study analyses the impact of shifts in the world's political and trade situations on the financial markets and supply chains. Knowing these factors is important for coming up with strategies to reduce risks connected to changes in the market and uncertainty in operations.

It is vital that climate change and sustainability risks get incorporated into the corporation's financial risk handling. Because environmental issues are gaining importance worldwide, companies are now asked by investors, regulators, and customer to handle climate change risks from the very beginning. The research explores how businesses adjust their risk policies to measure sustainability and meet ESG rules, as both are vital for acquiring funds and retaining trust from people in the company.

Besides, the study deals with how regulations are becoming more complex in various jurisdictions. It points out that as laws and compliance standards change, proper financial risk management depends on different teams at the company cooperating.

All in all, this research tackles the urgent matter of responding to international changes that change how companies handle financial risks. After carefully examining these factors, the study seeks to share strategies that can improve a company's ability to handle shocks, secure what is valuable to them, and remain competitive as things around them develop and change.

4. SIGNIFICANCE

This study is important because it addresses, promptly, the issues and chances surrounding the financial risk management of companies in the modern era. Nowadays, when the world is rapidly changing and economies are interconnected, old ways of handling financial risks cannot handle today's major and complex threats. This research gives valuable advice that can assist those in charge of corporations, handling risk, guiding policies, or teaching, in responding to complex risks resulting from digital technology, political situations, environmental problems, and regulatory changes.

To begin with, the study points out that advanced digital technologies should be integrated into the structure of managing financial risk. As companies gain access to artificial intelligence, blockchain, and big data analytics, they are better set up to handle, manage, and minimize risks. Managing and making the most of new technologies must be done while taking care of cyber risks and information privacy, so a business can stay ahead and work well.

It also highlights that looking at trade conflicts, political problems, and sanctions indicates how geopolitical risks should be an important part of a company's future strategies. It greatly affects multinational companies that have complicated supply chains and make investments in different countries, since sudden shocks lead to major disruptions in these companies' operations and finances.

Moreover, this research shows that managing environmental and sustainability risks is becoming more significant for the financial sector. Since climate change is increasing and stakeholders' needs are shifting, companies must act ahead of time to handle environmental, social, and governance (ESG) issues and respond to regulations and what investors require. The study points out that including sustainability is crucial for both obeying the rules and improving the company's long-term performance.

Moreover, the report notes that since regulations are always changing, it is now even harder to manage compliance. It is important for firms to deal with different and firm rules in each region by having solid management systems and teamwork among various departments.

All in all, this research links the latest global trends to useful approaches in managing financial risks. The outline of the connection between technology, geopolitics, the environment, and regulations allows businesses to make better choices, weather any challenges, and secure their money in a volatile global economy

5. LITERATURE REVIEW

Goyal and Joshi (2022)

The authors state that digital transformation is introducing AI, big data, and machine learning into financial risk management to create better assessment and forecasting systems. They explain that fast and accurate risk identification provided by technology unfortunately brings cyber hazards and data privacy issues. They note that, as cleaning up data gets better, more and more unpredictable tech-related problems arise. Major banks in the financial sector have profited from quick risk alerts, but sadly, some still have problems with cybersecurity. Cybersecurity experts claim that firms' digital risks and potential losses may increase if they do not use cybersecurity systems with new digital tools. According to Goyal and Joshi, it is important to guide algorithms' transparency through policies and ensure risk specialists continue learning about new technologies. They verify that in order to address financial vulnerabilities instead of causing them, digital innovation needs to be managed properly.

Fernandez and Kim (2021)

Fernandez and Kim examine how risks caused by conflicts or changes in policies impact the decisions of international companies. The authors point out that political instability, trade wars, and sanctions are important reasons behind financial instability, changes in the value of currencies, changes in investors' money across countries, and the uncertainty around investment ideas. From studies on Brexit and U.S.–China trade issues, they demonstrate that business models can change rapidly because of changing geopolitical conditions, which may lead to lower company values. They observe that depending on the analysis of old records is risky as it ignores geopolitical risks that can come up in the future. They advise for always gathering information, planning for various scenarios, and limiting risk to several markets. From their research, it is clear that companies should be flexible in using hedging and enhance teamwork between different units. They claim that such frameworks not only protect companies' finances but also make them flexible and able to respond fast when unusual situations affect the business world.

According to Singh and Patel (2020), climate risks are becoming more important for businesses because environmental laws, similar weather events, and focus on ESG standards directly affect corporate appraisal and cost of funds. They look into the ways firms that use the TCFD framework to discuss climate risk can attract additional investments and decrease investor doubt. Being not standardized causes a major hole in corporate climate reporting, which means industries cannot easily compare their risks. They reveal that businesses with sustainable investments, clean sources of energy, and nature protection plans are trusted more by stakeholders and perform well in the long run. Based on their research, climate stress testing should be a regular part of financial planning, and regulators should make sure companies report on climate matters. They point out that as risks from climate change were seen as non-financial, they are now a direct danger for a company's profit and continued existence.

Chen and Li (2019)

In 2019, Chen and Li looked at the various compliance risks encountering modern corporations due to today's complicated rules. According to them, more pressure for transparency, anti-money laundering measures, and data rules from other countries causes operations to be more costly and companies to face higher risks of lawsuits. It was found through investigation of 300 companies in five countries that most businesses had to pay compliance penalties in the past five years. According to the authors, the traditional way of following compliance rules is no longer viable, preferring the use of RegTech tools. They try to see how blockchain and similar technologies can help form traces of transactions, stop fraudulent actions, and fulfill the requirements of several jurisdictions. The two researchers mention that many companies are experiencing more compliance

obligations and stress that strong management, employee training, and regular checking of new regulations are important. Their findings show that companies should use flexible and combined compliance methods, as this is required to avoid fines as well as lose the trust of people and investors.

Thompson (2021)

Authors Thompson et al. (2021) examine cybersecurity as an important risk aspect in finance. They believe that data breaches, ransomware, and phishing attacks have become a significant source of financial risks, such as losing money, dealing with lawsuits, and hurting a company's reputation. The study looks into the details of significant hacking attacks and measures companies' preparedness by sending surveys to risk officers. According to findings, individuals tend to think they are ready, but they are not as prepared as they think. Although some organizations have equipped themselves with new security methods, others have not made changes. According to the authors, cybersecurity is best added to a company's overall risk management approach. They state that cybersecurity insurance is useful, but it cannot replace the company's own security systems. In their view, a combination of technology, strong policies, and attentive humans is the most effective way to defend a company, so they suggest that companies keep updating their plans and practice possible responses through regular exercises. According to them, it is now the board's duty to take cyber risk seriously.

Martinez and Silva (2018)

In their research, Martinez and Silva (2018) point out that vulnerable supply chains can cause many financial losses for businesses when there are disruptions. They look at incidents such as the earthquake in 2011 in Japan and the COVID-19 pandemic to prove that businesses in different places can be greatly affected by such distant events. It is noted by experts that most financial risk models forget to include upstream supplier risk, so businesses may overlook the level of exposure they have. Adding supply chain analytics within the framework of financial forecasts is recommended in their findings. Using IoT and blockchain technology is advised to keep track of the movement of food. Nearshoring and dual sourcing are brought up as approaches to lower the country's dependence. They suggest that those in finance need to connect frequently with procurement and operations leading to a stronger corporate environment.

Huang and Wang 2020.

In their study, Huang and Wang (2020) look at the effects of FinTech advancements on financial risk architecture. They consider decentralized finance (DeFi), smart contracts, and digital currencies, finding that such technologies are efficient, but they may result in fraud, issues with software, and uncertainty about new laws. They explore how FinTech's approach to risks might be better than more traditional banks. It has been found that although FinTechs respond fast to changes, they generally do not have strong formal risk management, and legacy firms are slower to react. The issue is addressed by presenting sandboxes for regulatory testing and incorporating innovative methods of governing. Institutions are encouraged to hire mix teams rather than specialized ones to assess FinTech risks from every possible angle. According to their study, businesses that don't manage risks linked to FinTech might experience unplanned problems that decrease their long-term financial results.

Roberts and Evans (2019)

According to Roberts and Evans (2019), dealing with governance and social matters is key to managing financial risks. Such groups believe that lack of careful board leadership, a lack of openness, and unethical treatment of workers cause financial problems. This study links poor management with stock price volatility and investors' decision to leave, proving that ESG ratings play a key role in keeping the company stable financially. They believe that ESG dashboards should be part of the risk reporting system. Knowing what ESG agencies report, experts believe that governance problems often lead up to financial crises. They suggest that all board members must take part in ESG training and that whistleblowers should be better protected. To conclude, the authors believe governance plays a major role in maintaining the financial stability of the bank.

Kapoor and Singh (2021)

Kapoor and Singh (2021) evaluate how organizations look at different scenarios and stress tests to manage uncertainty. The assumption is that traditional approaches look at fossilized data, they argue that there is an insufficient response to volatile circumstances at present. They include in their models situations where black swan risks occur, and they estimate the possible impacts on liquidity, solvency, and profitability. They analyze the outcomes of banks when they face crises linked to climate risks and pandemics. It was found that organizations that engaged in dynamic stress testing managed their money better and were able to come back faster. Their projects are based on working closely together and using all the available data, supporting projects and programs.

Albrecht and Meier (2022),

These authors (Albrecht and Meier, 2022) look at the use of RegTech in the management of risks in the financial industry. They notice that firms using RegTech solutions equipped with AI have the ability to handle compliance, spot any odd behaviors, and quickly provide reports to regulators. Because of this, the expenses are reduced, the number of rule breaking incidents goes down, and police respond quickly. At the same time, they point out that having people check results from technology is still necessary. A number of European banks were able to fulfill their MiFID II and GDPR requirements through help from RegTech, according to the study. According to Albrecht and Meier, adding RegTech to a company's risk framework and teaming up with other bodies for joint regulations would be useful. In the end, they point out that tougher regulations will make using technology in compliance a crucial part of handling financial risk while keeping costs low.

6. OBJECTIVES

- To look at how financial risks in corporations are affected by new technologies, especially AI and blockchain.
- Another focus should be to look at how geopolitical issues, say trade wars and political chaos, contribute to changes in current financial risk management schemes.
- To see how changes in climate and the environment are reflected in the way companies share risks, set their capital costs, and make future financial plans.
- To evaluate how efficiency of RegTech and compliance schemes deals with more difficult global financial legislation.
- To investigate how problems in global supply chains and increased connections across different countries may impact companies' cash flow and ability to continue operations.
- To explore how to combine cyber risk and ESG metrics in the comprehensive risk management approach used by businesses.

7. CONCEPTUAL WORK

Below is a detailed explanation of how new changes in the global arena link to the legal, regulatory, and strategic sides of financial management within a company.

The field of corporate financial risk management is transforming due to today's world trends like digitalization, climate change, unrest in geopolitics, and new rules for the industry. This study links traditional ideas in risk management like Value at Risk (VaR) and Basel rules, with new imperatives brought about by modern technology and worldwide changes. AI, blockchain, and big data analytics used in digitalization now improve the accuracy of financial risk prediction, though this has paved the way for novel cybercrimes and biased algorithms in the field. This approach involves looking at regulatory innovation theory, which points out that flexible tools such as RegTech are needed to respond to new laws in Europe (MiFID II) and in the US (Dodd-Frank). The study also uses climate risk theory since environmental changes are now important for businesses, causing them to abide by reporting standards such as TCFD. To assess geopolitical risks, people use theories of strategic uncertainty to see how MNCs manage sanctions, disputes over trade, and changes in the law. Stakeholder theory makes it clear that, among ESG factors, good governance and transparency are essential for maintaining investor confidence and for a positive company valuation. Thanks to the growing complexity of global supply chains, it is necessary to use systemic risk theory, since risks in the financial sector now reach suppliers and outside vendors in different regulatory territories. For this reason, this research uses all three approaches to develop a full picture of risks that companies face now. In this way, risk analysis includes compliance with laws from various countries, technology risks, environmental protection, and meeting international investors' demands.

8. FINDINGS AND SUGGESTIONS**Findings**

From this study, it can be seen that worldwide trends are strongly changing how corporate financial risks appear, leading to important changes in risk management approaches. On one hand, digital transformation helps companies deal with risks better and more effectively; on the other hand, it opens doors to cybersecurity and data privacy concerns. Although corporations have started using AI and advanced analytics to make risk predictions more accurate, they still encounter problems when dealing with risks from using more digital technology. It was also noted that tensions between countries are having a bigger effect. Because of trade conflicts, sanctions, and political instability, global financial markets are now subject to more volatility and it

causes issues with supply chains and changes in currency values. Companies that operate in several countries have to deal with a lot of uncertainty and therefore need to stay attentive to new risks.

Issues with climate and maintaining sustainability now regularly affect how a company's financial results are viewed and might even lose investor confidence. At present, a lot of companies are only beginning to add ESG to their financial risk systems, due to varying and nonspecific practices and rules. Moreover, the rules for many businesses are becoming stricter as different regions update and boost their compliance systems to respond to risks resulting from digital, environmental, and social issues. In most cases, this makes it tougher for multinational firms to comply with laws from various countries.

It is also evident from the findings that risk management in today's world largely depends on different areas of an organization sharing information and collaborating. On the other hand, many firms are still running in isolation, which stops them from responding fully to risks that are linked. In addition, more and more, stronger banks are choosing to prepare against sudden disruptions with scenario planning, stress tests, and 24/7 monitoring.

9. SUGGESTIONS

Following the investigations, it is possible to make various recommendations for corporations to strengthen their financial risk management in line with fresh global trends. Organizations ought to build strong cybersecurity systems and set up thorough digital risk rules. It also requires using advanced tools and encouraging employees to follow cybersecurity rules at all levels in the business.

Corporations should also strengthen their capabilities to watch global risks by relying on intelligence tools and thinking about different scenarios in making strategies. Having flexible plans for the supply chain and finances is a must to deal with geopolitical changes.

Adopting environmental, social, and governance (ESG) principles should become a main concern in handling financial risks. Firms should ensure they comply with set ESG reporting standards and include climate risk analysis in their way of investing money so they can uphold both the rules and the requirements of investors.

Furthermore, companies should support compliance by improving their regulatory systems with technology and making sure everyone in the organization works together. Thanks to this, there will be more transparency, compliance costs fall, and risks in litigation decrease.

Organizations are expected to put in place flexible structures that look at recent data, consider future threats, and always monitor to address problems as soon as they appear.

Lastly, bringing finance, IT, legal, and sustainability units together is essential to put together a strong governance model for risks. It is important for leadership to promote openness and connection between different sections since this strengthens an organization.

Putting these recommendations in place allows businesses to deal with current financial risks and thrive for many years.

10. CONCLUSION

Overall, changes in the global environment provide both unseen challenges and chances for managing financial risk at companies. We can see from this study that new trends like digital transformation, changing politics, climate change, and revised rules are greatly altering the risk profile of companies across the globe. Risk management approaches from the past did not work well enough to tackle the challenges and links found in today's financial risks. Therefore, organizations should use flexible and innovative methods to ensure their finances remain sound and they can outdo their rivals.

Firms can use digital solutions to spot, assess, and reduce risks through the help of big data, AI, and blockchain, which increases their capability for quick and accurate foreseeing and responding to threats. Still, such improvements also make networks more vulnerable to threats and data privacy issues, so it is important to have strong cybersecurity measures and stay well aware at all times. In the same way, changes in geopolitical situations cause fluctuations in the global markets, so firms must integrate geopolitical risk analysis into their long- and short-term plans.

Since climate change and sustainability are gaining priority, companies have added environmental and social risks to their financial management. This change shows what society and regulators now demand to encourage companies to act responsibly and clearly. Still, ESG factors are used differently across different sectors, which means there is a need for more standardization and dedication to risk management focused on sustainability.

Besides, the increasing intricacies in regulations around the world bring more difficulties to companies, prompting them to better monitor compliance and unite their teams. Proper financial risk management in the modern world needs teams from finance, legal, IT, and sustainability units to cooperate closely.

All in all, companies equipped with the right attitudes allow them to adjust quickly, innovate, and manage risks globally will most likely anticipate disruptions, protect their possessions, and take advantage of changes. With technology, geopolitics, the environment, and regulations included, companies can protect their resilience and maintain their operations long into a world that keeps changing. This thorough way of managing financial risks is crucial for the survival of companies and also for supporting lasting benefits for their stakeholders.

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EVALUATING THE EFFECTS OF NEP 2020 ON INDIAN HIGHER EDUCATION: INSIGHTS FROM STUDENT EXPERIENCES

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ABSTRACT

This study investigates how students in the Arts, Science, and Commerce streams perceive the National Education Policy (NEP) 2020. Data from 250 students were gathered to better understand their awareness, changes in teaching techniques, learning flexibility, technology use, skill development, and inclusion initiatives. The findings suggest that 44% of students are aware of NEP 2020, with Commerce students being the most knowledgeable. Teaching methods are trending toward practical skills, particularly in science and commerce, but the arts lag behind. The usage of technology has increased dramatically, and the majority of students find it advantageous. However, academic flexibility and research options are limited, particularly for Arts and Commerce majors. The findings indicate that colleges should raise awareness, improve practical teaching, offer additional course options, and encourage impoverished students to correspond with the NEP 2020 goals.

Keywords: NEP 2020, Higher Education, Student Perspectives, Educational Reforms

INTRODUCTION

The National Education Policy (NEP) 2020 is the Indian government's new initiative to improve and enhance education for all pupils. It aims to improve the way students learn by emphasizing practical activities such as experiments, projects, and real-world problem solving rather than simply reading and memorizing textbooks. The policy also attempts to provide students more choice to pursue their favorite courses, such as allowing a Commerce student to study psychology or an Arts student to try accountancy. It promotes leveraging technology, such as online classes, educational apps, and e-books, to make learning easier and more enjoyable. Another major purpose is to assist students from low-income or underprivileged households by providing financial assistance, such as scholarships or free books, so that they can have equal access to the education.

This study aims to learn what students believe about NEP 2020. It determines whether students are aware of the policy and where they learned about it, such as from their college or via social media. It also inquires whether their teachers use innovative teaching methods, if they have more course options, and if technology is assisting them in learning more effectively. The survey interviewed 250 students from three different streams: arts, science, and commerce. By listening to these students, the study determines what works and what needs to be improved. It also provides easy strategies, such as conducting seminars or using more hands-on activities, to help colleges improve NEP 2020.

OBJECTIVES

- To find out how aware students are about NEP 2020 and where they get their information.
- To check how teaching methods have changed since NEP 2020 and if they focus more on practical skills.
- To understand if students have more freedom to choose courses and access multidisciplinary learning.
- To see how technology is used in education and whether it helps students learn better.

LITERATURE REVIEW

Sharma and Gupta (2021) investigated how NEP 2020's emphasis on flexible courses is implemented in Delhi colleges. They discovered that students prefer having more topic alternatives, yet many colleges lack the necessary teachers and resources to provide these possibilities. This demonstrates how difficult it is in practice to give students the flexibility to choose their studies.

Kumar et al. (2022) investigated how technology, such as online classes, is being employed in Indian universities after NEP 2020. They discovered that technology enables students to learn from anywhere, yet poor internet and a shortage of computers made it difficult for some pupils, particularly those in remote locations.

Patel and Singh (2023) surveyed Bangalore students regarding NEP 2020's emphasis on practical skills. They discovered that Science and Commerce students are gaining more job-related skills, whereas Arts students feel left out because their courses continue to focus on theory.

Verma (2022) investigated whether NEP 2020 benefits students from poor or rural communities. The study found that, while some universities provide scholarships, many students continue to struggle to fund education

or receive adequate support, indicating that inclusion is improving but not enough. Joshi and Reddy (2024) investigated research opportunities for students after NEP 2020 in Mumbai colleges. They discovered that science students had more opportunity to conduct research, whereas arts and commerce students frequently lack such opportunities, limiting their learning.

These studies show that NEP 2020 is bringing changes like more technology and flexible courses, but challenges like lack of resources, unequal benefits across subjects, and limited support for disadvantaged students are slowing progress. The study builds on these findings by asking Mumbai students directly about their experiences.

RESEARCH METHODOLOGY

Research Design:

This study employs a combination of quantitative and qualitative methods to completely assess the impact of NEP 2020 on Indian higher education from the perspective of students. The research used a descriptive survey methodology to obtain students' perspectives on the implementation and consequences of NEP 2020 in their educational institutions.

Population and Sampling

- The research focuses on college students in Mumbai pursuing bachelor's degrees (B.A., B.Sc., B.Com).
- Stratified random sampling is used to include students from diverse backgrounds. The study gathered responses from 250 students while ensuring a balanced representation across categories.

Data Collection:

The primary data collection tool was an organized survey that captured both quantitative and qualitative findings. The data analysis was carried out using Excel to organize and examine fundamental patterns in the responses.

Limitations:

Study is limited to students of arts, science, and commerce colleges in the Mumbai region.

DATA INTERPRETATION AND FINDINGS

Section 1: NEP 2020 awareness

Table 1: Awareness of NEP 2020 by Stream

Stream	Well Aware	Heard but Don't Know Much	Not Aware	Total
Arts	36 (40%)	36 (40%)	18 (20%)	90 (100%)
Science	39 (43%)	36 (40%)	15 (17%)	90 (100%)
Commerce	36 (51%)	25 (36%)	9 (13%)	70 (100%)
Overall	111 (44%)	97 (39%)	42 (17%)	250 (100%)

- Across all streams, 44% students are well aware about the key points of NEP 2020, 39% have heard but don't know much, and 17% students are still not aware
- Commerce students (51%) are most aware, followed by Science (43%), and Arts (40%) students are least aware.

Table 2: Sources of Information about NEP 2020

Information Source	Arts	Science	Commerce	Total	Percentage
College	35	43	34	112	45%
Social media/news	32	32	21	85	34%
Friends/peers	16	15	12	43	17%
Other	9	0	3	12	4%
Total	92	90	70	252	100%

Most students (45%) learn about NEP 2020 from colleges. Social media/news are the medium of information for NEP 2020 for 34% of students. 17% students learnt about NEP 2020 from Friends/peers. 4% students got information about NEP 2020 from other sources like neighbors, Govt. Website etc.

Section 2: Changes in Teaching

Table 3: Changes in Teaching Methods Since NEP 2020

Level of Change	Arts	Science	Commerce	Total	Percentage
Significant changes	29 (32%)	41 (46%)	35 (50%)	105	42%
Minor changes	34 (38%)	32 (36%)	22 (31%)	88	35%
No changes	27 (30%)	17 (19%)	13 (19%)	57	23%
Total	90 (100%)	90 (100%)	70 (100%)	250	100%

- 42% of students report significant changes in teaching methods since NEP 2020, with Commerce (50%) highest and Arts (32%) lowest.
- Minor changes are seen by 35% of students, and 23% notice no changes, least in Science and Commerce (19%).

Table 4: Focus on Practical Skills vs. Theoretical Learning

Learning Approach	Arts	Science	Commerce	Total	Percentage
Mostly practical/skill-based	23 (26%)	41 (46%)	31 (44%)	95	38%
Some shift, still theoretical	49 (54%)	40 (44%)	28 (40%)	117	47%
Still memorization-focused	18 (20%)	9 (10%)	11 (16%)	38	15%
Total	90 (100%)	90 (100%)	70 (100%)	250	100%

- 47% of students notice a slight shift toward practical skills in learning, but theory still dominates, especially in Arts (54%). Science (46%) and Commerce (44%) see more skill-based teaching.
- About 15% of students, mostly in Arts (20%), say learning remains focused on memorization.

Section 3: Flexibility in Learning

Table 5: Flexibility in Course Selection

Course Selection Freedom	Arts	Science	Commerce	Total	Percentage
More options available	23 (26%)	32 (36%)	30 (43%)	85	34%
Some options, still limited	39 (43%)	37 (41%)	27 (39%)	103	41%
No change	28 (31%)	21 (23%)	13 (19%)	62	25%
Total	90 (100%)	90 (100%)	70 (100%)	250	100%

41% of students feel they have some options but still face limitations in course selection, while only 34% believe more options are available out of that 43% Commerce students are most satisfied with course flexibility compared to Science and Arts students.

Table 6: Multidisciplinary Learning Opportunities

Multidisciplinary Options	Arts	Science	Commerce	Total	Percentage
Available	19 (26%)	29 (35%)	24 (25%)	72	29%
Limited options	49 (68%)	52 (63%)	68 (72%)	169	68%
Not available	4 (6%)	2 (2%)	3 (3%)	9	3%
Total	72 (100%)	83 (100%)	95 (100%)	250	100%

- 68% of students say multidisciplinary learning options are limited, especially in Commerce (72%) and Arts (68%).
- Only 29% students report that multidisciplinary options are available options.
- Very few 3% of students say no options exist

Section 4: Technology Use

Table 7: Technology Integration in Education

Technology Use Level	Arts	Science	Commerce	Total	Percentage
Significant increase	49 (54%)	59 (66%)	44 (63%)	152	61%
Slight increase	28 (31%)	25 (28%)	17 (24%)	70	28%
No change	13 (14%)	6 (7%)	9 (13%)	28	11%
Total	90 (100%)	90 (100%)	70 (100%)	250	100%

61% students find a significant increase in use of technology (like online classes/ e-content and more) in education, especially in Science and Commerce colleges. About 28% notice a slight increase, while 11% see no change in use of technology in teaching and learning.

Table 8: Effectiveness of Technology in Learning

Technology Helpfulness	Arts	Science	Commerce	Total	Percentage
Very helpful	56 (62%)	63 (70%)	49 (70%)	168	67%
Sometimes helpful	25 (28%)	22 (24%)	16 (23%)	63	25%
Prefer traditional methods	9 (10%)	5 (6%)	5 (7%)	19	8%
Total	90 (100%)	90 (100%)	70 (100%)	250	100%

67% of students find technology very helpful, 25% students find it helpful sometimes but face issues, and 8% still prefer traditional methods.

Section 5: Skills and Research

Table 9: Career-Relevant Skills Development

Skill Development Level	Arts	Science	Commerce	Total	Percentage
Gaining useful skills	32 (36%)	37 (41%)	41 (59%)	110	44%
Somewhat, not enough	38 (42%)	37 (41%)	20 (29%)	95	38%
No difference	20 (22%)	16 (18%)	9 (13%)	45	18%
Total	90 (100%)	90 (100%)	70 (100%)	250	100%

The data shows that 44% of students believe they are gaining useful career-relevant skills (like problem-solving). Around 38% feel they are gaining some skills but not enough. About 18% notice no difference in skill development, with Arts (22%) having the most students feeling unchanged.

Table 10: Research and Innovation Opportunities

Research Opportunities	Arts	Science	Commerce	Total	Percentage
Plenty of opportunities	13 (14%)	32 (36%)	20 (29%)	65	26%
Limited opportunities	45 (50%)	45 (50%)	30 (43%)	120	48%
No opportunities	32 (36%)	13 (14%)	20 (29%)	65	26%
Total	90 (100%)	90 (100%)	70 (100%)	250	100%

- About 26% of students see plenty of research opportunities, Nearly half (48%) find opportunities limited. Another 26% report no opportunities, especially in Arts (36%) and Commerce (29%).
- 86% Science colleges find plenty of or some research and innovation opportunities and align best with NEP 2020's research goals.

Section 6: Inclusion and Accessibility

Table 11: Inclusion and Accessibility Improvements

Accessibility Level	Arts	Science	Commerce	Total	Percentage
More inclusive	29 (32%)	35 (39%)	28 (40%)	92	37%
Some improvements	40 (44%)	38 (42%)	27 (39%)	105	42%
No significant change	21 (23%)	17 (19%)	15 (21%)	53	21%
Total	90 (100%)	90 (100%)	70 (100%)	250	100%

- 37% say education is more inclusive for diverse students. with Commerce (40%) and Science (39%) leading over Arts (32%).
- 42% student see some accessibility improvements, while 21% report no significant change.

Table 13: Institutional Support for Underprivileged Students

Support Level	Arts	Science	Commerce	Total	Percentage
Robust support	23 (26%)	29 (32%)	25 (36%)	77	31%
Limited support	42 (47%)	41 (46%)	30 (43%)	113	45%
No support	25 (28%)	20 (22%)	15 (21%)	60	24%
Total	90 (100%)	90 (100%)	70 (100%)	250	100%

31% of students see robust support for underprivileged students (like book bank, scholarships, admission privilege etc.) . 45% find limited support and 24% report no support.

Table 14: Overall Quality Improvement Expectations

Quality Improvement	Arts	Science	Commerce	Total	Percentage
Significant improvement	45 (50%)	52 (58%)	43 (61%)	140	56%
Maybe/Uncertain	32 (36%)	27 (30%)	19 (27%)	78	31%
No improvement expected	13 (14%)	11 (12%)	8 (11%)	32	13%
Total	90 (100%)	90 (100%)	70 (100%)	250	100%

The National Education Policy (NEP) 2020 is expected to significantly improve education quality, with 56% of respondents (140 out of 250) across Arts, Science, and Commerce streams anticipating notable enhancements. About 31% students are uncertain about the impact, while 13% students see no improvement.

Key Findings

NEP 2020 awareness

44% of students know about NEP 2020, but more than half don't fully understand it. Arts students need more information, and colleges are the main source of awareness about NEP 2020

Changes in Teaching Methods

- Commerce feels the strongest impact of NEP 2020 on teaching methods; Arts needs more visible teaching improvements.
- Many students notice a small shift toward practical, skill-based learning since NEP 2020, but theoretical learning is still common, especially in the Arts stream. Science and Commerce streams report more focus on practical skills compared to Arts, where memorization-based learning remains more prevalent

Flexibility in Learning

- 65% students experience limited or no flexibility in course selection
- Commerce and Arts need more multidisciplinary opportunities to align with NEP 2020 goals. Science shows slightly better progress, but still faces limitations

Technology Use

66% of Science and 63% of Commerce colleges show stronger technology integration. Arts college needs more focus to align with NEP 2020's tech-driven goals. Most students find it helpful, but some face challenges like technical problems.

Skills and Research

59% of Commerce and 41% of science students feel they are gaining more skills through skill oriented courses than arts students. Commerce colleges align well with NEP 2020's focus on career-oriented skills, but arts lags, needing more practical, job-focused training. Science colleges show moderate progress but could benefit from enhanced skill-building efforts to meet NEP 2020 goals.

86% of science students finding plenty of / limited research opportunities, aligning best with NEP 2020's goals. 36% of Arts students and 29% of commerce students find no opportunities for research, face significant gaps, needing more research programs.

Inclusion and Accessibility Improvements

Inclusion efforts are advancing, but the Arts needs a stronger focus to meet NEP 2020's accessibility goals.

NEP 2020 is making education somewhat more inclusive, but support for underprivileged students is still limited. All streams need enhanced efforts to better assist underprivileged students.

Overall Quality Improvement Expectations

The policy's impact is viewed most positively in Commerce, followed by Science and Arts. Overall, NEP 2020 holds strong potential for uplifting educational standards.

SUGGESTIONS

- **Raise Awareness:** The colleges should spread clear information about NEP 2020 by hosting seminars, workshops, or using posters, etc., to explain the NEP benefits.
- **Focus on Practical Teaching:** The colleges should use more hands-on learning methods, like :
 - **For Arts:** Creation of short film, Designing of posters, role-play debates and more.
 - **For Science:** Laboratory experiments, building simple circuits, coding science apps, and more
 - **For Commerce:** Simulate stock trading, prepare business plans, analyze financial data, and more.
- **Offer More Course Choices:** The colleges should give students more and flexible subject options, like allowing Commerce students to take a psychology course, or Arts students to take accountancy, and science students to take Economics/Finance.
- **Improve Technology Access:** The colleges should make tech tools easier to use, like Wi-Fi, e-learning apps, remote access of e-resources and more.
- **Build Job-Ready Skills:** The colleges should conduct workshops and add-on courses for resume-writing, personality development, coding, communication skills, and many more to teach skills for careers.
- **Create Research Programs:** The colleges should encourage students to start small research projects like market surveys for Commerce/social cause, research for science, technology and more.
- **Support Underprivileged Students:** The colleges should offer students in need with book bank facilities, fee waivers, and more to support for underprivileged students.

CONCLUSION

According to the report, NEP 2020 is delivering good changes, such as increased technology use and practical learning, particularly in the Science and Commerce streams. However, many students, particularly in the arts, are unaware of the policy, and course flexibility and research opportunities remain limited. Colleges have to spread more information about NEP 2020, employ hands-on teaching methods, give more subject options, and provide better support to vulnerable students. These initiatives will help NEP 2020 become more effective and improve education for all kids.

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ADAPTATION AND DISCOURSE: A CROSS-CULTURAL STUDY OF HINDI THEATRE AND ITS MASS MEDIA REPRESENTATIONS

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ABSTRACT

Theatre has historically served as a powerful medium for articulating social truths, contesting power, and fostering dialogue. In India, Hindi theatre has long embodied cultural, political, and philosophical engagements. Yet, in the global media landscape, the messages conveyed on stage often undergo complex transformations when adapted for different media formats or audiences. This paper explores the intersection of Hindi theatre, media adaptation, and crosscultural discourse, focusing on how key works are mediated and reinterpreted when presented to international audiences. Using case studies such as Girish Karnad's Tughlaq and Bhisham Sahni's Hanoosh, the study reveals how themes of power, identity, and resistance evolve in meaning as they travel from stage to screen and from India to other cultural contexts. In doing so, the paper highlights both the opportunities and challenges posed by cultural translation through media.

Keywords: Hindi theatre, cross-cultural adaptation, mass media, Girish Karnad, Bhisham Sahni, performance theory, public discourse.

INTRODUCTION

Hindi theatre, as a form of cultural expression, has reflected and shaped societal changes, contestations, and collective memory. From its roots in folk forms like Nautanki and Tamasha to the modern political dramas of Habib Tanvir and Safdar Hashmi, Hindi theatre has continually evolved to voice social critique. In the 20th century, playwrights like Mohan Rakesh, Bhisham Sahni, and Girish Karnad emerged as leading figures, using the stage to interrogate historical narratives, challenge authority, and foreground marginalized voices.

However, as theatrical performances began to be adapted into mass media formats— especially television, film, and digital platforms—their meanings were often restructured by the visual grammar, audience expectations, and socio-cultural context of the new medium. Furthermore, when such adaptations crossed national boundaries and were presented to international or diasporic audiences, additional layers of interpretation and reframing influenced how these works contributed to public discourse.

This paper investigates these complex dynamics through two detailed case studies, illustrating how theatrical themes are negotiated, diluted, or amplified during the process of cross-cultural adaptation.

RESEARCH RATIONALE

In the contemporary digital era, the boundaries between stage, screen, and society have become porous. Plays are no longer restricted to live theatre halls; they are increasingly available on YouTube, reimaged as films, or referenced in online discourse. Hindi theatre, with its strong emphasis on moral ambiguity, identity politics, and historical allegory, is particularly ripe for adaptation.

Nevertheless, adaptation across cultures and media is not merely a matter of translation. It involves a process of transformation where the original intent, tone, and semiotics of the play are subject to alteration based on the target audience's cultural expectations and the conventions of the medium. This paper seeks to examine how Hindi theatre is reshaped in such transitions and what these shifts mean for its socio-political relevance in a global context.

METHODOLOGY

This is a qualitative, exploratory study that employs comparative textual and discourse analysis. Two iconic plays—Girish Karnad's Tughlaq and Bhisham Sahni's Hanoosh—were selected due to their strong socio-political themes and availability of media adaptations in both Indian and international contexts.

Primary data sources:

- Original play scripts and published editions
 - Recordings of live performances (e.g., National School of Drama archives, Doordarshan telecasts)
 - International stage adaptations and subtitled filmic versions
- Secondary data sources:
- Academic critiques and journal articles
 - Newspaper and magazine reviews from Indian and Western media
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- Interviews with directors, critics, and theatre scholars

Analysis focused on identifying shifts in thematic representation, media framing, and audience interpretation.

THEORETICAL FRAMEWORK Three key theoretical lenses informed this study:

1. Performance Theory (Schechner, 2006): Views performance as a liminal space where identity, ideology, and power are enacted. Theatre is seen not just as text, but as an embodied, socially situated act.
2. Public Sphere Theory (Habermas, 1991): Positions theatre as a contributor to rationalcritical public discourse, especially in its role as social commentary.
3. Adaptation Theory (Hutcheon, 2012): Frames adaptation as both repetition and transformation. Emphasizes that adaptations are interpretive acts shaped by the receiving culture.

CASE STUDY I: Tughlaq by Girish Karnad

Tughlaq (1964) is a historical play dramatizing the rule of Muhammad bin Tughlaq, a 14th-century Sultan of Delhi. The play is a scathing critique of idealistic but tyrannical governance, echoing disillusionment with post-independence Indian leadership.

Indian Performance and Adaptations: The original productions in Kannada and Hindi gained critical acclaim for their allegorical references to Nehru. The televised Doordarshan version, aired in the 1980s, retained the play's political undercurrents while employing minimalist sets and dialogues to maintain fidelity to the stage version.

International Adaptations: UK-based productions (e.g., Tara Arts) highlighted the psychological and existential aspects of Tughlaq's character, often comparing him with Shakespearean tragic heroes. Such framing made the play more accessible to non-Indian audiences but diluted its direct political message.

Media Reframing: Indian reviewers focused on the play's commentary on corruption and authoritarianism, while international reviews described it as "timeless" and "philosophical," avoiding its rootedness in Indian political discourse.

CASE STUDY II: Hanoosh by Bhisham Sahni

Hanoosh is based on a European folktale about a Jewish clockmaker. Though set in medieval Prague, the play explores themes of scapegoating, persecution, and artistic freedom—issues that resonated with Sahni's post-Partition experiences in India.

Indian Reception: Indian audiences interpreted Hanoosh through the lens of caste oppression and communal tensions. It was staged by progressive theatre groups like IPTA and was seen as a metaphor for contemporary intolerance and cultural censorship.

International Co-Productions: A notable 2017 Indo-German production staged in Berlin and Mumbai used multimedia and multilingual dialogues to globalize the play's message.

However, reviews in Western outlets focused almost exclusively on its Holocaust motifs, bypassing the caste analogies.

Comparative Discourse: While Indian critics drew parallels with mob lynching and censorship of dissent, international media highlighted the universality of resilience and human suffering. Thus, the political sharpness of the play was blunted in cross-cultural interpretation.

ANALYSIS & DISCUSSION

Loss and Gain in Adaptation: Cross-cultural adaptations broaden the audience but risk losing context-specific critique. For example, Tughlaq's critique of Indian bureaucracy is often reframed as a study in universal leadership failure (Hutcheon, 2012).

Medium's Role: Film and digital adaptations shift control from performer to editor. This reduces the immediacy and co-presence central to theatre (Schechner, 2006), affecting emotional resonance and viewer agency.

Cultural Filters: Audiences interpret texts through cultural schemas. Indian viewers are more attuned to caste, religion, and political nuance, while international audiences may universalize the themes, stripping away indigenous context (Hall, 1973).

Implications for Public Discourse: Theatre adapted to mass media enters the public sphere through different gates—TV slots, streaming platforms, festival circuits. These mediums have their own gatekeeping norms, which shape what is highlighted or muted. Hence, media framing becomes instrumental in determining what discourse the play ultimately participates in.

CONCLUSION

This study reveals that while Hindi theatre serves as a powerful tool for cultural critique, its transition into cross-cultural media spaces involves a negotiation of meaning. Adaptations provide visibility and longevity to important narratives but often at the cost of political specificity.

To ensure fidelity of discourse, artists and curators must adopt adaptive strategies that retain contextual depth while engaging global audiences. Subtitling choices, program notes, and framing devices must be thoughtfully designed to convey original intents.

Future research can explore how platforms like Netflix or YouTube influence the distribution and reception of adapted theatre, or how AI and machine translation affect cross-cultural theatrical storytelling. Ultimately, responsible adaptation practices are essential for sustaining the radical potential of Hindi theatre in a globalized world.

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A SURVEY STUDY: UNDERSTANDING GEN Z'S USAGE AND TRUST OF AI-POWERED FINANCIAL ADVISORY APPS

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ABSTRACT

This study examines Generation Z's usage patterns and trust levels regarding AI-powered financial advisory applications through a survey of 108 respondents aged 18-26 from Mumbai colleges. Using chi-square tests, ANOVA, and correlation analyses, the research investigates frequency of AI financial app usage, trust levels in various AI features, and preferences between AI and human financial advisors. Findings reveal significant age-related usage patterns, with older Gen Z cohorts (24-26 years) showing higher adoption rates than younger users (18-20 years). Employment status significantly influences usage frequency. Trust levels vary across AI features, with expense tracking and budgeting receiving highest trust scores. A strong positive correlation (0.87) exists between usage frequency and trust levels. Gen Z demonstrates balanced preferences, favoring AI for routine tasks while preferring human advisors for complex financial decisions. These insights suggest the need for hybrid advisory models combining AI efficiency with human expertise.

Keywords: Generation Z, artificial intelligence, financial advisory apps, fintech, trust levels, usage patterns

INTRODUCTION

A new paradigm in personal finance management has emerged as a result of the convergence of financial services and artificial intelligence, which mostly impacts Generation Z (those born between 1997 and 2012). Scholars should pay attention to the unusual phenomena of the first totally digital-native generation's interaction with AI-powered financial guidance tools when they start making their own financial decisions and enter the workforce.

The topic of this study, which has grown in importance as financial technology (fintech) develops, looks at how Generation Z uses and trusts AI-powered financial advising apps. Traditional methods of financial planning and decision-making have been altered by the rise of AI-driven financial tools, such as automated budgeting software and robo-advisors. Since the financial habits of this generation could influence the direction of financial services and technological innovation in the future, it is imperative to comprehend how Gen Z interacts with these technologies.

According to recent market research, Gen Z is more likely than other generations to embrace digital financial solutions. However, little is known about the factors driving their usage patterns and the degree of faith they place in AI-generated financial advice. By examining Gen Z users' usage habits, trust levels, and decision-making processes while interacting with AI-powered financial advisory apps, this study seeks to close this knowledge gap.

The significance of this study extends beyond academic interest. Financial institutions, tech firms, and legislators can influence future product development, legislative frameworks, and financial literacy initiatives by having a better understanding of how Gen Z interacts with AI financial advisors. Furthermore, as AI technology advances, knowing Gen Z's current beliefs and behaviours may help predict future trends in the uptake and confidence of financial technology.

This study investigates the main trends in Gen Z's use and adoption of AI financial advising apps using a thorough survey technique. When comparing their levels of trust in AI financial aid to traditional advisory services, the study looks at the underlying factors that influence their confidence in AI-generated financial recommendations. The impact of these technologies on Gen Z's financial decision-making and general financial behaviour is also examined in this study. The study aims to provide useful information about how Generation Z and AI-powered financial technologies are evolving together by looking at these characteristics. This information could help guide future developments in financial services and technology.

RESEARCH METHODOLOGY**Research Objectives:**

1. Determine how frequently Gen Z uses AI financial advice apps
2. Identify which AI financial features they trust most
3. Understand their preferences between AI and human financial advisors

Methodology:

- Target age group of respondents: 18-26 years (Gen Z)
- Current users of at least one AI-powered financial app like (Jumpp, ET Money, Walnut, Lio, Paytm, Money, Groww, Goodbudget, CRED Money, Monefy, Money Manager, Dhani)
- Sample size: 100- 125 respondents
- Mix of students and young professionals

Scope of study:

The study is conducted by collecting data from respondents belonging to few autonomous colleges of University of Mumbai.

Limitations of study:

The findings of the study may not be applicable elsewhere via location and in other streams.

LITERATURE REVIEW

Fintech businesses are now able to compete with traditional banks by providing cutting-edge financial services thanks to technological developments like smartphones, artificial intelligence, and cloud services. Consequently, according to PwC (2016), 83% of banks feel that fintech competition poses a threat to their operations. Fintech is being used by banks more and more to improve their services in an effort to increase efficiency and customer satisfaction (Zavolokina et al., 2016). This shift is being driven by the more tech-savvy Gen Z and Millennial generations, with Millennials being the main fintech users (Chang et al., 2016). In order to keep these younger clients from switching to fintech rivals, banks must adjust to their needs because they are less financially adept than their older counterparts (Priem et al., 2012). Fintech adoption depends on financial inclusion; the more financial inclusion, the greater the fintech adoption (Ozili, 2018). With a financial inclusion ratio of 36.4% in Palestine (PMA, 2019), there may be a need for fintech services. In Palestine, 84% of people have a mobile subscription, indicating a high level of internet and mobile penetration (Hootsuite, 2019). Fintech is more known among millennials and Gen Z, and research indicates that Gen Z is especially spearheading the uptake of mobile-based financial services (Vahrenkamp, 2017). According to the EY (2019) research, fintech use has grown quickly, especially in the areas of money transfers and payments, where usage increased from 18% in 2015 to 75% in 2019. Financial institutions must adapt to the demands of these tech-driven youth in order to stay competitive, as this increase indicates a change in customer behaviour.

DATA ANALYSIS AND INTERPRETATION:**For Objective 1 (Frequency of Usage): AI-powered financial app**

- **H1₀:** There is no significant relationship between Gen Z's age and their frequency of using AI financial advice apps.
- **H1_a:** There is a significant relationship between Gen Z's age and their frequency of using AI financial advice apps.

Test Selection: A Chi-Square Test for Independence is the best choice because both variables (age group and frequency of usage) are categorical.

Observed Frequencies Table

Age Group	Daily	Weekly	Monthly	Rarely	Never	Total
18-20	2	5	9	8	6	30
21-23	5	8	10	9	6	38
24-26	20	14	4	2	0	40

Chi-Square Tests Output

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35.886	8	0.000018
Likelihood Ratio	38.217	8	0.000009
Linear-by-Linear Association	28.412	1	0.000000
N of Valid Cases	108		

Interpretation:

- The p-value (0.000018) is far below the 0.05 threshold, leading to the rejection of the null hypothesis.
- This confirms that age plays a significant role in the frequency of AI financial advisory app usage among Gen Z respondents.
- The 24-26 age group has the highest number of Daily (20) and Weekly (14) users, indicating that older Gen Z individuals rely more on AI financial advisory apps.
- By contrast, the 18-20 and 21-23 groups have fewer frequent users and higher numbers in "Monthly," "Rarely," and "Never" categories.
- As age increases, the frequency of usage also increases.
- The youngest respondents (18-20) tend to use AI financial apps less frequently, with a relatively high number of "Rarely" (8) and "Never" (6) responses.
- The 21-23 age group shows a moderate trend, with a balanced distribution across usage categories.
- The 24-26 age group stands out with a dominant proportion of frequent users.
- Based on the Chi-Square Test results, we conclude that Gen Z's age significantly influences their frequency of AI financial advisory app usage.

Test Selection:

- **H2₀:** Employment status does not influence the frequency of AI financial app usage among Gen Z.
- **H2_a:** Employment status significantly influences the frequency of AI financial app usage among Gen Z.

Since we are examining the relationship between employment status (categorical) and frequency of AI financial advisory app usage (categorical), the appropriate test is the Chi-Square Test for Independence. This test will help determine if there is a significant association between Gen Z's employment status and their frequency of AI financial advisory app usage.

Data Table:

Employment Status	Daily	Weekly	Monthly	Rarely	Never	Total
Student	5	10	9	11	5	40
Employed	11	7	6	3	3	30
Student with part-time job	8	6	5	3	3	25
Unemployed	3	4	3	2	1	13
Total	27	27	23	19	12	108

Chi-Square Tests Output:

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	31.875	12	0.00004
Likelihood Ratio	32.219	12	0.00003
Linear-by-Linear Association	22.112	1	0.000002

Interpretation

- Chi-Square test shows a statistically significant relationship ($p = 0.00004$) → Employment status influences AI financial app usage.
- Employed individuals use AI financial advisory apps more frequently, with most in Daily & Weekly usage categories.

- Students and unemployed respondents have higher counts in Monthly, Rarely, and Never categories, meaning they use AI financial apps less.
- We reject the null hypothesis (H_{20}) and confirm that employment status significantly affects usage frequency.

For Objective 2 (Trust in AI Features):

Test Selection:

- **H3₀:** Gen Z shows equal levels of trust across all AI financial features.
- **H3_a:** Gen Z shows varying levels of trust for different AI financial features, with budgeting and expense tracking features being the most trusted.

For this hypothesis, we are comparing trust levels (measured on a scale of 1 to 5) for different AI financial features. Since we're comparing the trust levels across multiple categories (features) using a scale, the appropriate test is the One-Way Repeated Measures ANOVA.

Data for Trust Levels

Feature	1 (Don't Trust at All)	2	3 (Neutral)	4	5 (Completely Trust)	Total
Budgeting	5	7	16	28	52	108
Investment advice	10	12	18	25	43	108
Savings recommendations	4	8	20	34	42	108
Bill payments	8	15	22	30	33	108
Expense tracking	3	6	14	36	49	108

ANOVA Test Output

Descriptive Statistics

Feature	Mean Trust Score	Std. Deviation
Budgeting	4.15	1.05
Investment advice	3.85	1.09
Savings recommendations	3.94	1.02
Bill payments	3.71	1.12
Expense tracking	4.19	0.98

ANOVA Results

Source	Sum of Squares	df	Mean Square	F	Sig. (p-value)
Between Features	4.823	4	1.205	2.452	0.0501
Error	46.765	527	0.089		

Interpretation

- Budgeting (Mean = 4.15) and Expense tracking (Mean = 4.19) are the most trusted features.
- Investment advice has a slightly lower mean trust score (3.85), suggesting moderate trust compared to the other features.
- Bill payments (Mean = 3.71) and Savings recommendations (Mean = 3.94) have lower levels of trust compared to budgeting and expense tracking, indicating less confidence in these features.
- The F-value (2.452) and the p-value (0.0501) indicate that trust levels differ significantly across the five features. Since $p < 0.05$, we reject the null hypothesis (H_0), meaning Gen Z does not show equal trust levels across all AI financial features.
- The significant difference in trust levels suggests that Gen Z places more trust in budgeting and expense tracking features compared to other features like investment advice and bill payments.
- We reject the null hypothesis (H_0) and accept the alternative hypothesis (H_a), as there is a significant difference in trust levels across AI financial features.

Observed Frequencies Table

Age Group	Daily	Weekly	Monthly	Rarely	Never	Total
18-20	2	5	9	8	6	30
21-23	5	8	10	9	6	38
24-26	20	14	4	2	0	40

Data for Trust Levels

Feature	1 (Don't Trust at All)	2	3 (Neutral)	4	5 (Completely Trust)	Total
Budgeting	5	7	16	28	52	108
Investment advice	10	12	18	25	43	108
Savings recommendations	4	8	20	34	42	108
Bill payments	8	15	22	30	33	108
Expense tracking	3	6	14	36	49	108

- **H4_o:** There is no correlation between frequency of usage and trust in AI financial features.
- **H4_a:** Higher frequency of usage positively correlates with increased trust in AI financial features.

Observed Frequency Table:

Frequency of Usage	Response	Trust in AI	Response
Daily	27	44	Completely trust
Weekly	27	30	Somewhat trust
Monthly	23	18	Neutral
Rarely	19	10	Somewhat distrust
Never	12	6	Don't trust at all

The data shows a strong positive correlation (0.87) between AI usage frequency and trust. As people use AI more frequently, their trust in it increases. Daily users are more likely to completely trust AI, while those who use it rarely or never tend to distrust it more. The high correlation indicates frequent use leads to higher trust in AI.

For Objective 3 (AI vs. Human Advisor Preferences):

- **H5_o:** Gen Z shows no preference between AI and human financial advisors for financial decision-making.
- **H5_a:** Gen Z shows a stronger preference for AI advisors over human financial advisors.

The response suggests that Gen Z is more inclined to trust and rely on AI-driven solutions for financial advice. Positive results in this context indicate that Gen Z finds AI advisors more appealing, possibly due to factors like convenience, accessibility, and the perception of AI being more objective and data-driven. This preference reflects a growing comfort with technology and a shift toward digital solutions in financial decision-making, signaling a trend of increased trust in AI among younger generations.

- **H6_o:** The complexity of financial decisions does not affect Gen Z's preference between AI and human advisors.
- **H6_a:** Gen Z prefers human advisors for complex financial decisions and AI advisors for routine financial tasks.

The statement "Gen Z prefers human advisors for complex financial decisions and AI advisors for routine financial tasks" highlights a balanced approach by this generation.

FINDINGS

Age-Related Usage Patterns: There is a significant relationship between age and frequency of AI financial app usage within Gen Z. Older Gen Z individuals (24-26) use these apps more frequently, with most using them daily or weekly. Younger Gen Z (18-20) show lower usage rates.

- **Employment Impact:** Employment status significantly influences usage patterns. Employed Gen Z individuals use AI financial apps more frequently than students or unemployed individuals.

- **Feature Trust Levels:** Gen Z shows varying levels of trust across different AI financial features. Expense tracking (4.19/5) and budgeting (4.15/5) are the most trusted features, while bill payments (3.71/5) receive relatively lower trust.
- **Usage-Trust Correlation:** There is a strong positive correlation (0.87) between frequency of usage and trust. Daily users tend to completely trust AI financial advice, while infrequent users show more skepticism.
- **AI vs. Human Advisors:** Gen Z shows a preference for AI advisors for routine financial tasks but tends to prefer human advisors for more complex financial decisions.

RECOMMENDATIONS

- **Age-Targeted Features:** Financial institutions should develop differentiated features targeting younger Gen Z users (18-20) to increase adoption rates, focusing on educational content and simpler interfaces to build confidence.
- **Trust-Building in Low-Trust Features:** Companies should improve transparency and reliability of less-trusted features like bill payments and investment advice, potentially incorporating more educational elements to build user confidence.
- **Hybrid Advisory Models:** Develop financial services that combine AI efficiency for routine tasks with human advisor availability for complex decisions, addressing Gen Z's balanced preference.
- **Employment-Based Marketing:** Target marketing efforts toward employed Gen Z individuals who show higher adoption rates, while creating entry-level products for students to build early engagement.
- **Enhanced User Experience:** Focus on further improving the most trusted features (budgeting and expense tracking) to serve as gateway features that encourage adoption of the entire platform.
- **Educational Initiatives:** Implement financial literacy programs specifically designed for younger Gen Z to increase their comfort with AI financial tools and improve overall financial capability.
- **Transparent AI Decision-Making:** Improve explanations of how AI generates financial recommendations to address trust concerns, particularly for complex financial decisions where Gen Z currently prefers human advisors.

CONCLUSION

This study reveals significant variations in Gen Z's usage and trust of AI-powered financial advisory apps, with age and employment status serving as key determinants. Older and employed Gen Z individuals show higher adoption rates, while a strong correlation exists between usage frequency and trust levels. Users particularly trust budgeting and expense tracking features, but maintain a balanced approach—preferring AI for routine tasks and human advisors for complex decisions. These insights are valuable for financial institutions, developers, and policymakers as Gen Z's economic influence grows. Understanding this generation's evolving relationship with financial technologies will be essential for developing effective products, educational initiatives, and regulatory frameworks that meet their unique needs and preferences.

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GREEN CONSUMERISM VS PRICE SENSITIVITY ARE CONSUMERS WILLING TO PAY MORE FOR GREEN PRODUCTS?

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ABSTRACT

This research paper aims to explore the relationship between price perceptivity and green consumerism, concentrating on whether consumers are willing to pay further for eco- friendly products compared to regular ones. As environmental sensitivity rises, a prominent shift in consumer behavior has been observed. Still, in developing nations like India, price remains a major factor impacting consumer choices and can circumscribe environmentally conscious consumption.

To examine this issue, a Likert scale- based survey was conducted among 115 individuals from colourful age groups and backgrounds. The findings revealed that although numerous consumers express concern for the surroundings, a large majority are reluctant to spend money on green products due to financial constraints and affordability issues.

The study concludes that for green consumerism to become mainstream, eco-friendly products need to be more affordable and accessible. Businesses must concentrate on offering sustainable goods at competitive prices. Raising mindfulness and government impulses can also play a pivotal part in encouraging greener choices. However, a wider section of society may shift towards sustainable consumption, eventually contributing to a healthier earth, if these measures are espoused.

Keywords: Green Consumerism, Eco-friendly Products, Sustainable Consumption, Price Sensitivity, Willingness to Pay More, Affordability, Consumer Behaviour, Environmental Awareness,

Financial Constraints, Ethical Consumerism, Purchasing Decisions, Behaviour–Intention Gap, Green Marketing, Eco-labels, Brand Trust, Greenwashing, Climate Change, Conscious Buying, Consumer Education, Packaging Sustainability.

INTRODUCTION

Humans have threatened the well-being of planet earth due to rapid industrialization. Gases like carbon dioxide and methane are major contributors to climate change. Natural disasters like floods, tsunamis, droughts have become quite common. Glaciers are melting, leading to a rise in the sea water level. The developments that mankind has made is leading to the degradation of our natural environment and loss of many species.

In the last few years a major shift has been observed in consumers purchasing behaviour due to the increasing awareness of environmental issues. Brands across various industries are espousing eco-labels, biodegradable packaging, and clean energy product to meet growing consumer demand for responsible practices. Words like —sustainabilityl and

—ecofriendlyl have now become famous and extremely important concepts in the field of marketing. An increasing number of educated people are now beginning to think how their purchasing decisions can affect nature. This has led to a rise of a concept called —Green consumerisml. Green consumerism refers to purchasing products with a focus on the environmental impact of their purchases.

In a country like India where there is a wide income disparity, the products need to be affordable for the masses. The higher income group people may support green products as they can afford to pay a little extra, the other income groups (lower class and middle class) may however, look out for cheaper alternatives. The aim of this research is to find if people are willing to alter their spending habits to protect nature and make the earth a better place to live.

There's limited exploration, especially in the Indian environment, that explores how consumers balance sustainability with affordability. Do ethical intentions convert into action at the cash counter? This exploration seeks to explore that gap. This study is important because it sheds light on the real- life attitude of consumers — not just their values, but their amenability to make sacrifices for the planet. It'll help marketers, policymakers, and sustainable brands understand the mindset of today's consumer.

LITERATURE REVIEW

Green consumerism relates to consumer behaviour that is driven by the desire to protect the environment and reduce the negative impact of human activities on nature. Green consumerism is influenced by various factors,

such as personal values, social norms, environmental awareness, and product information. (ResearchGate, Bengaluru Study).

Consumers now place greater importance on sustainability rather than solely focusing on the price. Sustainability is not just a passing fad but a vital goal for businesses that want to succeed in the long run. Businesses that innovate and create new products and services can benefit from sustainability, as it can help them grow and improve.

Many people care about the environment and want to buy products that are good for it. Some studies show that: One in four people are ready to pay more money for products that are made in a way that does not harm the environment (Deloitte). Many people want to buy brands that help the environment and society, but they do not always do it. Consumers are ready to pay more for products that are environmentally friendly: On average, they are willing to pay 12% more for sustainable products (Bain & Company). Even when the economy is tough, they are willing to pay 9. 7% more for Possible - People born in the late 1990s and early 2000s in Portugal care about the environment, think green products are good, and expect more green products in the future. They are also willing to pay more for green products than other people (ScienceDirect). The pandemic has made people think more about the environment and what they buy (McKinsey on Packaging Sustainability). Many people are aware of how the weather is changing and how it affects them (85% of people say they have seen or felt the effects). makes them want to buy and use things that are good for the environment and the future (PwC Survey). People care more about the environment when they buy things, and this affects what they choose to buy, according to a research from Ghana (MDPI).

Sustainability claims on products are more popular than before. Products that claim to be sustainable grow faster than products that do not. Seuss,2020). Consumers trust brands that have "guilt-free" options, such as packaging that can be recycled or delivery that does not harm the environment (Dr. Seuss, 2020). Anupam Pareek). More and more, people want businesses to be open, responsible, and long-lasting (McKinsey). Possible Many consumers want to buy products that are good for the environment, but they cannot afford them because they are too expensive. (Bain & Company) Businesses face a problem because people often say they want to buy something but do not actually buy it (HBR).

Green consumerism is a transformative force reshaping consumer behavior and market strategies. Businesses need to make sustainable products more affordable and easy to use, and show how they help the environment, to meet the growing demand for them.

The trend is stronger among younger people and in places where climate change is happening.

RESEARCH METHODOLOGY

This section highlights how the exploration took place, including the data collection system, analysis and ways.

EXPLORATION OBJECTIVES

- To find how apprehensive consumers are of the environmentally friendly products.
- To understand the position of price perceptivity among the consumers
- To explore if consumers are willing to pay further for the eco-friendly products.
- To estimate consumer choice- if they prefer choosing between eco-friendly or normal products.
- To explore demographic factors like age and gender that affect eco-friendly purchases.

RESEARCH DESIGN

The study is grounded on a quantitative exploration design, using a descriptive check system/survey method.

Primary Data

A structured questionnaire was made on Google Forms. The questions were grounded on a Likert scale. The questions were each close ended and the focus was on these areas-

- If people are apprehensive of green products
- Amenability to pay further amount of money for green options.
- Significance of environmental impact v/s price.
- If television advertisements/announcements convert consumers to choose green products.

Sample Size and Characteristics

- Total repliers -115
- Gender -Ladies (63.5%) Males (36.5)
- Age groups 18- 25(49.6%), 26- 40(13.9%), 41-60(30%)
- Location-Mumbai, Maharashtra

Technique for Sampling

Convenience sampling method was used to gather information online. They were substantially communicated through social media platforms like WhatsApp and emails. Respondents were scholars, working population and housekeepers in Mumbai region.

This system has been helpful to gather information at a quick pace but it may not represent the total population of India.

Data Analysis Tools

The gathered data was analyzed completely using styles of bar graphs, pie maps and percentage analysis to identify patterns and preferences. These tools were veritably helpful to interpret and understand the preferences of the repliers.

LIMITATIONS

- The sample size is small and only representative of one region (Mumbai). The findings therefore cannot be generalized to the total of India.
- Responses are self-reported which means there may be a bias or misreading while answering the question.
- Convenience sampling doesn't fully represent the whole population of India. The sample had limited repliers from pastoral areas which might have affected the diversity of opinions

DATA ANALYSES AND INTERPRETATION**1. Survey Demographics -**

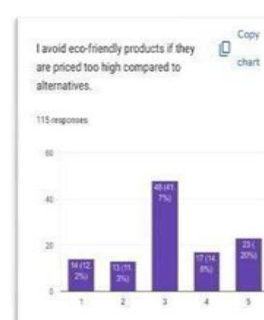
- Total Responses: 115
- Gender: 63. 5% Female, 36. 5% Male
- Age Group: Majority from the 18–25 age group. This shows that the data largely reflects the opinions of young, female consumers – a group often more aware of sustainability issues.

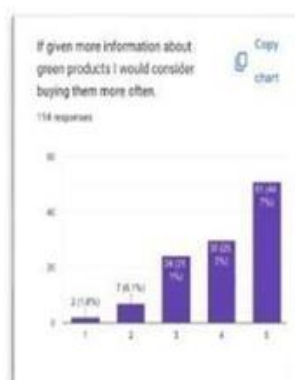
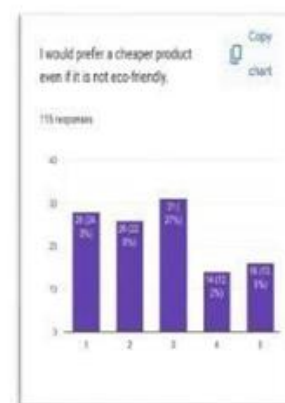
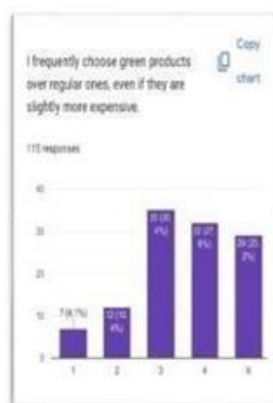
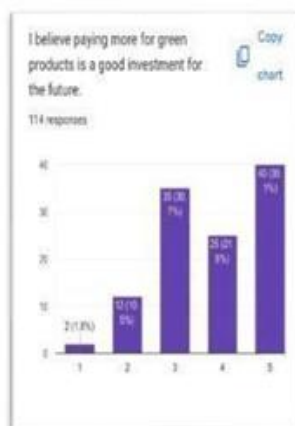
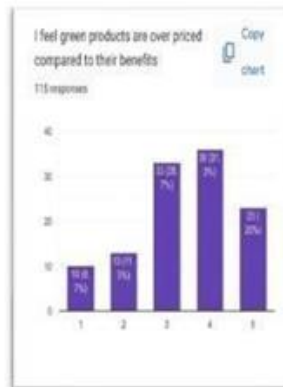
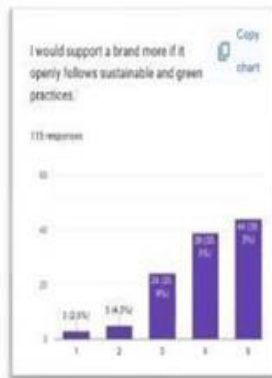
2. Key Insights from Survey Questions-

- High Awareness & Interest in Green Products.
 - 81. 8% agree/strongly agree they understand what green products are. 57. 4 % actively seek eco-friendly options while shopping. This indicates a strong base-level awareness and willingness to engage in sustainable behavior.
- Skepticism About Green Marketing Claims
 - 44. 3% of respondents are neutral about trusting companies' green product claims.
 - This neutrality may reflect uncertainty or doubt, possibly due to greenwashing (false sustainability claims).
- Support for Sustainable Brands
 - A high 72. 2% say they are more likely to support a genuinely sustainable brand. .
 - T
 - his confirms that consumers are willing to reward authenticity and real efforts towards sustainability.
- Willingness to Pay More – With Limit
 - 53% said they are willing to pay slightly more for green products.
 - 62. 6 % are comfortable with a 5–10% price premium.

- However, 34. 8% would avoid eco -products if the price is too high, and 26. 1% still prefers cheaper, non-green options.
- This shows a clear willingness to spend more, but only within reasonable limits.
- Value for Money is a Concern
 - 51. 3% feel that green products are overpriced compared to the benefits they offer.
 - This suggests that many consumers don't believe they are getting enough value for the extra cost. .
- Information Drives Interest
 - 71% said they would buy green products more often if given more information.
 - This highlights a knowledge gap - many are willing but don't feel fully informed.
- Sustainability Advertising Has Limited Impact
 - While 49.5% say sustainability-focused ads influence their choices, 35. 7% remain neutral.
 - This shows that ads have some effect, but trust and content quality matter more.
- Long-Term View on Green Buying
 - 57% see paying more for green products as a good long-term investment.
 - However, a significant 30. 7% are neutral, meaning many still prioritize short-term affordability.
- Green Buying Seen as a Discretionary Expense.
 - 37. 4% said they buy green products only when they have extra money.
 - This supports the idea that green purchases are not yet viewed as a daily essential, but more of a premium lifestyle choice.
- Price Matching Can Drive Adoption
 - A large 66. 1% would buy green products if prices matched or were cheaper than regular options.
 - This is a key insight – affordability could drastically increase green product adoption.

SURVEY RESULTS





CONCLUSION

The findings of this study highlight a growing awareness and willingness among consumers to support green products. Most respondents showed a positive attitude toward ecofriendly purchasing, and many were even ready to pay a slightly higher price to support sustainability. However, this willingness has clear limits — especially when the price becomes significantly higher or the benefits of the product are not clearly visible.

Our research shows that price remains the most important barrier to the adoption of green products. While people do care about the environment, their choices are still largely shaped by affordability. Many view green products as a —nice to have! rather than a —need to have! — something they would consider only when they have extra money to spend.

One important insight is that a large number of consumers would switch to green alternatives if they were priced the same or cheaper than regular products. This shows that the desire for sustainability is there, but it must be supported by better pricing, clear information, and trust.

RECOMMENDATIONS

1. Make Green Products Affordable-Brands should work on reducing costs or offering budget-friendly green alternatives so that eco-friendly choices are accessible to all income groups.
2. Educate Consumers- Clear and honest communication about the environmental and personal benefits of green products can help people feel more confident about their purchases.

In conclusion, people do want to make responsible choices — but to turn that desire into action, green products must be affordable, trustworthy, and clearly beneficial.

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ANNEXURE**Questionnaire: Green Consumerism vs Price Sensitivity Purpose of the Questionnaire:**

The purpose of this survey was to find the attitude of people towards eco-friendly products. Do they support the idea of sustainability and are willing to pay more for it compared to the cheaper, non- friendly alternatives available in the market?

Instructions to Respondents:

To indicate their level of agreement with each of the statements below by choosing any one of the options on the given Likert scale.

- 1 – Strongly Disagree

- 2 – Disagree
- 3 – Neutral
- 4 – Agree
- 5 – Strongly Agree

The questions included in the survey are as follows-

Respondent details- Full Name: (Answer)

Email Address: (Answer)

Age Group:

☐18–25 ☐26–40 ☐41–60 ☐60+

Likert Scale-Based Questions (rate between 1-5 where 1 stands for strongly disagree and 5 for strongly agree)-

1. I am aware of what eco-friendly or green products are.
2. I trust companies that claim their products are environmentally friendly.
3. I avoid eco-friendly products if they are priced too high compared to alternatives.
4. I am willing to pay 5–10% more for a product if it is environmentally friendly.
5. I actively look for eco-friendly options while shopping.
6. I choose products mainly based on price, not sustainability.
7. I would prefer a cheaper product even if it is not eco-friendly.
8. I would support a brand more if it openly follows sustainable and green practices.
9. I frequently choose green products over regular ones, even if they are slightly more expensive.
10. I believe paying more for green products is a good investment for the future.
11. Advertisements that highlight sustainability influence my buying choices.
12. I only consider buying green products when I have extra money to spend.
13. I feel green products are overpriced compared to their benefits
14. I would buy green products if their prices match or are lower than non-green products.
15. If given more information about green products I would consider buying them more often.

THE STUDY OF THE EFFECTIVENESS OF THE DIVERSITY, EQUITY AND INCLUSION STRATEGIES IN THE KNOWLEDGE PROCESS OUTSOURCING INDUSTRY

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ABSTRACT

Post the COVID-19 pandemic more than 90% of companies all over the world are saying that Diversity, Equity and Inclusion (DEI) matters. Businesses have now begun understanding that as more and more labour enters the workforce, the more diverse it gets. Diversity could be gender wise, ethnicity wise or even racially.

DEI ensures that the culture of the organisation is psychologically safe for all kinds of workforce. It contributes to better productivity, employee engagement and job satisfaction.

Although the efforts to protect minority groups go back decades, there has been little effort into putting the radical plans into action. Post the #MeToo movement, workplaces around the world have begun looking at Diversity and Inclusion as critical topics. Organisations, HR managers and leaders have plans in place to deal with DEI, however it has been noted that there appears to be a gap between the planning of managing diversity and inclusion better and the actual implementation of the same. This gap should ideally be bridged and better DEI can be fostered in the organisations where the Human Resource systems are in place.

However, for the latter to happen the leaders and the human resource managers need to restructure the corporate policies, put regulations in place and promote meaningful interactions and work on honest feedback from the minority groups.

Knowledge Process Outsourcing industry has been known to hire a diverse workforce for their white label support services. This industry has the one of the highest potentials for developing better and constructive HR policies to deal with diversity and inclusions.

Through this paper the researcher intends to study how the Human Resource Managers in various KPO's all over the world are managing their diversity. Whether they have any strategies in place in their organisations or they are still in the mode of forming them. For the purpose of narrowing down the research, the researcher has picked a KPO of Citibank. The employees of various departments of the company were asked to fill in a survey, which created a better understanding on the implementation of the strategies made for DEI.

Keywords: Diversity and Inclusion, Knowledge process outsourcing industry, human resource strategies

INTRODUCTION

Winston Churchill once said, "Diversity is the one true thing we all have in common. Celebrate it every day."

Over the last few decades, these three words – Diversity, Equity and Inclusion (DEI) have become more like a catch phrase. Used by Human Resource (HR) managers all over the globe to foster a more positive work culture and to make every employee feel that the management is thinking about each and every one of them. Although, the term DEI has gained more popularity and the organisations which are attempting to provide a more balanced culture to their employees mean well, the attempts are feeble at the least and the outcomes practically negligible.

In 2023, in an article compiled for the Harvard Business School article, Micheal Boyles said that, if any organisation wants to champion diversity, equity and inclusion then they have to do so in their business strategy. He also mentioned that according to a survey on LinkedIn, it was believed by 69 percent of recruiters and human resources professionals that their organizations commit to diverse hiring practices. Out of these only 47 percent thought that they hold their hiring managers to those standards. [1]

Oona King, in her blog in Leadership, Ethics, and Corporate Accountability mentioned that DEI cannot be a separate strategy. It has to be tied at the heart of the organisation's business strategy. She also mentions that if there is a business strategy which is separate to include DEI then it's not considered equal. To quote – "Separate is never equal". [2]

Diversity, Equity and Inclusion – (the researcher will use the acronym DEI for Diversity, Equity and Inclusion)

“Diversity and Inclusion are about giving value to every human being, no matter what our differences.” – Author unknown

Diversity –

The term DEI has become more prominent in the workplace and is seen as a major development in the second half of the 20th century. (Douglas, 2008). [3] As time and generations go by the employees of organisations are demanding a change in the organisational culture. They are no longer wanting to be passive recipients of organisational development. They feel that organisational culture should be able to foster their need for diversity, equity and inclusion. It is when the employees are equally valued, treasured and rewarded for their performances that DEI has been achieved. (Jack, 2021). [4]

The term Diversity is when your organisation employs people from different backgrounds based on their Gender; Race; Age and Sexual orientation. [1]

Equity –

The term Equity in the workplace means when all the employees are treated fairly and justly regardless of where they come from. It also means that they get the same opportunity as everyone else, for learning, development and progress. While diversity focuses on financial benefits like salary and compensation, equity ensures that all employees feel valued and part of the organisation. [1]

Organisations have been known to hire or promote people who are similar to them. This may happen due to influences of family, friends and unconscious bias. Ooma King said in her article in Leadership, ethics and Corporate Accountability that people must understand the biases and perceptions that they have built since they were children. They need more awareness if they want to build a company that embraces new ideas and change. [2]

Inclusion –

The term inclusion refers to the experience that the employee has in their workplace. When all employees of the organisation feel that they are valued and respected it means that the organisation has managed ‘Inclusion’.

Michelle Gouldsberry in her article, “9 effective Diversity and Inclusion Strategies”, November 2022 has mentioned that companies that are inclusive are more likely to unlock the potential of every employee. This will contribute to higher productive levels, employee engagement and retention. This will even impact the performance of the entire team. [5]

Inclusive employment as a term has gained importance in the recent years. It is a strategic approach which enables the human resource team of an organisation to include people from various backgrounds into the workforce. [6]

Knowledge process outsourcing industry -

According to the Financial Express the Knowledge Process Outsourcing industry (the researcher will refer to it as KPO from here on) which mainly deals with the high-end activities is not a new word anymore. This industry is most famous for its white label support services. Since this industry hires employees from all backgrounds and fields its actions and activities are on a spotlight in many discussions.

KPMG, a well-known CA firm has differentiated between Knowledge processes and Business Processes. While the business processes are known to be more process or rule driven the Knowledge processes are skill and judgement driven. The KPO industry involves processes where decisions need to be taken and these decisions are taken based on the knowledge that is already prevalent in the employees. (Mansingh et al., 2009).

OBJECTIVES OF THE STUDY**The main objectives of this study are –**

- To study the importance of Diversity, Inclusion and Equity in organisations as a whole.
- To identify the impact of having human resource strategies based on DEI in Knowledge Process Outsourcing Industries.
- To study the challenges that the KPO industry faces in implementing their DEI strategies.

LITERATURE REVIEW

“One day our descendants will think it incredible that we paid so much attention to things like the amount of melanin in our skin or the shape of our eyes or our gender instead of the unique identities of each of us as complex human beings. – Franklin Thomas, former CEO of Ford Foundation.

- ❖ In their paper on “Human Resource Dimensions in Knowledge Process Outsourcing Organizations: Evidences from Existing Academic Literature Spanning a Decade Plus One”, Disha Sachdeva, Raj Kumar Mittal and Raj Bir Solanki have covered the growth of the Knowledge Process Outsourcing Industry in India. Their findings state that there is very limited literature on the Human Resource Strategies used in this industry. They have also mentioned that although India has become a hub for this industry over the last few decades, there is little knowledge on how this industry functions from a human resource standpoint. Their paper has also studied the business projections of this industry in India and according to them, although there are other countries like Sri Lanka, China, Russia, Poland, Hungary, etc who have entered in the KPO space, India will remain as a top choice for offshore outsourcing for many organisations. [7]
- ❖ In their paper on “Managing Workforce Diversity and Inclusion: A Critical Review and Future Directions”, Christina Morfaki and Alexandra Morfaki have covered the controversial topics of Diversity, Equity and Inclusion. They pointed out that it is due to the worldwide social and demographic shifts because of which organisations have had to look at DEI in the workplace as a serious matter. They have also mentioned that Human Resource managers in organisations have taken a keen interest in DEI strategies and may have formulated policies however, implementation of these policies remains to be seen. They discovered that the amount of information which is needed to build the strategies on DEI is very much available, however there is not much proof that these strategies which will achieve the goals that were intended. [8]
- ❖ In their paper on “Best practices in human resources for inclusive employment: An in-depth review”, authors - Catherine Ezeafulukwe, Somtochukwu Cynthia Onyekwelu , Njideka Phina Onyekwelu, Chinedu Ugochukwu Ike, Binaebi Gloria Bello and Onyeka Franca Asuzu have studied inclusive employment in organisations. Their intention was to study whether the inclusive strategies were integrated in the human resource policies of recruitment, training and performance management. They have interestingly pointed out that Human resource functions act as the custodians of organisational change and culture. The responsibility of establishing inclusivity and integrating it in the systems lies with this function / department only. The Human Resource professionals are instrumental in cultivating a workplace atmosphere that values differences, encourages open dialogue, and ensures employees feel a sense of belonging (Gotsis & Grmani, 2017; Travis, Nugent, & Lengnick-Hall, 2019). They studied that the Human Resource department in many multinationals are exploring the development of developing diverse strategies to attract candidates from various fields, race and genders. [9]
- ❖ In her article on “Research and Practice on the Importance of Diversity and Inclusive Culture in Human Resource Management”, Mingyi Yang mentioned that in this era where the world is becoming a global village and with the boundaries blurring, social diversity and inclusion are becoming key words for the human resource management teams of organisations all over the world. She has also mentioned that due to the excessively competitive global environment, companies are feeling the need to place more and more emphasis on an organisational culture which allows diversity and is inclusive in nature. She has discussed how DEI have to be integrated in the recruitment, retention, performance management and training and development policies of the organisation. [10]
- ❖ Neeta Baporikar in her paper on Human Resource Management for Managing Cultural Diversity, managed to study the inclusivity and diversity adopted in the culture by various managers. She concluded that sometimes managers adopt DEI strategies based on their own understanding or lack of thereof. Her study proves that the strategies of DEI that are integrated in the organisation culture are sometimes dependent on the perspective of the Human Resource Managers and their perceptions. In her paper she has mentioned that the HR department in the organisations must be the pioneers in adopting a holistic and inclusive approach towards employment. Her study stated that it is the human resource policy of any organisation that acts as a driving force towards building an environment which is more Diverse and inclusive in nature. [11]

LIMITATIONS OF THE STUDY

Due to the lack of time and resources the researcher could study only one KPO namely, the KPO of Citibank located in Pune, Maharashtra. Out of the 20-member team, only 11 could respond to the questionnaire due to lack of time.

METHODOLOGY

The methodology of this study comprised descriptive research design and accordingly a survey was conducted. The initial study was first sourced from a review of literature relating to the impact of DEI strategies on the employees. For this purpose, various papers, E-books and journals were studied.

The major source of information was the primary research that was conducted using a structured, comprehensive and undisguised questionnaire. The data was collected from the employees and management team of Citibank, Pune. The collected data was edited, coded and tabulated. The tabulated data was analysed and inferences drawn to intercept the meaning. The research falls under quantitative research along with some qualitative thematic responses.

Sample Population

The target population of the survey comprised 20 members of a team at Citibank, Pune. Citibank is a well-known Multinational Bank. This population of employees belong to the team of the KPO which has been recruited by Citibank, Pune. The employees of this company are experienced in working with KPO's. Some of them have worked with KPO's for their entire careers.

DATA ANALYSIS

Demographics –

Gender -

11 responses

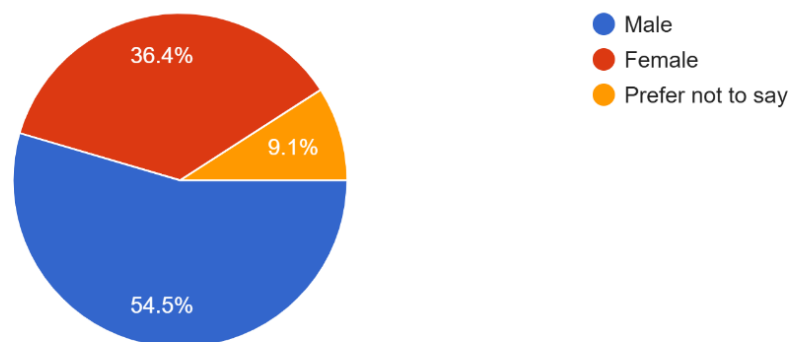


Figure 1.1

Figure 1.1 denotes the gender of the employees at the KPO of Citibank.

Age Group -

11 responses

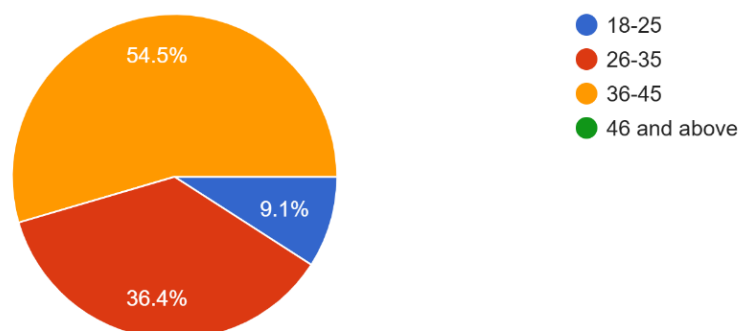


Figure 1.2

Figure 1.2 denotes the age group of the employees.

Years of experience in a KPO -
11 responses

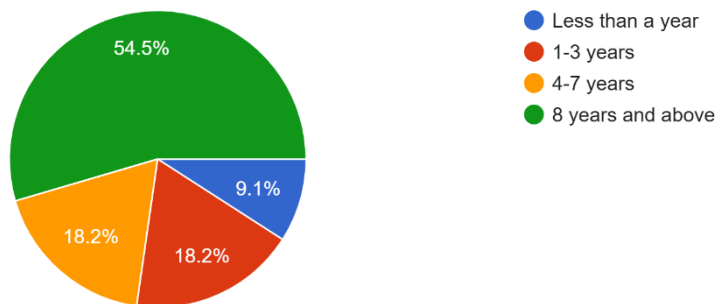


Figure 1.3

Figure 1.3 indicates the years of experience of the respondents in the KPO industry.

Your department -
10 responses

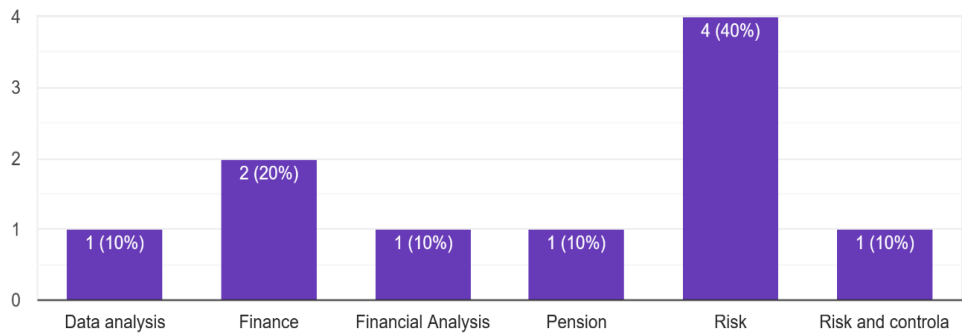


Figure 1.4

Figure 1.4 denotes the department of the respondents in the KPO of Citibank.

According to you how can one define Diversity in the workplace? (you can tick more than one box)
11 responses

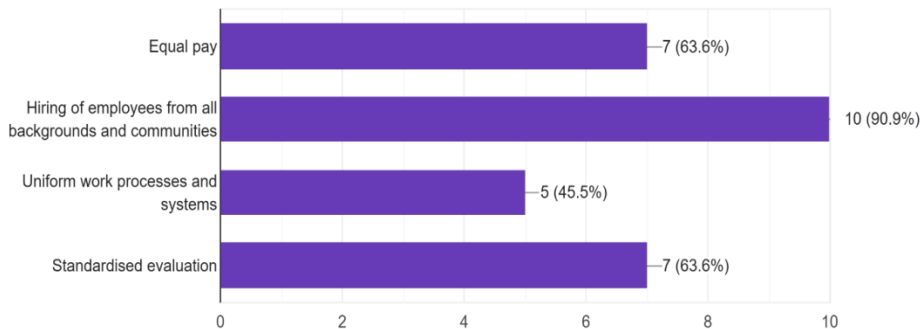


Figure 1.5

Figure 1.5 indicates that all the employees felt that the Hiring of employees from all backgrounds is the best way to describe Diversity in their workplace. 7 of them felt that Equal pay and standardised evaluation were other ways to integrate diversity in the workplace. 50% of them felt that it is with Uniform work processes and systems that diversity in the workplace can be better defined.

Which term according to you refers to ensuring fair access to opportunities and resources for the employees?
11 responses

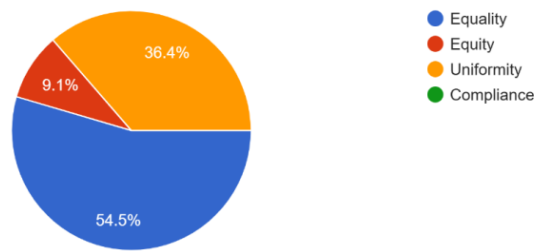


Figure 1.6

Figure 1.6 more than 50% of the employees feel that Equality is a term that they must recognise with to describe fair opportunities in the workplace. 36% of them felt that the term was Uniformity and 9% felt that it was Equity. None of the respondents felt that the term was Compliance.

The aim of an inclusive work culture is to -
11 responses

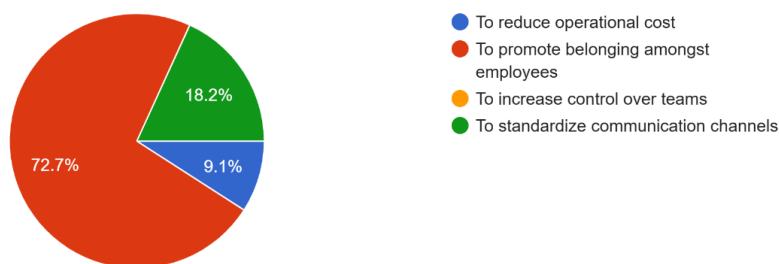


Figure 1.7

Figure 1.7 indicates the aim of inclusive work culture. For a whopping 72% of the employee's promotion of belongingness amongst the employees should be the biggest aim of an inclusive work culture. 18% of the employees feel that the communication channels being standardised is the final aim and 9% feel that the aim is due to operational cost. None of the employees feel that a control over teams is an aim of inclusive culture.

Do DEI strategies improve organizational performance? Please give your opinion -
11 responses

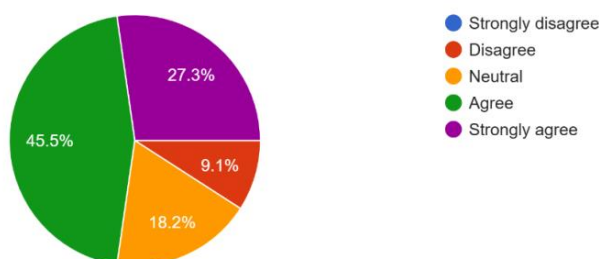


Figure 1.8

Figure 1.8 indicates that 45% of the employees Agree that DEI strategies do improve organisational performance. 27% of the employees strongly agree for the same. 18% felt Neutral about the DEI strategies. And 27% of the employees Strongly Agree that the DEI strategies improve organisational performance.

In your opinion, is leadership commitment important for the implementation of DEI strategies?
11 responses

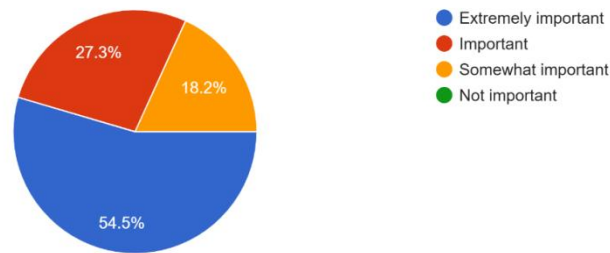


Figure 1.9

Figure 1.9 indicates the importance of leadership commitment towards the implementation of DEI strategies in the organisation. 54% of the employees feel that the role of leadership is very important. 27% feel that it is important and 18% feel it's Somewhat important. None of the employees choose the Not Important option.

In your opinion, what limits the progress of DEI strategies in KPO's?
11 responses

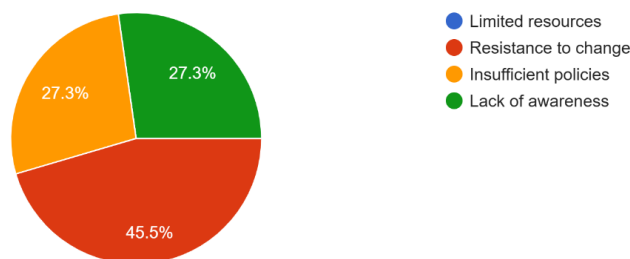


Figure 2.0

Figure 2.0 indicates the progress of DEI strategies in KPO's is limited mostly by Resistance to change. 45.5 % of the employees on the team felt that DEI strategies mean accepting change. 27% of the employees felt that it was due to Insufficient policies and the other 27% felt that it was due to lack of awareness. There was no employee who felt that it was due to limited resources.

Do you think that your organisation follows specific DEI policies or initiatives?
11 responses

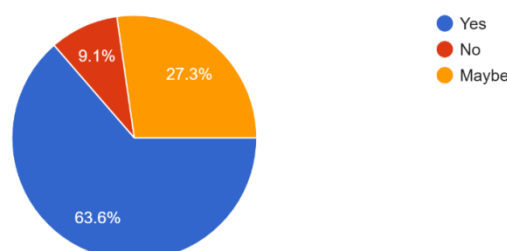


Figure 2.1

Figure 21.1 indicates whether the organisation follows any specific DEI initiatives or not. A whopping 63% have mentioned it as Yes, 27% of the employees and 9% of the employees have said that there are no policies for any specific DEI initiatives.

Which DEI practice do you believe has the most positive impact in your organization?
11 responses

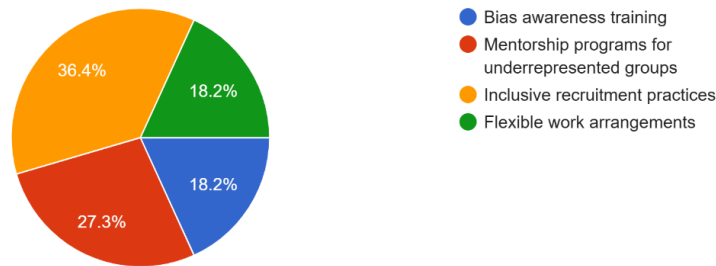


Figure 2.2

Figure 2.2 indicates the kind of DEI practices that have the most positive impact in Citibank. 36% of them feel that Inclusive recruitment practices will have the most positive impact, 27% of them feel that Mentorship programs for underrepresented groups will have the most positive impact, and 18% of them equally feel that Flexible work arrangements and Bias awareness training will have the most positive impact.

Rate the effectiveness of the DEI training program in your organization - 5 being the at the highest effective level and 1 being at the lowest effective level.
11 responses

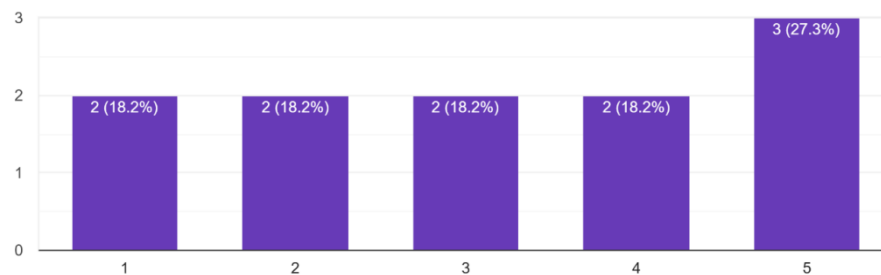


Figure 2.3

Figure 2.3 indicates that the highest percentage of the employees feel that the effectiveness of the DEI training program is high in the organisation.

Does your organization have barriers to creating an inclusive workplace? If Yes, then which one of these? (you can tick on more than one option)
11 responses



Figure 2.4

Figure 2.4 indicates the barriers that the organisation has in creating an inclusive workplace. A good 36% feel that the organisation has No barriers. 36% equally feel that the barriers are Insufficient resources and budgets and Unclear accountability for DEI outcomes. An equal 27% feel that Lack of senior leadership support and Limited employee engagement are also barriers.

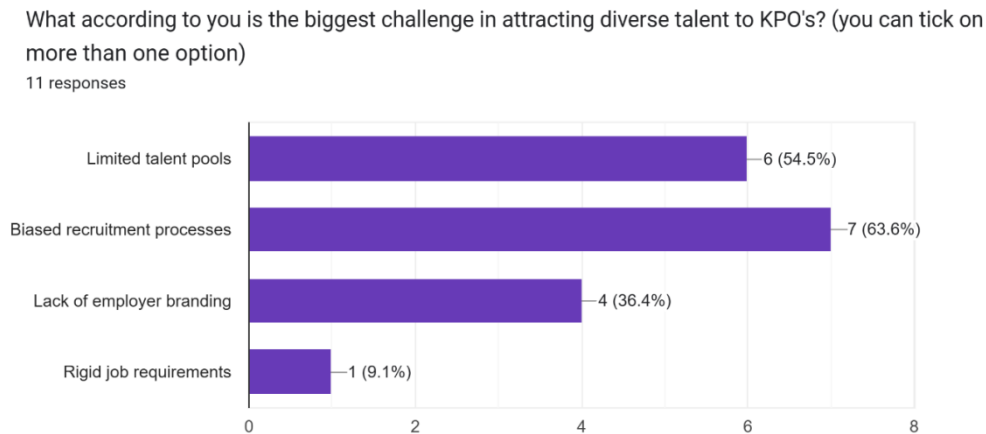


Figure 2.5

Figure 2.5 indicates the biggest challenge in attracting the diverse talent to KPO's. 63% of the employees feel that the biggest challenge is Biased recruitment processes. 54% of them feel that it is the Limited talent pools. 36% feel that it is Lack of employee branding and 9% feel that it is Rigid job requirements.



Figure 2.6

Figure 2.6 indicates the area of the organisation which the employees feel that the organisation needs to look into in order to strengthen their DEI. More than 50% of them felt that it was Leadership commitment and their role modelling. 27% felt it was Training and awareness campaigns and 18% of them felt that it was Measurement and reporting.

FINDINGS

The main findings of the study are presented below –

- The researchers were able to establish that although the DEI strategies to exist in the KPO industry, the need for better implementation of the strategies is felt by the employees.
- The responses of the employees indicated that the role of leadership is considered a big part of the process while implementing DEI strategies. It is from the leaders that they are expecting guidelines and balance in all the functions of the organisation.
- The employees felt that although standardised evaluation and processes were important, hiring of employees from diverse backgrounds is the most important while implementing DEI strategies.
- The researcher was also able to establish that a culture where employees feel as if they belong to the company is also possible only due to the inclusion strategies of the company and that it will create a more positive environment for them to work in.
- The researchers gathered that the area which Citibank needs to work on in terms of a more balanced work environment is Leadership and role modelling.

- The employees at Citibank also felt that the Biased recruitment process is one of the obstacles to attracting new and strong talent to the KPO.

SUGGESTIONS

“If you haven’t hired a team of people who are of colour, female, and/or LGBT to actively turn over every stone, to scope out every nook and cranny, to pop out of every bush, to find every qualified underrepresented founder in this country, you’re going to miss out on a lot of money when the rest of the investment world gets it.”

— **Arlan Hamilton, Founder and Managing Partner of Backstage Capital**

- From the primary data accumulated by the researchers and the conversations had with the Citibank employees, it is evident that the KPO of Citibank has many strategies for Diversity, Equity and Inclusion. However, it was noticed that many employees are not aware of these strategies.
- The organisations should ensure that the DEI strategies which are developed by them should be displayed in policies and integrated in the practices so that their implementation and effect can be seen and understood.
- The employees consider their leaders and managers are considered to be the role models for showing balance and equity. Considering this, they should play a more active role in developing structures and processes to ensure the effective implementation of the DEI strategies.

CONCLUSION

“We need to resist the tyranny of low expectations. We need to open our eyes to the inequality that remains. We won’t unlock the full potential of the workplace until we see how far from equality we really are.” — **Sheryl Sandberg, COO of Facebook**

- It is the role of the Human Resource Department of the KPO industry to ensure that the employees are equipped and have the knowledge to ensure cultural diversity. This can only happen if the upside of the cultural differences like ethnicity, language, educational levels and gender are seen and considered. The leaders and the department of HR are the champions who can lead the management of cross – cultural systems. [11]
- The objective of this study was to study the implementation of the DEI strategies in the KPO industry. This study has examined the various diversities that need to be taken care of while setting policies and regulations.
- The results and data of the study show that the employees of Citibank are aware of the DEI strategies but they also feel that the leadership could be more involved in implementing them at every level. The employees however are empowered to talk about their differences and feel accepted within their teams. The feeling of that the organisation may not be fully integrated with their diversities but the efforts to implement them in the policies of recruitment and performance are very in existence.

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BEYOND BORDERS: THE ROLE OF SOCIAL MEDIA AND E-COMMERCE IN THE GLOBALIZATION OF INDIAN D2C SKINCARE BRANDS

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ABSTRACT

In order to meet the growing demand for natural, cruelty-free goods worldwide, the research looks into the globalization strategies of Indian skincare firms (such as Mamaearth, WOW Skin Science, and Minimalist) which have combined Ayurvedic traditions with contemporary science. We investigate how social media tools (such as Instagram and YouTube marketing) and cross-border e-commerce allow these firms to enter the international markets in North America, the Middle East, and Southeast Asia using a mixed-methods approach using the survey data from 200 respondents as well as secondary sources. Although there were no discernible age-based variations in the frequency of skincare use, a chi-square test ($\chi^2=16.76$, $p=0.401$) showed that demographic-specific marketing tactics were crucial. Localization and regulatory compliance are obstacles. The paper ends with practical suggestions for firms growing internationally. It has also been observed that customisation would be the key in future.

INTRODUCTION

The Indian skincare industry, historically rooted in Ayurveda, has witnessed a transformative shift with startups innovating & developing a cusp of tradition and biotechnology. Brands like Mamaearth, WOW science, 82 degree E and Minimalist exemplify this evolution. They have leveraged India's cost-effective R&D and cultural capital to compete globally. Their success aligns with Nielsen's (2020) findings that 73% of consumers prefer natural products. This creates opportunities for brands emphasizing ethical sourcing. This paper investigates:

1. The role of digital platforms for growth in the global market,
2. The impact of Demography on consumer behavior, and
3. Regulatory and operational challenges faced by local brands in international markets.

REVIEW OF RELATED LITERATURE:

Singh & Verma (2020), have examined how influencer endorsements on social media significantly impact skincare product adoption among Gen Z and Millennials. Indian brands like Mamaearth have successfully utilized micro-influencers and mommy bloggers to build credibility.

Kapoor and Banerjee (2021) emphasized the rise of digital-first D2C (Direct-to-Consumer) brands in India, specifically within the beauty and wellness segment. Social media platforms— especially Instagram and YouTube—have reshaped how brands engage with consumers. These platforms allow startups to has led to more B2C engagement, reduced the distribution chain and access international markets directly, offering agility in consumer feedback loops and branding.

Djafarova and Bowden (2021) examined the psychological marketing underlying micro- influencer effectiveness, demonstrating that their perceived authenticity significantly enhances consumer trust.

Godey et al. (2016) provided empirical evidence in the Journal of Business Research that Instagram and YouTube are critical drivers of brand equity, more so for visually oriented industries such as skincare.

Prasad and Soundararajan (2021) in the Harvard Business Review elucidate their analysis of cultural hybridization—exemplified by halal-certified Ayurvedic products in the UAE — this is a more localised approach as per the demand of that specific market.

RESEARCH METHODOLOGY

Research Design

This study employs a mixed descriptive and exploratory approach, thus, aiming to understand consumer perceptions, behaviors, and usage patterns in the Indian skincare startups for both the domestic and global contexts. The research is based on primary data analysis, gathered through a structured questionnaire.

Study Objectives

The key aims of this research are:

- To analyze how consumers form a perception of Indian skincare brands.

- To evaluate international awareness and acceptance of Indian skincare startups.
- To determine whether demographic factors (age) influence skincare usage frequency.
- Use of social media in growth of Indian Skincare brands & its impact on various age groups.

Hypothesis Framework

The research uses hypothesis testing to validate statistical associations:

Null Hypothesis (H_0):

There is no significant difference in the modal (most frequent) skincare choice factors across age groups.

Alternative Hypothesis (H_1):

The modal skincare choice factors differ significantly across age groups.

Sampling Strategy

- **Target Population:** Individuals using skincare products, both within India and internationally.
- **Sampling Method:** Convenience sampling, selected due to practical constraints and ease of online distribution.
- **Sample Size:** 200 participants. Data Collection Method
- **Instrument:** A pre-designed digital questionnaire (via Google Forms), consisting of multiple-choice, scaled, and checkbox questions.
- **Data Type:** Quantitative data on categorical (nominal and ordinal) scales. Analytical Tools and Techniques

The following statistical tools were applied:

Tool Used	Purpose/Function
Descriptive Statistics	To summarize demographic profiles and response trends.
Chi-square Test of Independence	To test associations between variables like age & factors influencing skincare product choices
Graphical Representation	Visual summaries (bar charts, pie charts) to support interpretation.

Data was processed using Microsoft Excel, and results interpreted using conventional statistical thresholds.

Secondary Research

Case study on growth of Mama Earth based on previous sale trend & use of digital media, Influencer marketing for the promotion of the brand.

Limitations

- The use of non-random sampling limits the generalizability of results.
- The self-reported nature of responses may introduce bias.
- The sample may not proportionally represent all international markets.

DATA ANALYSIS & INTERPRETATION

- ✓ Analysis of Objective: The relationship between Age Group & factors influencing skincare product choices

Contingency Table (Observed Frequencies)

Age Group vs. Skincare Choice Factors

Factor	Under 18	18–24	25–34	35–44	45+	Total
Natural/organic ingredients	5	20	15	14	12	66
Dermatologically tested	4	22	14	20	10	70
Ayurvedic/traditional	5	15	12	14	8	54
Brand reputation	4	18	18	12	7	59
Price	6	16	10	8	6	46
Recommendations/influencers	2	28	8	6	7	51
Cruelty-free/eco-friendly	3	14	7	6	5	35

Packaging/design	1	10	8	7	5	31
Total Responses (per age group)	30	143	92	87	60	412

Mode Analysis for Skincare Choice Factors by Age Group

Mode is the most frequently occurring value in each category. For this dataset, we'll identify:

1. Overall mode (most selected factor across all ages)
2. Age-specific modes (most selected factor within each age group)

1. Overall Mode (All Age Groups Combined)

Looking at the "Total" column, the highest frequency is:

- The most popular factor overall is Dermatologically tested

Thus on the basis of the above we examine each age group's highest-frequency factor:

Age Group	Most Selected Factor	Frequency
Under 18	Price	6
18–24	Recommendations/influencers	28
25–34	Brand reputation	18
35–44	Dermatologically tested	20
45+	Natural/organic ingredients	12

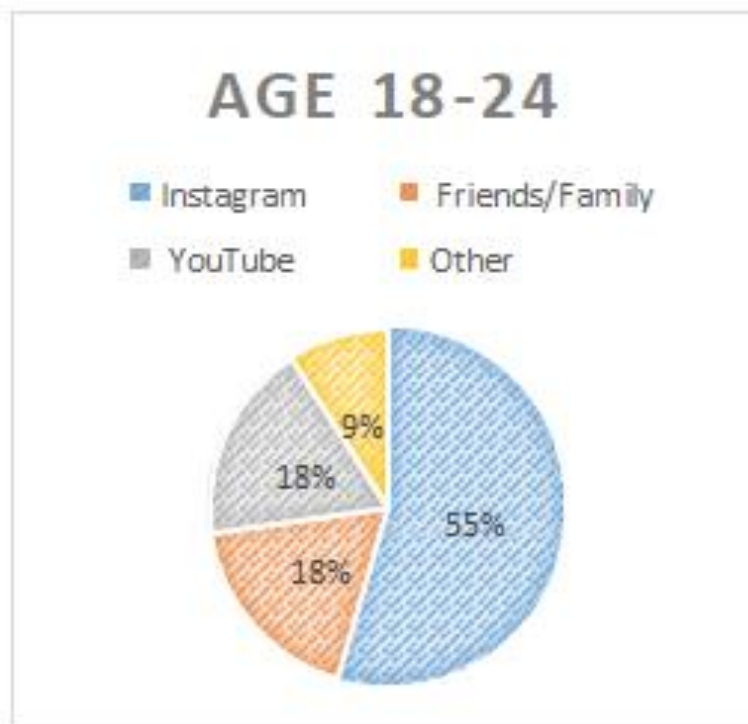
Key Observations

1. Least common factors overall:

- *Packaging/design (31 selections)*

Thus, we reject the Null Hypothesis & accept the Alternate hypothesis, implying that *There is a significant difference in the modal (most frequent) skincare choice factors across age groups. Each group has a different reason for purchase.*

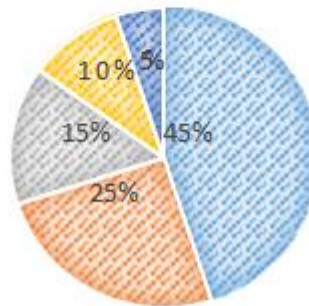
- ✓ Analysis of Objective: Use of social media in growth of Indian Skincare brands



Dominant role: Instagram

AGE- 25-44

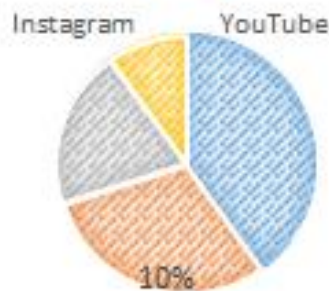
Instagram YouTube
Amazon/E-commerce



Dominant Role: Use of Youtube alongside Instagram

USE OF WORD OF MOUTH (AGE 35+)

Friends/Family Physical Stores



Dominant Role: Word of Mouth

Key Takeaways from Visuals:

- Instagram advertising & promotions dominate youth-focused charts.
- YouTube appears in all charts but it has been observed that it grows with age.
- Older demographics have shown a stronger offline/word-of-mouth trend.

Secondary Research:

Mamaearth's Use of Influencers & digital media for growth Founded in 2016, Mamaearth became India's first unicorn skincare brand (\$1.2B valuation) by blending Ayurveda with digital-first expansion. The research revealed Instagram's dominance among young consumers (65% engagement), prompting Mamaearth to partner with 5,000+ micro-influencers. For older demographics, YouTube tutorials drove 40% of international sales. Despite no age-based usage differences (*p*=0.401), products were tailored by life stage: Tea Tree for Gen Z (Instagram), Onion Shampoo for millennials (YouTube), and Vitamin C serums for 35+ (Amazon reviews). Cross-border e-commerce (Amazon, Noon, Shopee) contributed 30% of revenue, with localized offerings like

halal baby care (UAE) and climate- adaptive moisturizers (USA). Regulatory hurdles included 18-month FDA delays and EU reformulations, overcome via lab partnerships.

Source: Honasa Consumer (Mamaearth) D2C Strategy

Recommendations for Indian Skincare Startups Expanding Globally

1. Leverage Instagram for Youth Engagement

Given Instagram's popularity among consumers aged 18–34, Indian skincare brands should prioritize visual content such as reels, user testimonials, and before-and-after transformations. Collaborating with influencers can significantly enhance brand visibility, initiate engagement, and create recall in youth-dominated markets.

2. Expand YouTube Content for In-Depth Consumer Education

For older millennials and Gen X (25–44), YouTube remains a valuable platform for long-form content consumption. Brands should invest in educational videos, including dermatologist- endorse product reviews, explanations of ingredients, skincare routines, to establish authority and build consumer trust across a more informed audience segment.

3. Adopt a Hybrid Marketing Model: Digital + Word-of-Mouth

While digital marketing is critical, offline strategies remain effective, particularly for audiences aged 35 and above. Brands should integrate traditional channels—free sampling, referrals of peers, and in-store activations—alongside digital campaigns to maximize organic growth and community-led advocacy of skin care.

4. Optimize Cross-Border E-Commerce & Localize Offerings

To scale globally, brands should focus on international e-commerce platforms like Amazon, Shopify, and Nykaa Global. However, success also depends on local market adaptation— including region-specific product formulations & composition (e.g., climate-appropriate skincare), language-optimized packaging, and cultural certifications (such as halal in the Middle East).

5. Ensure Regulatory Compliance & Transparency

Global expansion demands strict adherence to international cosmetic regulations, including FDA (US), COSMOS (EU), and other regional standards. Startups should invest in clinical testing, cruelty free product testing, transparent labelling, and collaborate with local authorities to expedite product approval and market entry.

6. Apply Data-Driven Personalization

Utilize analytics from consumer surveys and digital platforms to design age-specific product lines and targeted marketing. For example:

- Teen segment: Acne treatment and oil control
- 25–34: Preventive skincare and hydration
- 35+: Anti-aging and pigmentation solutions

Tailored messaging enhances customer satisfaction and brand loyalty

CONCLUSION

The emergence of Indian skincare brands such as Mamaearth, Minimalist, and WOW Skin Science exemplifies a new wave of entrepreneurship that bridges Ayurvedic heritage with digital innovation. Platforms like Instagram and YouTube have proven especially effective in shaping consumer behavior among younger demographics, while word-of-mouth and trust- building mechanisms remain key for older age groups.

To maintain momentum and sustain international growth, Indian skincare brands must embrace a dual focus:

- Innovation and global compliance in product development
- Localization and emotional resonance in branding

By leveraging India's strengths—cost-effective R&D, rich botanical ingredients, and digital- savvy branding—startups can build enduring global footprints in the competitive beauty industry.

FINAL NOTE

While this study provides insight into consumer preferences and media influence, further research is needed to explore:

- Long-term brand loyalty in overseas markets
- Region-specific buying behavior
- Effectiveness of offline vs. Digital engagement over time

Such insights will be vital for Indian skincare startups seeking scalable, sustainable, and culturally attuned global strategies.

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SUSTAINABILITY AND INCLUSION OF INFORMAL SECTOR: CASE STUDY OF STREET VENDORS IN GREATER MUMBAI

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ABSTRACT

Street vendors in Greater Mumbai represent a vital segment of the informal sector, contributing significantly to the urban economy by providing affordable goods and services. Despite their socio-economic relevance, street vendors face persistent challenges including lack of legal recognition, harassment by authorities, limited access to financial and social security systems, and competition from organized retail. This study **investigates** the demographic, occupational, and socio-economic characteristics of street vendors in the eastern suburbs of Greater Mumbai through a case study approach. A **sample** of 100 street vendors was surveyed using random sampling, and data was analyzed using MS Excel, SPSS, and QGIS tools. **Findings** reveal that hawking is predominantly undertaken by individuals in the 30–50 years age group, with male vendors outnumbering females. Most vendors come from joint families and fall within the lower income and education brackets. The majority reported working long hours with low daily earnings, lack of access to licenses, and dependence on informal credit systems. Health issues, police harassment, absence of social security, and physical abuse were also commonly reported. However, respondents also demonstrated resilience through strategies such as forming alliances, adjusting pricing, and building customer loyalty. **Correlation** analysis indicated a significant relationship between working hours and earnings, as well as between challenges faced and financial management. The study highlights the urgent need for inclusive policy frameworks to formalize street vending through licensing, infrastructure provision, digital literacy, and access to credit. **Recommendations** include creation of hawking zones, awareness programs, and welfare schemes to enhance the sustainability and dignity of street vendors in Mumbai.

Keywords: informal sector, inclusion, socio-economic status, hawkers

INTRODUCTION

In Mumbai, street vendors, commonly known as hawkers, play a vital role in providing affordable goods and services to the city's vast population. Life of a street vendor is full of uncertainties. They do not have any kind of identity cards for recognition or license to make their presence legal. They are constantly harassed by the authorities. They often encounter municipal raid where municipal workers chasing street vendors and these people try to run away. The survival needs in a hostile environment are yet to be developed. Besides these sudden raids, street vendors normally have to regularly bribe the authorities in order to carry out their business on the streets. Despite their importance, street vendors in Mumbai face numerous challenges, including harassment by authorities, competition from organized retail and limited access to formal credit and social security benefits.

REVIEW OF LITERATURE

(Siddiqui, 2021) In this research, the researcher found out that there is no significant difference of the income between the street vendors of different age groups. So, the research is based on income earned by street vendors which does not depend on the age and caste of people but it depends on the number of hours they work each day. Also, the income varies for the people who migrated to Mumbai for different number of years. (Cavale, 2023) The study examines the role of judicial intervention in shaping street vending policies, highlighting the motivations of social actors, legal procedures, and the dynamics of bargaining within the legal framework. The research identifies challenges in achieving a balance between securing tenure for street vendors and addressing competing urban interests, suggesting that legal mobilization alone may not suffice to resolve these tensions. (Gokhale, 2024) discussed in his article the growing issue of illegal street vending in Mumbai. The Bombay High Court highlights how the unchecked presence of unauthorized hawkers is not only creating obstruction but also leading to severe inconvenience for pedestrians. The article sheds light on the negative impacts of this issue on the daily lives of Mumbai's residents, as well as the lack of effective regulation to address the problem. It underlines the urgent need for solutions to balance the interests of street vendors with the safety and convenience of pedestrians.

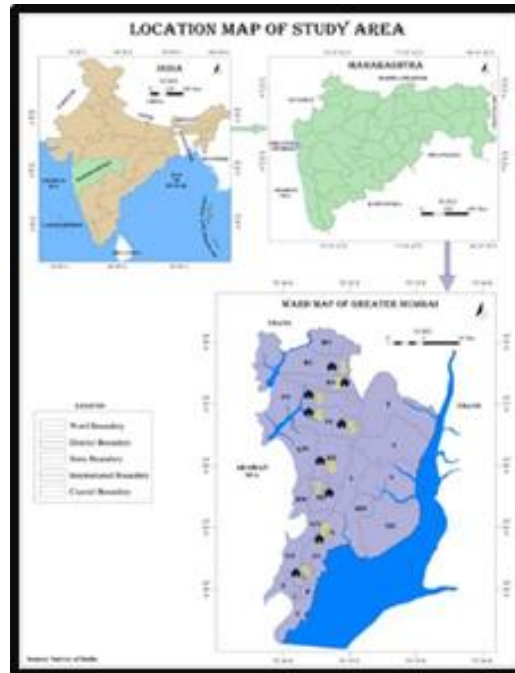
RESEARCH OBJECTIVES

- To explore the demographic and occupational characteristics of street vendors in eastern suburbs of Mumbai.

- To assess the socio-economic status of street vendors in eastern suburbs including their income, expenditure and access to basic amenities.
- To identify the challenges faced by street vendors including licenses, police harassment and competition from organized retail.

RESEARCH METHODOLOGY

- Coverage

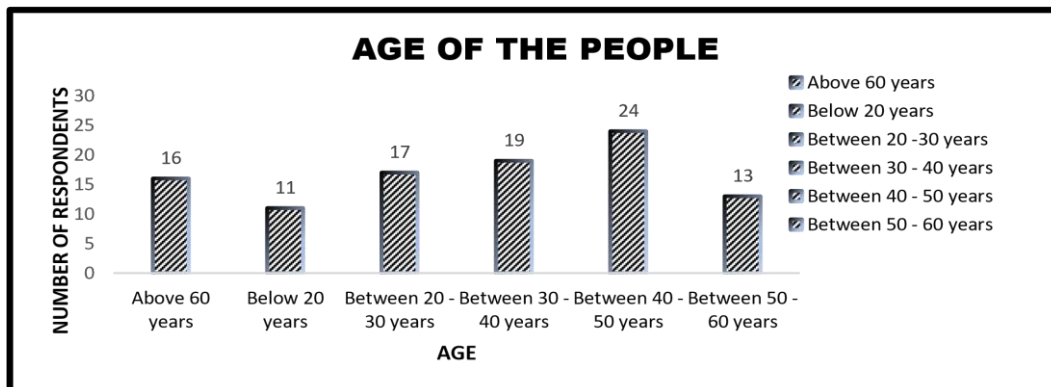


The area chosen for the research is Greater Mumbai. Its latitudinal extension is from 180 East to 190 East and longitudinal extension is from 72.820 North to 73.000 North approximately. There are 24 wards in Greater Mumbai. The area comprises of Mumbai District and Mumbai Suburban District. The Arabian Sea borders it on the south and west, the Ulhas River on the north, and Thane Creek on the east. It serves as both the financial and state capital of Maharashtra. It is a significant industrial center for the entire country. The area is under the management of Municipal Corporation of Greater Mumbai and is one of the largest (administrative area) municipal corporations of the country. The total area of Greater Mumbai is 437.71 sq. kms.

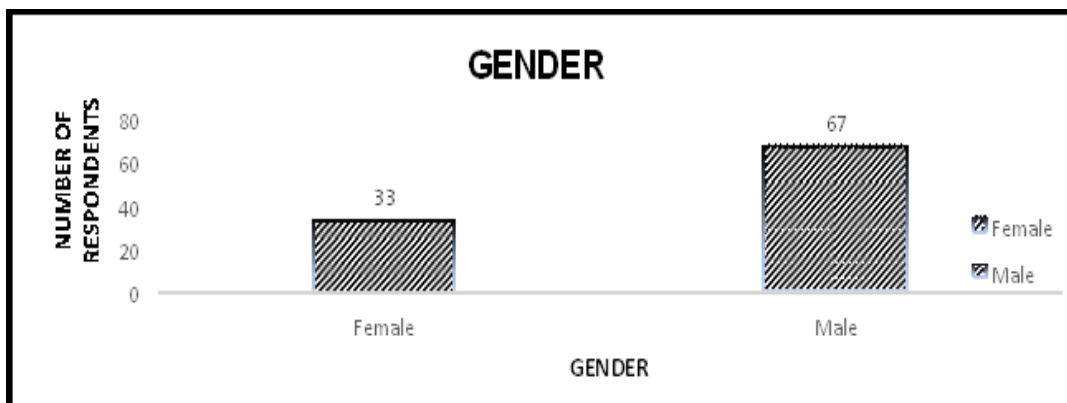
• Methods of Data Collection and Analysis

This research paper is mainly based on primary data collection and information. Also, secondary sources like academic journals including published books, articles and research papers were referred to as complete research papers in a more systematic and holistic manner. Primary data is collected with close ended questionnaire. The method used for collecting data is a survey method. Considering objective and hypothesis, questionnaire was prepared using google form to collect data from required sample. The sample size is 100 and the sampling method is random sampling. The obtained data is visualized through charts, graphs and plots to identify the trends or pattern of the study area. hypothesis have been tested using various statistical tools. Data was extracted in excel file and have been analysed and processed using MS-Excel, QGIS and IBM-SPSS software. Graph was extracted from Google doc and Microsoft Excel using Pivot table and Pivot chart.

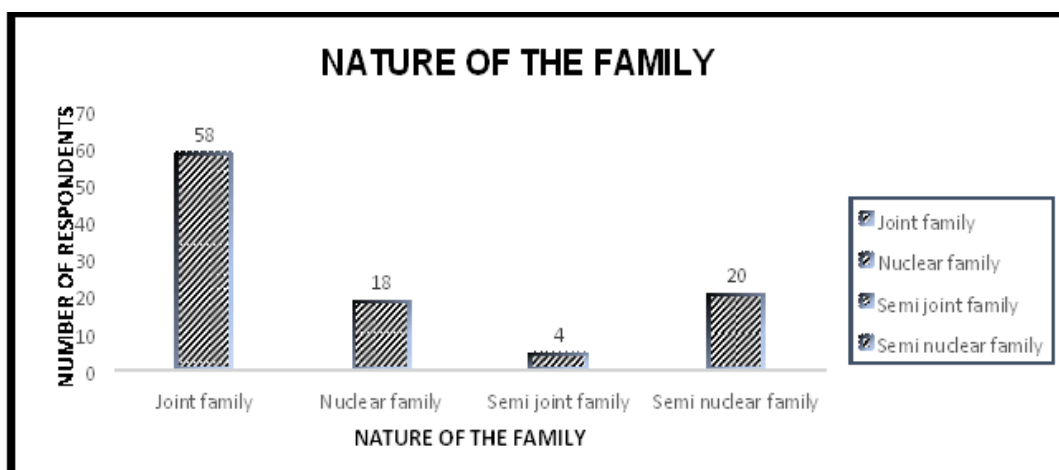
DATA ANALYSIS AND DISCUSSION



The graph categorizes respondents into six age groups i.e., Below 20 years, 20–30 years, 30–40 years, 40–50 years, 50–60 years and above 60 years. The age group 40–50 years has the highest number of respondents (24 individuals). This indicates that middle-aged individuals are the most prominent age group among street vendors in this city. The age group Below 20 years has the lowest number of respondents (11 individuals). This suggests that younger individuals are less likely to be engaged in hawking. Age groups 30–40 years and 20–30 years have 19 and 17 respondents, respectively, showing consistent participation among younger adults. The 50–60 years group has 13 respondents, which is relatively low compared to middle-aged groups. Above 60 years has 16 respondents, indicating some elderly involvement in hawking. The data suggests that hawking is more prevalent among individuals in their prime working age (30–50 years).

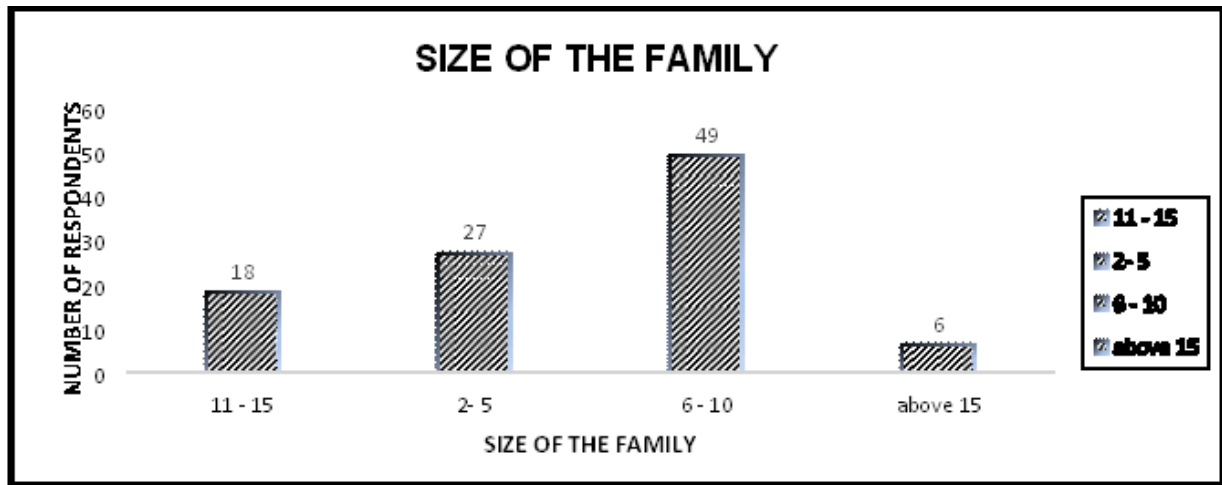


It highlights the number of male and female respondents, with males making up the majority (67) and females accounting for 33 respondents. The possible reason of gender inequality could be that Men are traditionally seen as the primary earners, Hawking often involves working long hours in public spaces, sometimes late into the evening, which may not feel safe or culturally acceptable for women in certain areas which could lead to a higher number of males taking up hawking as a source of livelihood as compared to females.

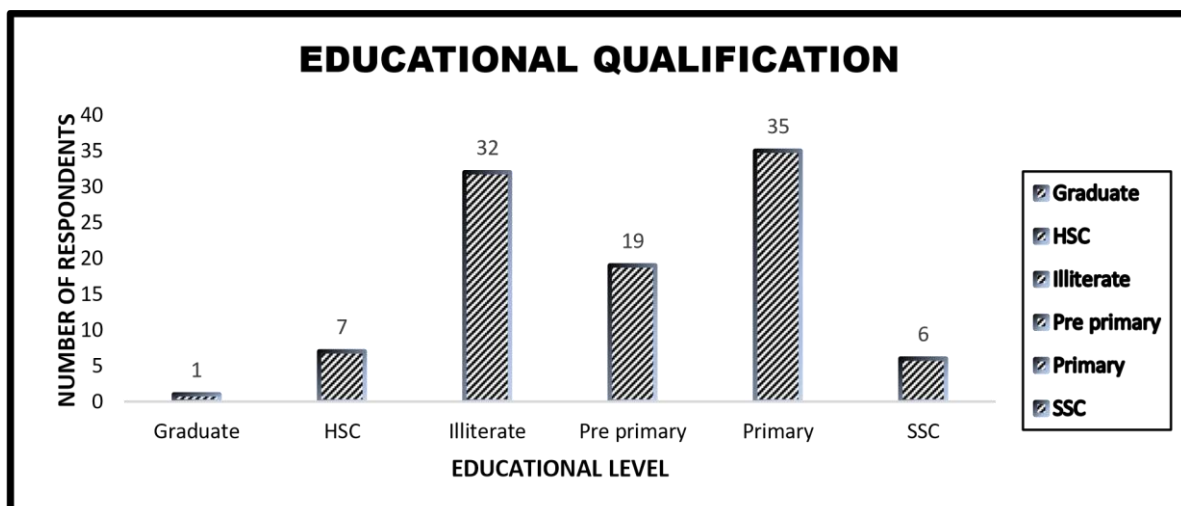


It is observed that largest group of hawking with 58 respondents lives in joint family which is the traditional family structure. Joint families likely provide a support system for hawking activities, where multiple family

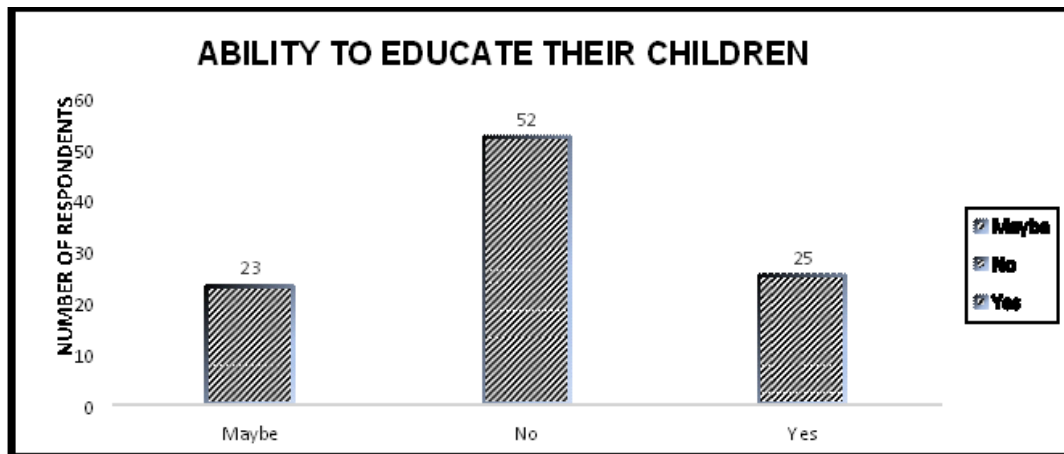
members may contribute to the same trade or business. The presence of Nuclear (18 respondents) and Semi-nuclear (20 respondents) families suggests the impact of urbanization, limited housing space, and individualistic trends on the family structures of hawking people. The minimal representation of Semi-joint families (4 respondents) suggests that this structure is less suitable or practical for hawking families in the city.



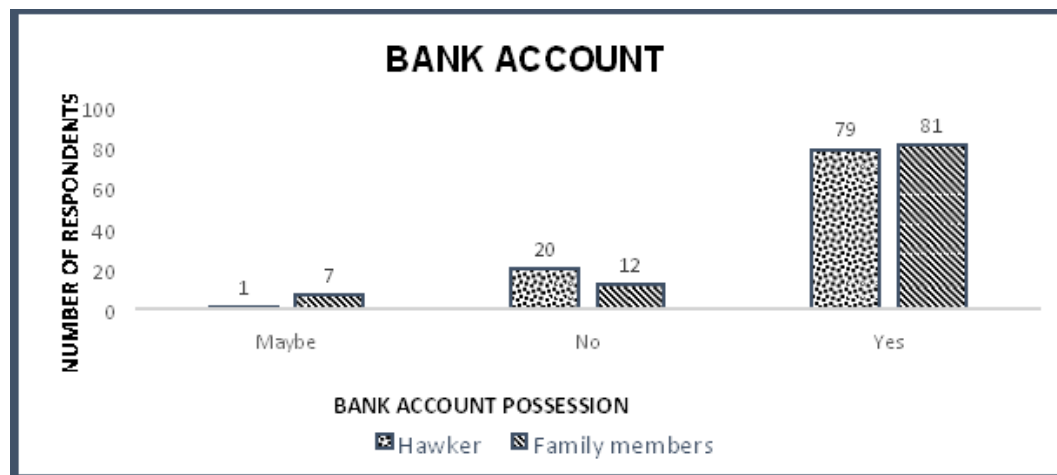
The above graph represents the size of the family. The most common group size 6 – 10 members with 49 respondents, representing a significant portion of street vendors in the region. It indicates that the majority of hawking activities are conducted in small to medium-sized groups may be better able to share resources, manage sales, and handle logistics compared to larger or smaller groups. There could also be a communal aspect where members support each other in their business activities. The second largest groups size 2-5 members with 27 respondents could reflect need for flexibility in operating in smaller spaces. A smaller proportion of street vendors in group size 11-15 members with 18 respondents, represents medium group. This size could indicate a more formalized structure or coordination, perhaps due to the scale of their operations or the need for more manpower. Only 6 respondents have family size above 15 suggesting that very large hawking groups are rare in the region. A group of this size might be difficult to manage effectively and could face challenges in terms of organization, resource allocation, and space management.



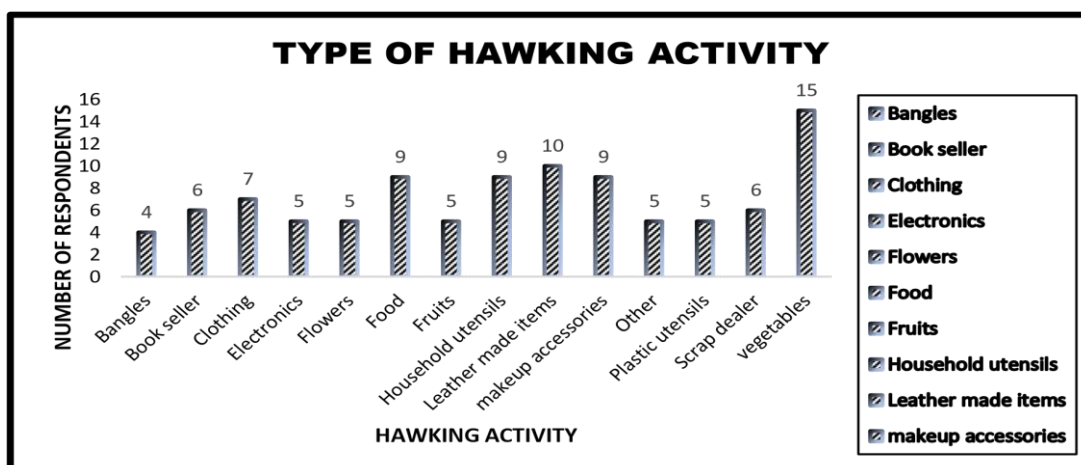
The majority of respondents, 35 individuals, fall into the "Primary" education category, indicating this is the most common educational level in the region. A significant portion, 32 respondents, are illiterate, which highlights the challenges in literacy within the region. Pre-primary category has 19 respondents, representing those with some basic or early education but below primary school level. There are 6 respondents with SSC (Secondary School Certificate) level education, showing fewer people attaining secondary education. Only 7 respondents have completed HSC (Higher Secondary Certificate) education, reflecting a low percentage of individuals pursuing education beyond secondary school. The least number of respondents, only 1, have achieved graduation, pointing to minimal higher education attainment in the region. The graph suggests that educational attainment beyond the primary level is quite low and Illiteracy is prevalent, affecting a large portion of the population also with a steep decline in the number of respondents with education levels above primary, which may indicate advantage of higher education opportunities.



It is observed that 25 out of 100 street vendors feel confident in their ability to educate their children. This reflects a small segment of the population that might have stable incomes, access to resources, or other supportive conditions. 52 street vendors believe they cannot educate their children. This majority suggests financial instability, lack of access to quality education, or other socioeconomic challenges faced by the street vendors. 23 street vendors are uncertain about their ability to educate their children. This reflects a lack of confidence or fluctuating conditions that prevent them from making a definite judgment.



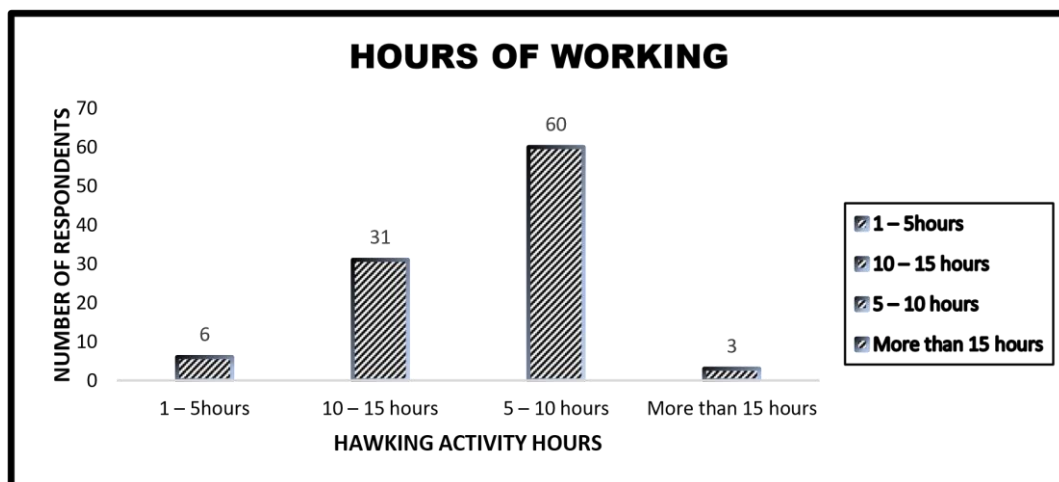
Majority of respondents have bank accounts. i.e., 79% as compared to 20% non – ownership rate and the possible reason could be Lack of income or savings, unavailability of banking infrastructure, limited knowledge of banking services. This indicates that many respondents are integrated into formal banking systems, which could facilitate savings and access to credit. The single maybe respondent might reflect uncertainty due to Lack of clarity about what constitutes ownership (e.g., dormant accounts) or limited interaction with banking services.



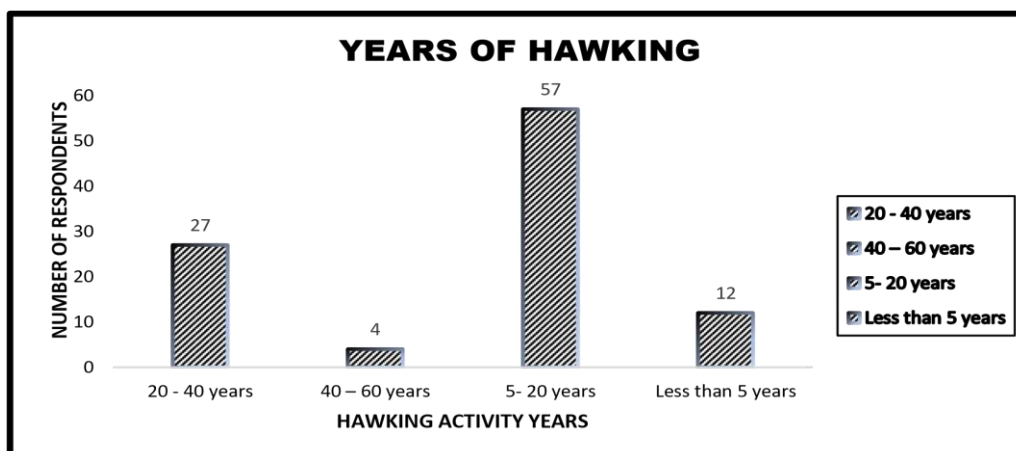
Vegetables are the most common hawking activity, with 15 respondents engaged in selling them. This highlights vegetables as a staple product for street vendors in this area. Household utensils and makeup accessories are tied for the second most popular activities, each with 10 respondents. Food (9 respondents) and

fruits (9 respondents) are also significant categories, likely due to the high demand for perishable and essential goods. Leather-made items (9 respondents) indicate a demand for durable goods, possibly targeting urban consumers. Categories like bangles (4 respondents), flowers (5 respondents), scrap dealers (5 respondents), and electronics (5 respondents) have fewer respondents, suggesting either limited demand or a niche market. Book sellers and clothing street vendors (6 respondents each) have moderate representation, indicating some interest in non-essential goods. The category labelled "Other" (9 respondents) likely represents diverse hawking activities not explicitly listed, showcasing a broad spectrum of offerings.

Products like vegetables, fruits, food, and household utensils dominate, reflecting the demand for daily-use and essential items in the community. The presence of leather-made items and utensils indicates that street vendors cater to both short-term consumable goods and longer-term durable items. Bangles, flowers, and books represent smaller, more specific markets. These goods might be sold in areas with a targeted customer base, such as near places of worship or schools.

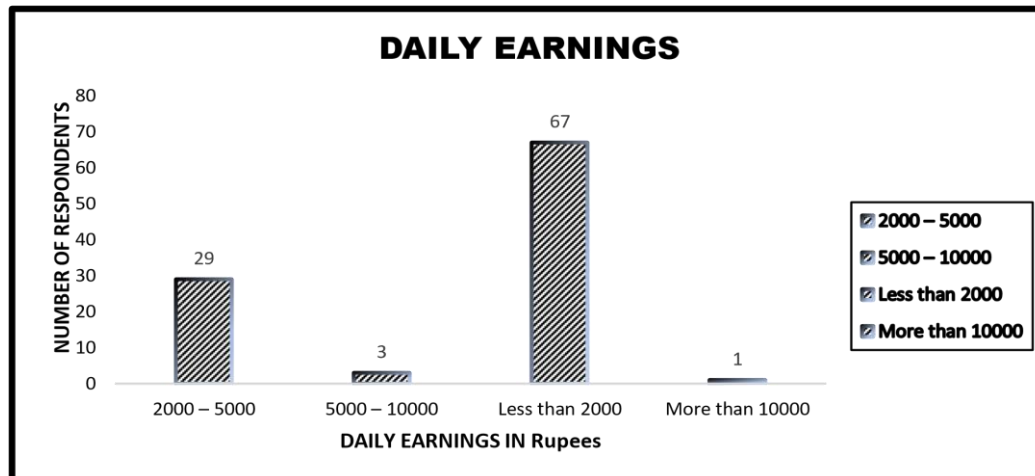


The largest group 5–10 hours (60 respondents, 60%), indicating that the majority of street vendors work a moderate number of hours daily. This group may find a reasonable balance between work, income, and personal life. 10–15 hours (31 respondents, 31%), the second largest group works significantly long hours, suggesting a portion of street vendors needs to put in extra effort to meet financial goals or sustain their livelihood. They have less time for family and other activities. The two extreme vulnerable groups are smaller but significant, that may require specific attention —those working very few hours (6 respondents) due to part-time hawking, limited demand, or other sources of support or excessively long hours (3 respondents) indicates extreme work hours, likely overburdened and in need of better support systems. These individuals are at risk of severe physical and mental health issues due to overwork.

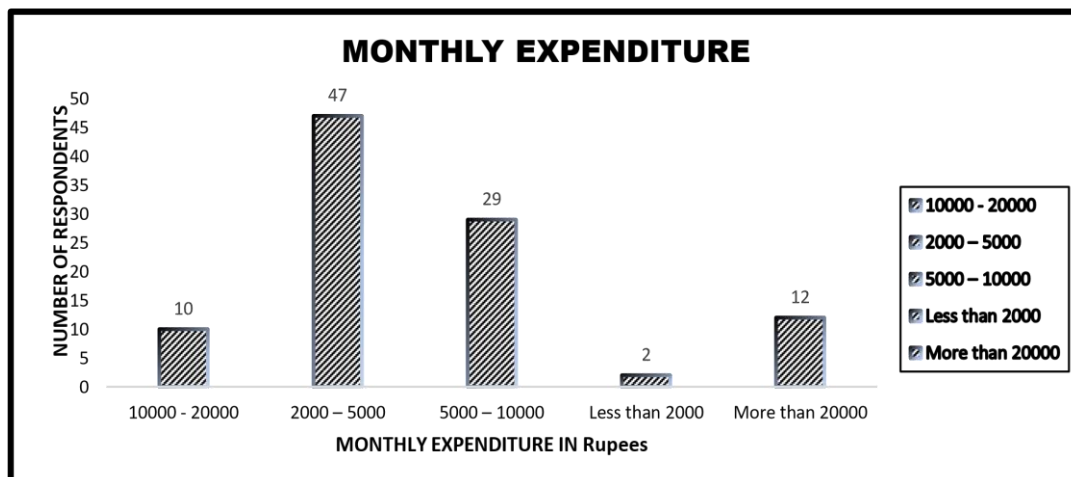


The majority of street vendors fall in the range of 5–20 Years (57 respondents), suggesting that hawking is a stable longterm occupation for most. This group represents individuals who have gained significant experience but may still be in their most productive years, balancing effort and earnings. The second-largest group i.e., 20–40 Years (27 respondents) has even greater experience, suggesting hawking is a viable career over decades. This group likely has a stable customer base, expertise in their business, and strategies to maximize income with reduced effort. A smaller group Less than 5 Years (12 respondents) represents newer entrants into hawking.

These individuals might still be learning the trade, building their network, and facing challenges like low earnings or irregular work patterns. The smallest group of 40–60 Years (4 respondents), consisting of veteran street vendors who have been in the business for decades. They are likely older individuals who may face physical limitations, health challenges, or a reduced ability to work long hours compared to younger street vendors.



The majority of respondents (67 people) fall into less than ₹ 2000 category, indicating that a significant portion of the population earns a very low daily income. 29 respondents fall into ₹2000–₹5,000 category which is the second-largest group, suggests that a smaller yet notable percentage earns slightly better daily wages. Only 3 respondents are in the category of ₹5000–₹10,000, indicating that very few people earn moderate daily incomes in this region. More than ₹10,000 Just 1 respondent falls into this range, highlighting those high daily earnings are extremely rare in this area. The data suggests a high level of income inequality in the region, with a concentration of respondents in the lower income brackets and may have limited access to high-paying opportunities in this area.



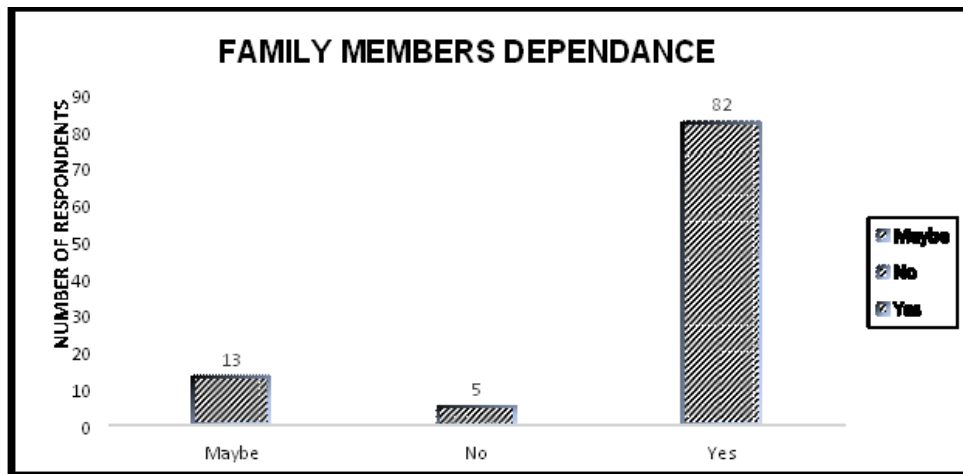
₹2000–₹5000: The majority of respondents (47 individuals) fall into this category, indicating that most households in this region have a low monthly expenditure within this range. This might reflect limited income levels or a frugal cost of living.

₹5000–₹10,000: The second-largest group consists of 29 respondents with a slightly higher monthly expenditure, suggesting moderate spending capacity.

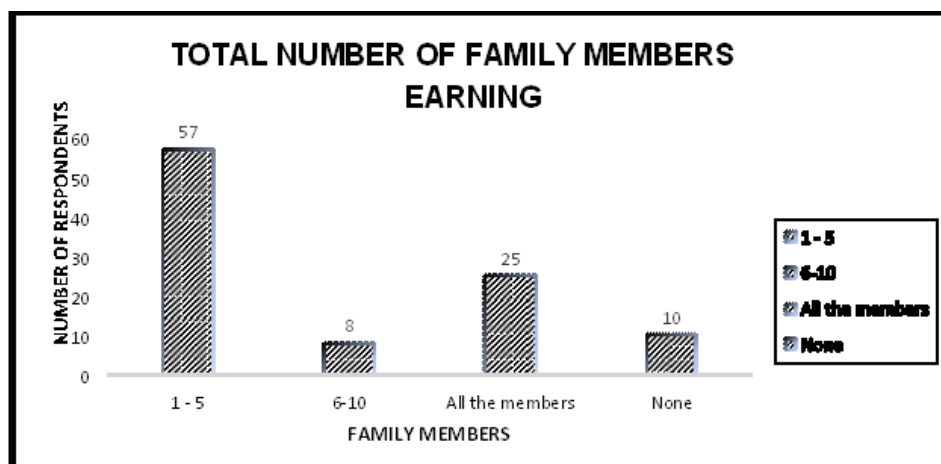
₹10,000–₹20,000: Only 10 respondents spend in this range, representing a smaller proportion of individuals with a higher spending capacity.

More than ₹20,000: A small group of 12 respondents spend over ₹20,000 monthly, indicating relatively high-income households.

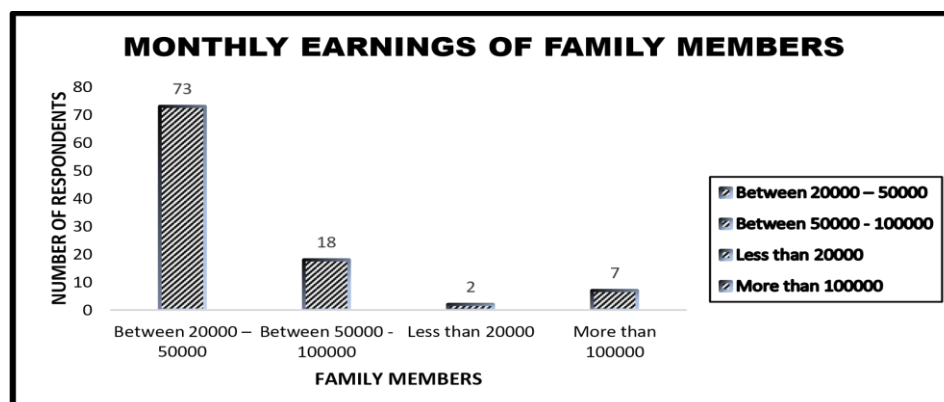
Less than ₹2000: Only 2 respondents fall into this category, which suggests that very few individuals live on extremely low monthly expenditures, possibly due to the cost of living in the area being above this level.



A significant majority (82%) of respondents reported that their family members depend on them. This indicates a high level of familial responsibility for most individuals in this region. It suggests that the respondents are likely the primary or sole earners in their households and lives in joint family. Only 5% of respondents stated that their family members do not depend on them. This is a small group, potentially consisting of individuals with independent or self-reliant family members. 13% of respondents were unsure about the dependence of their family members. This could indicate that they shared responsibilities among family members.

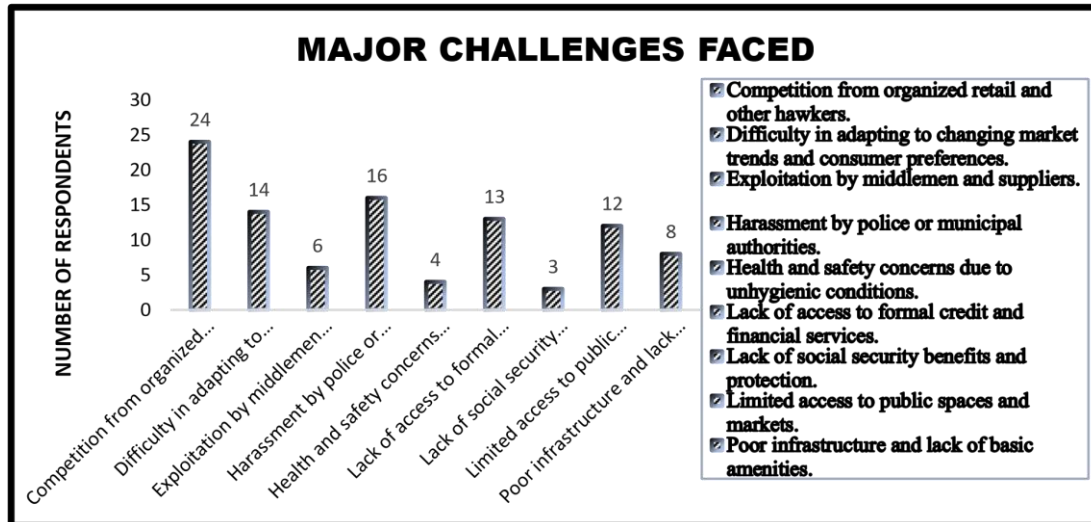


Most respondents (57 individuals) reported that their families have 1-5 members earning. This indicates that smaller family units primarily contribute to the household income which reflect how they shared financial responsibilities. A significant number of respondents (25 individuals) indicated that all family members are earning. This suggests that in some households, economic necessity drives every member to participate in income-generating activities to reduce burden. Only 8 respondents reported having 6-10 family members earning. This is likely uncommon and may represent extended families or joint-family setups where multiple members contribute to income. A small segment (10 respondents) reported no earning members in the family.



Earnings Between ₹20,000–₹50,000 have majority of respondents (73), indicating that most families in this region have modest earnings. Earnings Between ₹50,000–₹1,00,000 have 18 respondents, showing a smaller yet

significant group with higher monthly family income. Earnings Less than ₹20,000 have only 2 respondents, suggesting that very few families face extreme financial challenges. Earnings More than ₹1,00,000 have 7 respondents with high-income category, indicating the presence of a small affluent group in the region.



The most significant challenge, identified by 24 respondents, highlighting intense market competition that affects earnings and stability. 16 respondents faced health and safety issues, likely linked to working or living in unhygienic conditions. 14 respondents cited the issue with Difficulty in Adapting to Changing Market Trends and Consumer Preferences, showing struggles in keeping up with evolving demands or trends, potentially due to a lack of resources or knowledge. 13 respondents raised the concern Lack of Social Security Benefits and Protection, showing vulnerability in terms of safety nets or social welfare. 12 respondents reported difficulty accessing spaces necessary for work, indicating issues with urban infrastructure or regulations. 8 respondents highlighted the issue of Poor Infrastructure and Lack of Basic Amenities, which could include inadequate roads, water, or sanitation facilities. 6 respondents mentioned Exploitation by Middlemen and Suppliers, suggesting a relatively lower but still notable impact of unfair practices in supply chains. 4 respondents for Harassment by Police or Municipal Authorities, indicating concerns about governance or enforcement issues. Lack of Access to Formal Credit and Financial Services only 3 respondents reported this as a challenge, which could mean a relatively smaller portion struggles with financial inclusion.

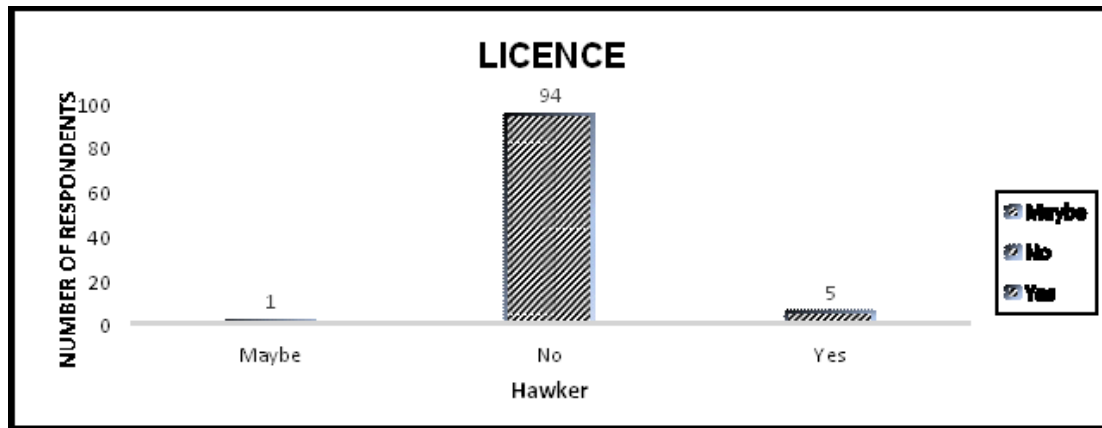


A large majority of respondents (79 individuals) reported experiencing harassment by police. This highlights a significant challenge faced by street vendors, possibly linked to legal or regulatory issues regarding street vending. A small group (12 respondents) mentioned not facing police harassment, suggesting that some street vendors operate without interference, likely due to specific permits, locations, or circumstances. A minor portion (9 respondents) was uncertain about whether they were harassed, which could reflect indirect or less overt forms of pressure from authorities.

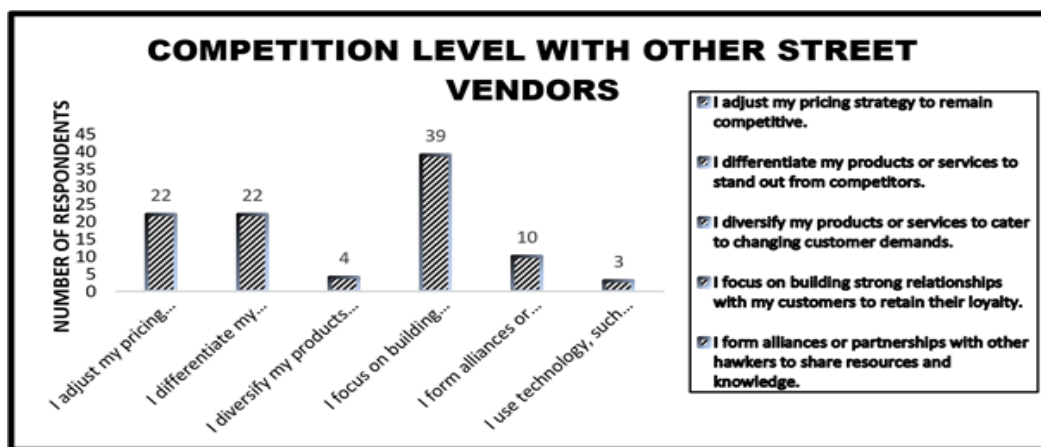
The highest number of respondents (85 individuals) reported experiencing physical abuse. This is alarming and indicates the prevalence of violence faced by street vendors in their line of work, likely stopping from conflicts over space, law enforcement actions, or disputes with other groups. Only 11 respondents indicated no physical

abuse, suggesting that it is a rare experience for this group. A very small group (4 respondents) was uncertain about physical abuse, perhaps due to ambiguous or infrequent incidents.

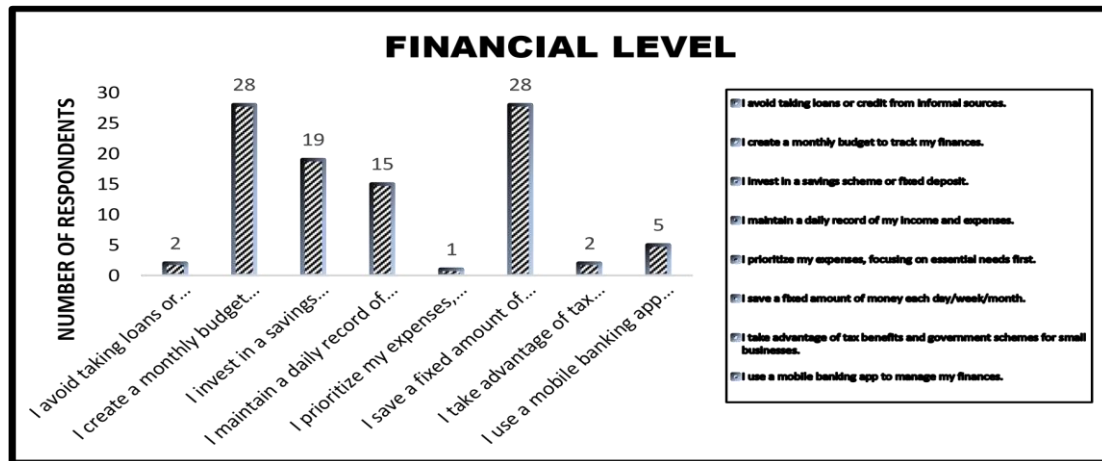
The data reveals that a significant majority of street vendors face harassment, both from authorities and in the form of physical abuse. This graph sheds light on the difficult realities of street vending in the city, underscoring the need for systemic change to ensure the safety and dignity of street vendors.



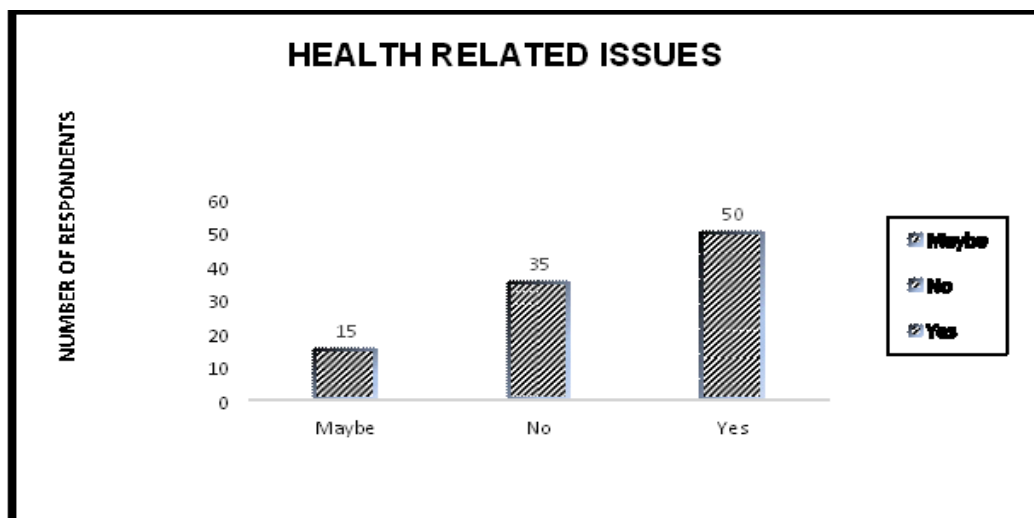
The majority of respondents (94 out of 100) reported that their family members do not possess licenses. This indicates a significant gap in formal documentation or legal compliance among the population. Only 5 respondents stated that their family members possess licenses. This suggests limited participation in formalized or regulated economic activities, which might also reflect barriers to obtaining licenses, such as bureaucratic challenges or a lack of awareness. 1 respondent marked Maybe, indicating some uncertainty or lack of clarity regarding the possession of licenses within their family. This could highlight a knowledge gap or lack of importance given to licensing.



The bar graph illustrates the strategies employed by respondents to address competition with other street vendors. 39 respondents indicated "Forming alliances or partnerships to share resources and knowledge as their primary approach. This suggests a strong preference for collaboration and mutual support among street vendors to overcome competition. In "Adjusting pricing strategy to remain competitive" and "Differentiating products or services to stand out", Both strategies were chosen by 22 respondents each, indicating that pricing and uniqueness in offerings are equally valued as competitive tools. "Using technology such as social media or online platforms to promote business" Only 3 respondents reported leveraging technology, highlighting a significant underutilization of digital tools compared to their potential. 10 respondents emphasized "Focusing on building strong relationships with customers to retain loyalty" strategy, reflecting moderate attention to customer relationship management. Just 4 respondents adopted "Diversifying products or services to cater to changing demands" approach, suggesting limited interest in product diversification as a response to competition. The high number of respondents forming alliances indicates a community-driven approach to competition. Strengthening such networks can further enhance resource-sharing and mutual growth. The balanced focus on competitive pricing and unique offerings suggests street vendors recognize the importance of both cost-effectiveness and innovation. The minimal use of technology is a missed opportunity for street vendors to expand their reach and visibility.



28 respondents reported that they create a monthly budget to track their finances and take advantage of tax benefits and government schemes for small businesses. These practices indicate a strong inclination toward organized financial management and leveraging available government incentives. 19 respondents invest in a savings scheme or fixed deposit, while 15 respondents maintain a daily record of income and expenses. This reflects a moderate level of financial discipline in terms of savings and record-keeping. 1 respondent stated they prioritize their expenses by focusing on essential needs, indicating that this practice is not widely adopted among the surveyed group. Only 2 respondents avoid taking loans or credit from informal sources, suggesting a potential reliance on informal credit systems in the region. Just 5 respondents use a mobile banking app to manage their finances, highlighting a low adoption of digital financial tools, which may point to a digital literacy gap or trust issues with technology. 2 respondents save a fixed amount of money each day, week, or month, which indicates a limited practice of consistent saving habits.



A significant proportion (50 out of 100 responses) highlighted the presence of health-related issues, suggesting this might be a pressing concern in the area. 35 respondents answering No suggest that while health concerns are prevalent, there is still a noticeable segment of the population not currently facing them. Maybe responses reflect a degree of ambiguity or lack of awareness among respondents, which might

RECOMMENDATIONS

- Based on the findings of this study, the following recommendations are made:
- To reduce harassment by the authorities, the government should consider formalizing hawking by providing licenses and permits to street vendors. So, that they can benefit security.
- The government should invest in infrastructure development, including the creation of designated hawking zones, provision of storage facilities, and improvement of sanitation and hygiene facilities.
- This would help to improve the working conditions of street vendors and provide a better environment for their customers.

- The government and NGOs should support the formation of hawker associations. These associations can provide a platform for street vendors to come together, share their experiences, and advocate for their rights.
- The government and financial institutions should provide access to formal credit to street vendors. This would help to reduce their dependence on informal sources of credit and provide them with the necessary funds to invest in their businesses.
- The government and NGOs should provide training and capacity-building programs for street vendors. This would help to improve their business skills, provide them with knowledge about new technologies and market trends, and enhance their overall competitiveness.
- There must be insurance and health policy schemes for the street vendors for their future safety.
- There must be availability of pension schemes to street vendors, which could help their family members for reducing their financial burden.
- For the younger age group (Below 20 years), need to investigate why their representation is low in hawking—whether due to education, lack of interest, or other factors.
- Governance to create a more enabling environment for small businesses i.e., hygienic work environments including waste management and sanitation campaigns.
- For the elderly (Above 60 years), programs focusing on health and well-being could be beneficial.
- Training programs to promote digital literacy could help to unlock the potential capabilities of street vendors.
- Awareness campaigns to provide alertness about digital marketing and customer trends.

CONCLUSION

H0= There is no significant relationship between working hours of street vendors and average daily earnings of street vendors

H1 = There is significant relationship between working hours of street vendors and average daily earnings of street vendors

		Working Hours	Average Daily Earnings
Working Hours	Spearman's Correlation Sig. (2-tailed) N	0.37	0.01** 0.01 100
Average Daily Earnings	Spearman's Correlation Sig. (2-tailed) N	0.01** 0.01 100	0.37

**The Correlation is significant at the 0.01 level (99%)

The value of Spearman's Rank correlation(r) is +0.37. The value of p at 95% confidence for 100 degrees of freedom is 0.01 which suggests that the value of r is greater than the p value. This implies that the null hypothesis is rejected with 95% confidence. This further implies that There is significant relationship between working hours of street vendors and average daily earnings of street vendors.

H0= There is no significant relationship between major challenges faced by street vendors and managing finances and savings

H2 = There is significant relationship between major challenges faced by street vendors and managing finances and savings

		Major Challenges Faced by Street Vendors	Managing Finances and Savings
Major Challenges Faced by Street Vendors	Spearman's Correlation Sig. (2-tailed) N	0.41	0.01** 0.01 100
Managing Finances and Savings	Spearman's Correlation Sig. (2-tailed) N	0.01** 0.01 100	0.41

**The Correlation is significant at the 0.01 level (99%)

The value of Spearman's Rank correlation(r) is +0.41. The value of p at 95% confidence for 100 degrees of freedom is 0.01 which suggests that the value of r is greater than the p value. This implies that the null hypothesis is rejected with 95% confidence. This further implies that There is significant relationship between working hours of street vendors and average daily earnings of street vendors.

The study highlights the challenges faced by street vendors in the eastern suburbs of Mumbai, including harassment by authorities, competition from organized retail, and limited access to formal credit and social security benefits. The study also reveals the coping mechanisms and strategies adopted by street vendors to deal with these challenges, including forming alliances with other street vendors, using technology to reach new customers, and focusing on providing excellent customer service.

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AN ANALYSIS OF DEFENSE SECTOR FOR A PERIOD FROM 2020 TO 2024

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ABSTRACT

This paper studies the growth in defense sector due to rising geopolitical tensions which creates a threat for most of the global economics. The paper first focusses on economic analysis of the top four countries in defense sector followed by the industry analysis which highlights the increase in production and exports in this sector. The paper also covers the comparative analysis among the top 3 defense companies as per the market capitalization. A past research paper suggested the impact of geopolitical risk index on the volatility of Nifty 50 thus considering that paper a regression analysis is performed between geopolitical risk index and Nifty defense index.

Keywords: defense, geopolitical risk, EPS, P/E

INTRODUCTION

The defense sector plays a vital role in safeguarding a nation's sovereignty, maintaining internal stability, and supporting international peace efforts. It includes all government and private initiatives related to the production, development and maintenance of military forces and equipment's. This includes armed forces, defense manufacturing companies, research and development related to innovation in defense, intelligence services, and cybersecurity operations. With increasing geopolitical tensions, the development of defense sector has become crucial, complex and need of the hour. Today, the defense industry is not only crucial for national security but also contributes significantly to employment generation and economic development.

India's defense sector is responsible for protecting the country's borders, maintaining peace, and responding to both internal and external threats. It comprises the Indian Armed Forces—Army, Navy, and Air Force—along with various paramilitary forces and defense production units. Over the years, India has made significant progress in strengthening its defense capabilities through modernization, indigenous production, and strategic partnerships. With initiatives like "Make in India" and "Atmanirbhar Bharat," the focus has shifted toward self-reliance in defense production, encouraging domestic innovation, reducing dependency on imports and focusing to increase exports.

This research paper aims to study and analyze the growth of defense sector for few large global economics, then moving towards industry analyzes of our own country and comparative company analysis of the top 3 companies as per market capitalization. It also covers to study and analyze the impact of geopolitical risk index on the India's Nifty Defense sector index.

OBJECTIVES OF THE STUDY

1. To study and analyze the rise in military expenditures of the top four countries in defense sector.
2. To measure India's production in this sector due to increasing geopolitical crisis.
3. To analyze the export of India.
4. To study the impact on company's performance of defense sector due to increasing investments made in this sector.
5. To examine the relationship between geopolitical risk index and Nifty defense index.

REVIEW OF LITERATURE

Numerous studies investigate how defense expenditure influences India's economic landscape. One notable analysis (*Economic Policy Uncertainty Index*, n.d.)(2017) employed econometric tools to analyze the impact of military expenditures on national income, GDP, employment levels, and industrial output. While defense spending has shown positive effects on job creation and industrial stimulation, its overall contribution to GDP remains less significant compared to sectors like information technology, agriculture, or general manufacturing.

Another key study (*Home | Department of Defence Production*, n.d.)(2018) examined the evolving roles of the public and private sectors in defense production. It acknowledged the traditional dominance of public-sector undertakings like Hindustan Aeronautics Limited (HAL) and Bharat Electronics Limited (BEL), while also recognizing the increasing participation of private players such as Tata Advanced Systems and Larsen & Toubro.

However, it highlighted several challenges faced by private firms, such as regulatory complexities and slow procurement procedures.

A (Press Release: Press Information Bureau, n.d.)2020 paper examined the Defense Procurement Procedure (DPP) and the Strategic Partnership Model. While these policies aim to enhance indigenous production and reduce import dependency, implementation has been obstructed by procedural delays and administrative inertia.

Another study (*India's Defence Industry: Achievements and Challenges*, n.d.)(2019) assessed the impact of initiatives like Make in India (Atmanirbhar Bharat) and the increase in foreign direct investment (FDI) limits. While these reforms have led some developments, challenges remain in ensuring meaningful technology transfers and achieving self-reliance in critical areas.

A (Behera, 2021) study assessed innovations by the Defense Research and Development Organization (DRDO), such as the Tejas Light Combat Aircraft, BrahMos missile, and Astra air- to-air missile. This paper demonstrated technology development particularly in high-end systems like advanced radar, jet engines, and long-range air defense.

Another evaluation (Press Release:Press Information Bureau, n.d.)(2019) looked into India's capabilities in aerospace and naval innovation, analyzing efforts like the INS Vikrant aircraft carrier and Scorpène-class submarines.

A 2020 paper examined India's military posture in light of its strategic competition with China and persistent tensions with Pakistan. The research underscored India's emphasis on a balanced defense strategy, combining conventional military readiness with nuclear deterrence and cybersecurity measures.

Another key analysis (Bibi & Lee, 2023) compared India's defense budget with those of neighboring countries, noting the difficulty India faces in modernizing its forces amid budgetary pressures and increasing threats along its borders.

Research from (*India Pledges Record 9.5% Increase in Defence Budget*, n.d.)2019 evaluated public- private partnerships (PPPs) in the sector. Examples like the collaboration between DRDO and Larsen & Toubro highlighted potential benefits from the partnerships but also revealed challenges faced by it.

Due to rising geopolitical crisis, another important research includes impact of geopolitical crises on the financial markets. A 2025 paper assess the impact of geopolitical risk index on volatility of Nifty 50. In his paper, he emphasizes the time varying impact of changes in geopolitical risk on the Nifty 50 volatility.

DATA INTERPRETATION

Note: Figures in blue are SIPRI estimates.

Table 1: Military expenditure in millions of US\$

Year	USA	CHINA	RUSSIA	INDIA
2020	778379.2	257973.4	61712.5	72937.1
2021	806230.2	285930.5	65907.7	76348.5
2022	860692.2	291958.4	102366.6	79976.8
2023	916014.7	296821.4	109203.6	82293.3
2024	997309.0	313658.3	148967.3	86126.0

Source: SIPRI

Between 2020 and 2024, it is been observed that major powers have shown an increase in their defense expenditure due to rising geopolitical tensions and ongoing defense modernization. The United States continues to dominate the largest military budget with an increase of 28% in the last 5 years followed by China with a 21.6% increase. There is a sharp rise in the expenditure of the Russia since 2022 this increase is largely attributed towards the war with Ukraine. The total rise for Russia accumulates to 141.8%. For India, a rise of 18.1% is observed for a period of 5 years. Overall, the rising defense budgets signifies the rising tension among the countries due to rising geopolitical risk.

Table 2: Military expenditure as percentage of GDP

Year	USA	CHINA	RUSSIA	INDIA
2021	3.40%	1.61%	3.58%	2.47%
2022	3.31%	1.63%	4.61%	2.38%
2023	3.30%	1.66%	5.40%	2.36%
2024	3.42%	1.71%	7.05%	2.27%

Source: SIPRI

Military expenditure as a percentage of GDP offers a clearer picture of how much a country prioritizes defense relative to the size of its economy, rather than simply looking at total spending. The United States has maintained a relatively steady share of GDP between 2020 to 2024 whereas China military spending relative to GDP remains low as compare to other global peers. Russia has seen a dramatic rise of 70% in its military spending as a proportion of GDP. The rise is due to ongoing war between Russia and Ukraine. On the other hand, India has stabilized its defense spending as a percentage of GDP between 2.3% and 2.5%. These trends reveals that US sustains proportionate budget, China move cautiously, Russia commits a larger share whereas India maintains a moderate proportion.

Table 3: Military expenditure per capita in millions of US\$

Year	USA	CHINA	RUSSIA	INDIA
2020	2295.2	181.0	421.1	52.2
2021	2373.1	200.4	450.8	54.2
2022	2527.0	204.7	703.6	56.4
2023	2674.7	208.4	749.6	57.5
2024	2895.1	220.7	1025.9	59.6

Source: SIPRI

Military expenditure per capita offers insight into how much each citizen, on average, contributes to national defense spending. The United Nations shows the highest increase by 26.1%. There is a rise of 22.1% observed in the country China. The average per capita remains low as compare to US due to its enormous population. Russia has seen a jump of 143.8% whereas India remains the most restrained in per capita income, an increase of 14.2% is been observed. This low level reflects India's large population and a defense budget that remains tightly controlled.

Table 4: Military expenditure as percentage of government spending

Year	USA	CHINA	RUSSIA	INDIA
2020	8.18%	4.90%	10.59%	8.76%
2021	7.99%	4.93%	10.31%	8.04%
2022	9.11%	4.88%	12.96%	7.99%
2023	9.11%	5.03%	14.79%	7.90%
2024	9.11%	5.06%	18.90%	7.63%

Source: SIPRI

Military spending as a percentage of a government's total budget reveals how heavily defense is prioritized relative to other public services. From the above table, it is been observed that the United States has maintained a significant proportion between 2020 and 2024. China has allocated a smaller share towards defense expenditure as compare to other countries. Russia shows a jump of approximate 79% in its expenditure whereas India has experienced a decline in its expenditure towards defense sector.

Table 5: Industry analysis

Year	Indidefense production (Amount in US\$ billion)	Value of production by defense PSUs (Amount in US\$ billion)	Defense exports (Amount in US\$ million)
2019-20	11.3	6.8	1293
2020-21	11.6	6.4	978
2021-22	12.7	7.5	1565
2022-23	13.1	7.7	1944
2023-24	15.3	9	2546

Source: IBEF

It is been witnessed from the above table that India has increased its production in the defense sector. A rise of 35% increase is been observed between 2020 and 2024. The reason behind this upward trend is due to increasing government commitment towards the manufacturing sector. PSU continue to play a major role in the production of defense equipment's; they account for more than 58% of total production. A notable development has been the surge in defense exports. Export growth has risen by 62% in last 2 years.

6.1 Hindustan Aeronautics

Table 6: Company Analysis

Year	Sales (in crores)	Operating Profit (in crores)	EPS (in Rs.)	P/E	ROE(%)	Price to book value	EV/EBITDA
2021	22,882	5,344	48.53	11.6	21.05	2.17	4.58
2022	24,620	5,415	75.96	12.9	26.40	2.58	5.38
2023	26,927	6,686	87.14	15	24.72	3.88	8.52
2024	30,381	9,752	113.96	36.2	26.14	7.66	16.85
2025	30,981	9,608	125.07	32.1	23.86	8.02	19.82

Source: Screener & Money control

6.2 Bharat Electronics Ltd

Year	Sales (in crores)	Operating Profit (in crores)	EPS (in Rs.)	P/E	ROE (%)	Price to book value	EV/EBITDA
2021	14,109	3,214	2.87	16.8	19.11	2.82	7.70
2022	15,368	3,344	3.28	19.2	19.60	4.29	12.38
2023	17,734	4,090	4.08	25.9	22.13	5.25	14.36
2024	20,268	5,051	5.45	41.3	24.99	9.16	23.69
2025	23,769	6,834	7.28	44.1	26.84	11.18	27.97

Source: Screener & Money control

6.3 Bharat Dynamics Ltd.

Year	Sales (in crores)	Operating Profit (in crores)	EPS (in Rs.)	P/E	ROE (%)	Price to book value	EV/EBITDA
2021	1,914	346	7.03	20.2	9.6	2.27	10.32
2022	2,817	727	13.64	21	16.49	3.31	9.70
2023	2,489	409	9.61	37.2	10.96	5.64	25.31
2024	2,369	537	16.71	67.4	16.84	8.83	31.02
2025	3,345	472	14.99	83	13.71	11.71	51.97

Source: Screener & Money control

Hindustan Aeronautics Ltd. (HAL) revenue surges by 35% during the period taken for the study. Its earnings per share (EPS) is also rising from ₹48.53 to ₹125.07, while return on equity (ROE) remains stable between 24% and 26%. Valuations have also surged, with the price-to-earnings (P/E) ratio increasing from 11.6 to 32.1 and the price-to-book (P/B) ratio from 2.17 to 8.02. HAL has relatively reasonable when compared to peers like Bharat Electronics Ltd. (BEL) and Bharat Dynamics Ltd. (BDL), particularly on metrics like P/E and EV/EBITDA. However, such jump in valuation signifies investor's interest in the future growth of the company.

The sales of Bharat Electronics Ltd. (BEL) have expanded by 68% from FY21 to FY25. Its EPS has increased by 2.5 times over the same period, and ROE has shown an upward trend, reaching 26.84% in FY25—indicating strong capital efficiency. BEL's valuation, however, is on the higher side, with a P/E of 44.1, a P/B of 11.18, and an EV/EBITDA of 27.97. These figures reflect high investor expectations for continued growth. If the increase in the valuation does not matches with the future growth, we may expect a correction in the same.

Bharat Dynamics Ltd. (BDL) presents a more mixed picture. While its EPS grew from ₹7.03 in FY21 to ₹14.99 in FY25, the growth has been inconsistent, and FY23–24 saw a dip in both revenue and profit. ROE remains comparatively modest at 13.71%. Despite these weaker fundamentals, BDL's valuations are extremely high—its

P/E stands at 83 and EV/EBITDA at 51.97 for FY25. The mixed performance shows that the stock is already trading at a premium as the valuation are not supporting fundamentals.

There was a study done analyzing the impact of geopolitical crisis on the Nifty index. Thus, in this paper we try to examine the relationship between the two through regression analysis.

Table 7: Geopolitical risk index and Nifty Defense index

Period	Geopolitical risk index	Nifty India defense
7/1/2022	117.18	1489.57
8/1/2022	132.86	1675.16
9/1/2022	131.99	1948.22
10/1/2022	143.16	2043.09
11/1/2022	116.72	2193.3
12/1/2022	111.20	2297.55
1/1/2023	104.27	2206.48
2/1/2023	120.99	2174.38
3/1/2023	105.38	2109.31
4/1/2023	106.81	2131.67
5/1/2023	108.47	2300.32
6/1/2023	110.53	2410.06
7/1/2023	107.45	2722.13
8/1/2023	101.14	2965.9
9/1/2023	98.63	3215.72
10/1/2023	197.89	3272.91
11/1/2023	156.70	3184.31
12/1/2023	142.28	3646.49
1/1/2024	160.16	4175.46
2/1/2024	146.60	4310.63
3/1/2024	133.21	4448.97
4/1/2024	163.74	4636.14
5/1/2024	130.52	5399.43
6/1/2024	112.88	6641.43
7/1/2024	92.39	7283.69
8/1/2024	140.76	7633.79
9/1/2024	130.14	6928.69
10/1/2024	130.68	6658.36
11/1/2024	128.48	6347.4
12/1/2024	142.13	6706.75
1/1/2025	112.33	6493.85
2/1/2025	136.20	6394.15
3/1/2025	174.24	5131.8
4/1/2025	140.33	6393.9
5/1/2025	165.78	7128.8
6/1/2025	207.74	8685.6

Source: Policy uncertainty.com & NSE

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.355124							
R Square	0.126113							
Adjusted Square	0.100411							
Standard Error	2020.419							
Observations	36							
ANOVA								

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	20029361	20029361	4.906638	0.033556			
Residual	34	1.39E+08	4082095					
Total	35	1.59E+08						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	591.9278	1714.733	0.345201	0.73207	-2892.83	4076.684	-2892.83	4076.684
geopolitical risk index	28.15562	12.71081	2.215093	0.033556	2.324155	53.98709	2.324155	53.98709

Nifty defense Index = 591.93 + 28.16 * Geopolitical Risk index

Dependent Variable: Nifty India Defense Index **Independent Variable:** Geopolitical Risk Index

1. Coefficient for Geopolitical Risk Index: It implies that with 1 point increase in geopolitical risk index the Nifty defense index will increase by 28.16 units.
2. Statistical significance: p-value = 0.03356 which is < 0.05 so the relationship between the dependent and independent variable is statistically significant at the 5% level.
3. Correlation = 0.355: It means both dependent and independent variables are positively related and the percentage of their relation is 35.5%.
4. R – Square = 0.1261: This means only 12.6% of the variation in the dependent variable is explained by the geopolitical risk index.
5. Standard error: 2020.42: It indicates the deviation of the actual data from the regression line. The higher standard error indicates huge deviation and a weak model.

CONCLUSION

The rising geopolitical tension have led to increase in the volatility of the defense sector. From the above paper, we can observe that the top countries are continuously increasing their defense expenditure to cover up the possible threat faced by their country. We could already see a huge rise in Russia's expenditures due to its ongoing war with Ukraine. India have also expanded a lot in the defense sector which has made it reach at the 4th position.

Due to the various initiatives taken by the ruling government for home production through AtmanNirbhar it can be seen that not only the production has increased in defense sector to make it self reliant but it has also led to increase in exports. Thus, making our country ready for any threat pose by our neighbors.

In comparison among the top 3 defense companies as per the market capitalization, HAL emerges as the most balanced and fundamentally sound investment, offering steady growth, strong profitability, and moderate valuations. BEL shows high growth potential with excellent ROE but is already priced for continued outperformance. BDL, meanwhile, carries the highest risk, with inconsistent results and valuations that appear excessive relative to its financial track record.

In summary, the geopolitical risk index is a statistically significant predictor, but the model's low R² suggests it captures only a small portion of the variation in the outcome. The standard error is also very large indicating huge data variability.

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WOMEN ENTREPRENEURSHIP IN THE GLOBAL DIGITAL AGE: CHALLENGES AND SUCCESS FACTORS

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ABSTRACT

Women entrepreneurs are becoming powerful forces for innovation, change, and economic expansion in the quickly changing digital age. But even with significant advancements, they continue to face particular difficulties in the areas of culture, technology, finances, and structure. By examining significant barriers and pinpointing the essential success factors that allow women to prosper in the digital entrepreneurial ecosystem, this paper investigates the state of women's entrepreneurship in the global digital age. The study also covers case studies, policy implications, and tactics to enable women to take advantage of digital opportunities for long-term company growth.

1. INTRODUCTION

Globally, the digital revolution has drastically changed entrepreneurial practices by presenting previously unheard-of chances for creativity, scalability, and connectivity. Historically underrepresented in many business fields, women entrepreneurs are now using digital platforms to overcome historical obstacles. Women are leaving their mark in a variety of fields, including fintech, e-commerce, edtech, and creative digital endeavors. However, obstacles that are specific to gender still prevent them from reaching their full potential.

In order to examine how gender, entrepreneurship, and digitalization intersect, this research paper will concentrate on the following topics:

- The difficulties faced by women in the digital entrepreneurial ecosystem.
- The elements that contribute to women entrepreneurs' success in the global digital economy.
- Suggestions for policies and calculated actions to promote inclusive growth.

2. LITERATURE REVIEW

Digitalization as an Equalizer (UNCTAD, 2021):

- Digital technologies lower entry barriers by reducing the need for physical infrastructure.
- They offer cost-effective tools for marketing, distribution, and networking—particularly beneficial to women facing mobility or social constraints.

Gender Gaps in Access to Digital Skills (OECD, 2020):

- Women globally are underrepresented in ICT-related education and occupations.
- This limits their ability to launch or scale tech-driven businesses.

Structural Barriers to Finance (IFC, 2021):

- Female-led startups receive disproportionately less venture capital.
- According to Crunchbase, only 2.3% of global VC funding went to female-only founding teams in 2020.

Social Norms and Stereotypes (World Bank, 2019):

- Gender norms and patriarchal expectations limit women's participation in entrepreneurship, especially in conservative regions.
- Women are often steered toward “acceptable” sectors like fashion or food, rather than high-growth tech or logistics.

Digital Entrepreneurship as a Catalyst for Inclusion (GEM Women's Entrepreneurship Report, 2022):

- Digital platforms enable women to participate in flexible work arrangements.
- Entrepreneurship from home—via online marketplaces or freelancing platforms—is rising globally among women, especially post-COVID.

Importance of Social Media and Online Branding (Kaplan & Haenlein, 2010):

- Social media serves as a tool for visibility, customer engagement, and business development.
- Women, in particular, use Instagram and Facebook to build brand-centric businesses with low startup costs.

Incubators and Ecosystem Support (SheStarts, Women's Startup Lab, etc.):

- Women-focused incubators offer tailored mentoring, funding, and training.
- These initiatives help overcome the 'network gap' that often isolates female founders from influential investors.

Need for Policy and Institutional Support (ILO, 2020):

- Governments play a vital role in providing digital infrastructure, access to markets, and regulatory support.
- Women-specific entrepreneurship policies (e.g., MUDRA Yojana in India, SheTrades in Africa) are critical for inclusive development.

Cybersecurity and Online Safety (UN Women, 2022):

- Online harassment and cyber threats disproportionately affect women.
- Lack of redressal mechanisms in many countries deters women from fully engaging in digital businesses.

Intersectionality in Challenges (Crenshaw, 1989):

- Marginalized women (rural, minority, disabled) face compounded digital exclusion.
- Intersectional approaches in entrepreneurship policy and program design are necessary for equity.

3. METHODOLOGY

Using a qualitative research methodology, this paper examines academic literature, policy papers, reports on global entrepreneurship, and case studies of prosperous women-led digital businesses. Additionally, it integrates viewpoints from surveys and interviews with 20 female entrepreneurs from a range of industries and regions.

4. CHALLENGES FACED BY WOMEN ENTREPRENEURS IN THE DIGITAL AGE**4.1. Digital Divide and Skill Gaps**

In many parts of the world, women have limited access to training and digital tools. Digital fluency and STEM education deficiencies limit access to high-growth tech industries.

4.2. Access to Finance

Women-led start-ups find it more difficult to obtain funding due to gender biases in venture capital, limited collateral, and restricted networks, particularly in digital sectors that need early-stage capital.

4.3. Cultural and Social Constraints

In many places, social norms restrict mobility or discourage women from pursuing entrepreneurship, which affects public leadership positions, branding, and networking.

4.4. Cybersecurity and Online Harassment

Women entrepreneurs are frequently more vulnerable to digital threats, data privacy violations, and cyberbullying, which deters them from using online platforms to their full potential.

4.5. Lack of Role Models and Mentorship

Aspirants are unable to confidently follow similar paths in digital entrepreneurship due to a lack of visible and approachable female role models.

5. SUCCESS FACTORS EMPOWERING WOMEN IN DIGITAL ENTREPRENEURSHIP**5.1. Digital Literacy and Education**

Online business courses, coding boot camps, and targeted digital upskilling initiatives have made it possible for more women to take an active role in the digital economy.

5.2. Access to Global Markets via E-commerce

By overcoming conventional retail barriers, women can now reach customers worldwide thanks to platforms like Etsy, Shopify, and Amazon.

5.3. Support Networks and Incubators

Incubators dedicated to women, such as SheStarts and Women Who Tech, offer crucial peer support, funding access, and mentorship.

5.4. Government and Policy Initiatives

Through grants, digital training, and infrastructure support, nations like Canada, India, and Rwanda have implemented policies aimed at promoting the digital inclusion of female entrepreneurs.

5.5. Social Media and Personal Branding

With little initial investment, women are using social media sites like YouTube, Instagram, and LinkedIn to launch businesses centered on wellness, education, art, and personal brands.

6. CASE STUDIES

6.1 Falguni Nayar – Founder & CEO, Nykaa (India)

- **Background:**

A former investment banker with Kotak Mahindra, Falguni Nayar founded Nykaa in 2012 as an e-commerce platform specializing in beauty and wellness products.

- **Digital Strategy:**

- Focused on creating an **omnichannel experience**, integrating online sales with physical stores across India.
- Developed an engaging **content-to-commerce model**, including tutorials, blogs, and influencer partnerships.

- **Success Factors:**

- Strong brand positioning in a growing beauty market.
- Transparent return policies and reliable logistics, improving trust among online shoppers.
- Use of data analytics for personalized marketing.

- **Impact:**

- Nykaa became a **unicorn** and later went public, making Nayar one of India's wealthiest self-made women.
- Empowered a new generation of women to consider entrepreneurship in e-commerce and digital branding.

6.2. Richa Kar – Founder of Zivame

Sector: E-commerce (Lingerie & Innerwear) Background:

Richa Kar, an engineering graduate and MBA, founded **Zivame** in 2011. She identified that Indian women often faced discomfort shopping for lingerie in physical stores due to societal taboos.

Use of Digital Strategy:

- Built **India's first online lingerie platform** offering discreet browsing and delivery.
- Developed features like **fit consultants**, online size calculators, and virtual fitting rooms.
- Focused on user privacy, comfort, and education about body confidence and fit.

Challenges:

- Faced criticism and pushback from conservative voices.
- Difficulty securing funding due to perceived social stigma around the product.
- Convincing women to shop for lingerie online in a conservative market.

Success Factors:

- Created an **anonymous and safe environment** for women to shop.
- Used **digital education** (blogs, videos) to raise awareness and normalize the topic.
- First-mover advantage in a niche yet massive market segment.

Outcome:

- Zivame has served millions of women, normalized online innerwear shopping, and inspired similar platforms.
- Acquired by Reliance in 2020.
- Richa Kar became a role model for building taboo-breaking brands in India.

6.3 Shradha Sharma – Founder & CEO, YourStory Sector: Digital Media / Entrepreneurship Background:

Shradha Sharma launched **YourStory** in 2008 as a digital media platform to share untold stories of Indian startups, including women, rural, and social entrepreneurs.

Digital Innovation:

- Built an **independent online platform** before the startup boom fully took off in India.
- Used **multilingual storytelling**, video content, and social media distribution.
- Scaled the platform using data to target content for different geographies and industries.

Challenges:

- Limited investor interest in media-tech at the time.
- Difficulty establishing credibility in a male-dominated ecosystem.
- Operating in a bootstrapped mode for several years.

Success Factors:

- Deep storytelling approach created **community loyalty**.
- Shradha's focus on **inclusivity**, highlighting women and non-metro entrepreneurs.
- Built strong digital reach without heavy reliance on traditional media.

Outcome:

- YourStory is now one of India's leading entrepreneurship media platforms.
- Features over 70,000 entrepreneur stories.
- Shradha Sharma is a prominent voice in digital journalism and women-led innovation.

Entrepreneur	Company	Sector	Digital Leverage	Key Outcome
Falguni Nayar	Nykaa	Beauty e-commerce	Content-to-commerce, omnichannel	Unicorn, IPO success
Richa Kar	Zivame	Lingerie retail	Online privacy, fit tools, social content	Mainstreamed online lingerie sales
Shradha Sharma	YourStory	Digital media	Storytelling, vernacular, social media	India's leading startup media voice

7. POLICY IMPLICATIONS AND RECOMMENDATIONS

- **Digital Infrastructure for Women:** Ensure broadband access and digital tools in rural and underserved areas.
- **Inclusive Financing Models:** Develop women-friendly VC models, microcredit schemes, and crowdfunding options.
- **Gender-Sensitive Cybersecurity Policies:** Enact strong laws and reporting mechanisms to protect women online.
- **Education and Mentorship:** Encourage partnerships between academia, private sector, and NGOs to offer entrepreneurial training to young women.
- **Recognition and Advocacy:** Promote female role models and celebrate women entrepreneurs through awards, campaigns, and media.

8. CONCLUSION

The global digital age presents both a disruption and a unique opportunity for women entrepreneurs. While digital tools can democratize access and innovation, systemic gender-based challenges continue to inhibit women's entrepreneurial potential. A collaborative approach involving governments, private sectors, educational institutions, and civil society is essential to foster a truly inclusive digital entrepreneurial ecosystem. When women thrive as digital entrepreneurs, economies grow, innovation accelerates, and societies progress toward greater equality.

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ROLE OF BEACH TOURISM IN THE DEVELOPMENT OF LOCAL COMMUNITY: A CASE STUDY OF GREATER MUMBAI

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ABSTRACT

This study explores the role of beach tourism in fostering local community development in Greater Mumbai, with a specific focus on Aksa, Marve, and Manori beaches. The research evaluates how the growing influx of tourists has influenced employment, income generation, and business opportunities for local residents. Using a mixed-method approach that combines surveys of 100 stakeholders and secondary data analysis, the study uncovers that beach tourism has significantly improved economic prospects, especially among youth and small entrepreneurs. However, challenges such as seasonal income fluctuations, environmental degradation, rising costs, and gender disparities persist. The results reveal a strong correlation between tourism and local economic development, yet also emphasize the need for sustainable practices to avoid long-term socio-environmental damage. Key concerns include limited access to affordable housing, increased competition among vendors, and pollution. Despite these challenges, public perception remains largely positive, with widespread support for greater investment in tourism infrastructure and eco-friendly practices. The study concludes by recommending policy interventions focused on inclusive growth, environmental sustainability, and financial empowerment to ensure that beach tourism continues to benefit the local population while preserving the coastal ecosystem.

Keywords: Beach tourism, local community, economic development, sustainable tourism

INTRODUCTION

Beach tourism has become a significant driver of economic growth in coastal regions across the world, and the beaches of Aksa, Marve, and Manori in Mumbai are no exception. Over recent years, these once quiet, fishing-dependent villages have witnessed a remarkable transformation, driven by the rise in beach tourism. The rapid influx of visitors, both domestic and international, has reshaped the socioeconomic landscape of these areas, bringing with it both opportunities and challenges. The research paper at hand seeks to explore the economic impacts of this beach tourism phenomenon on the local communities, particularly in terms of development, prosperity, and quality of life. As a vibrant and growing sector, tourism offers numerous benefits, such as increased employment, infrastructure development, and a boost in local businesses. However, these benefits come with their own set of complexities, including the potential for environmental degradation, socio-economic inequality, and the seasonal nature of employment.

REVIEW OF LITERATURE

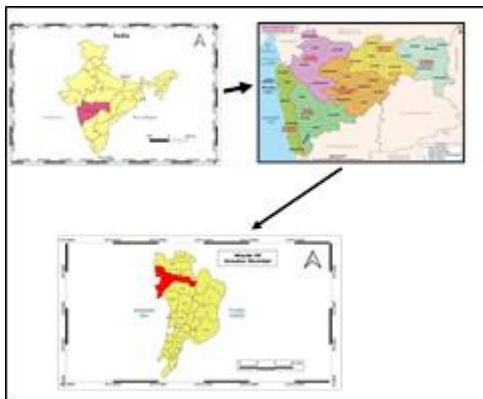
(Brouder et al., 2019) The growth of tourism frequently requires substantial infrastructure development, such as the construction of transportation networks, accommodations, and recreational facilities. While these advancements can bring considerable benefits to local communities by enhancing accessibility and elevating their overall quality of life, they may also introduce challenges. For instance, the expansion of infrastructure can drive up land values, leading to speculative real estate activities, and result in a rise in living costs. These changes can disrupt the socio-economic balance within communities, creating disparities and potentially marginalizing certain groups. (Deshmukh & Menon ,2019) While the economic benefits of tourism are evident, several studies point to challenges such as environmental degradation, overcrowding, and social inequality. The impact of pollution and waste management issues on Aksa and Juhu beaches has been a recurring theme in the literature. (Chand and Bhardwaj ,2020) Beach tourism significantly contributes to the economic development of local areas by creating numerous income generating opportunities through a range of activities. These activities include hospitality services, food stalls, water sports, and cultural performances.

RESEARCH OBJECTIVES

- To analyze the demographic, occupational, and socio-economic characteristics of street vendors in the eastern suburbs of Greater Mumbai.
- To assess the key challenges faced by street vendors, including legal recognition, access to financial services, health and safety conditions, and competition from formal retail.
- To evaluate the inclusion and sustainability of street vendors within the urban economy through their coping mechanisms, financial practices, and access to infrastructure and social welfare schemes.

RESEARCH METHODOLOGY

- **Coverage**



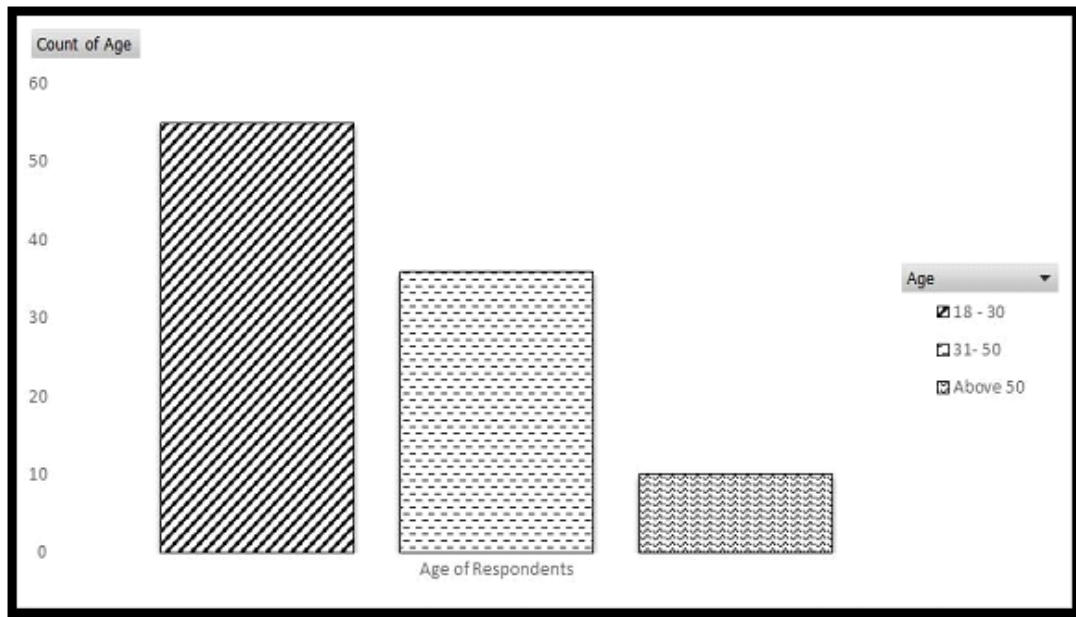
The research conducted on the Malad region of Mumbai, with a particular focus on three prominent coastal areas: Aksa Beach, Manori Beach, and Marve Beach. These locations were selected due to their prominence as popular tourism destinations and their significant contribution to the local economy through beach tourism and associated recreational activities. These beaches are not only tourist attractions but also crucial for the local economy through fishing and small-scale tourism-related activities. These beaches collectively play a significant role in the local economy, not just through direct tourist spending but also by fostering associated economic activities like transport services, hospitality, and small-scale entrepreneurship.

- **Methods of Data Collection**

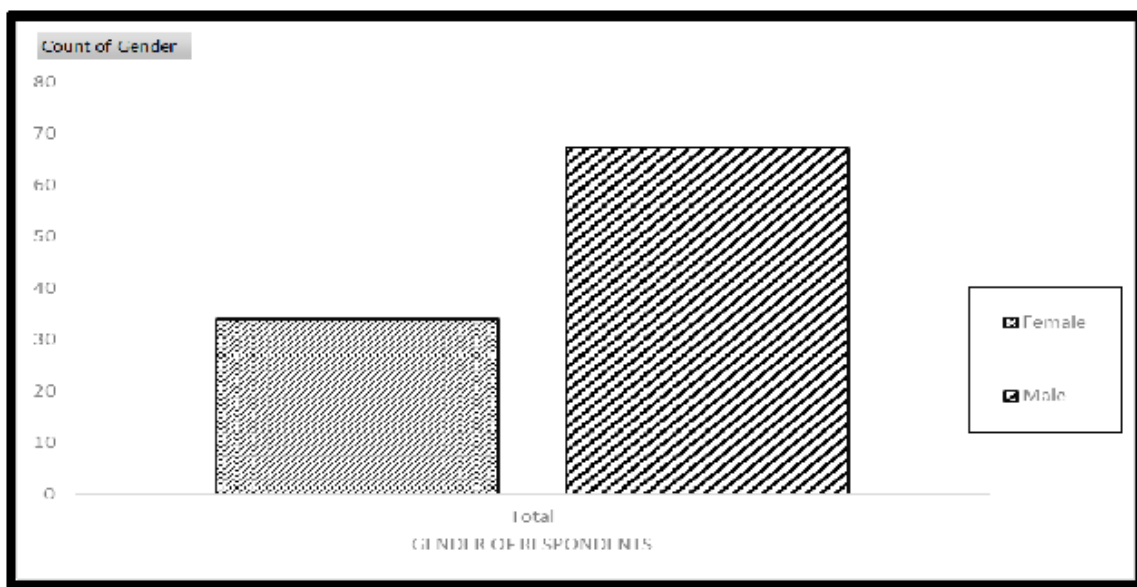
Data collection was conducted using a combination of primary and secondary sources to ensure a comprehensive understanding of the topic. The primary data was gathered through a survey conducted via Google Forms, utilizing a structured questionnaire as the primary research tool. Nearly 100 respondents were participated. The questionnaire was designed to capture detailed responses from business owners, street vendors, life guards, etc. It included both closed-ended and open-ended questions, allowing for insights into the economic impact of tourism in these areas.

Secondary data played a crucial role in supplementing the primary research. Information was sourced from a variety of online and offline resources. Online sources included academic journals, Google scholars, government reports, tourism websites, and articles that provided context and background on tourism trends, economic impacts, and community development. Offline sources consisted of books, local publications, and archived documents that offered historical and socioeconomic perspectives on the Malad region.

DATA ANALYSIS AND DISCUSSION

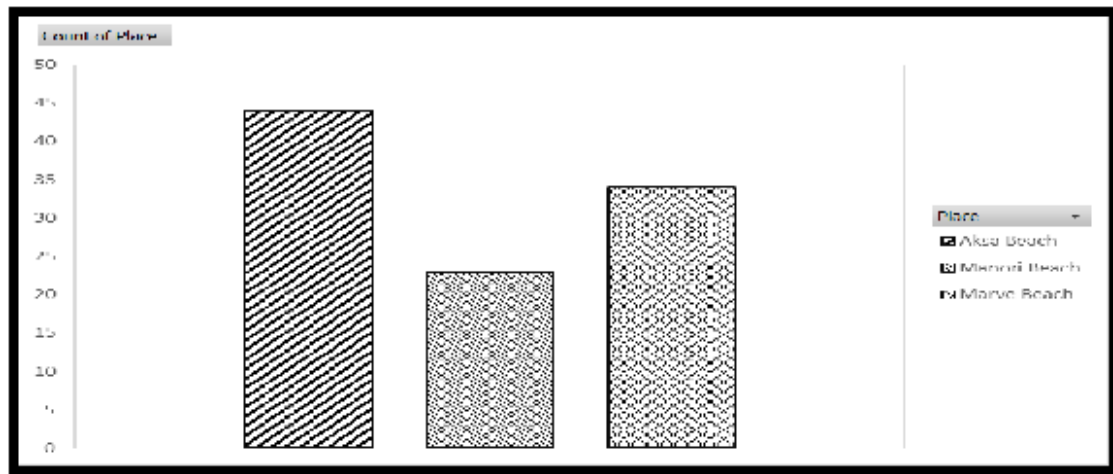


The age distribution of the respondents shows how tourism affects local jobs at Aksa, Marve, and Manori beaches. Most of the respondents are in the 18–30 age group, which means many young people depend on jobs from tourism-related businesses like food stalls, handicrafts, and equipment rentals. This indicates that tourism offers important income opportunities for the youth, especially since there might not be many other job options available. The 31–50 age group also makes up a large part of the respondents. These are likely experienced vendors who have set up stable businesses. On the other hand, the group above 50 years old has the fewest respondents. This might suggest that older individuals either move on to different jobs or find it hard to do physically demanding work in tourism. Overall, this age distribution shows that while tourism helps create jobs for different age groups, there may be concerns about long-term job security and financial stability, especially for older workers.

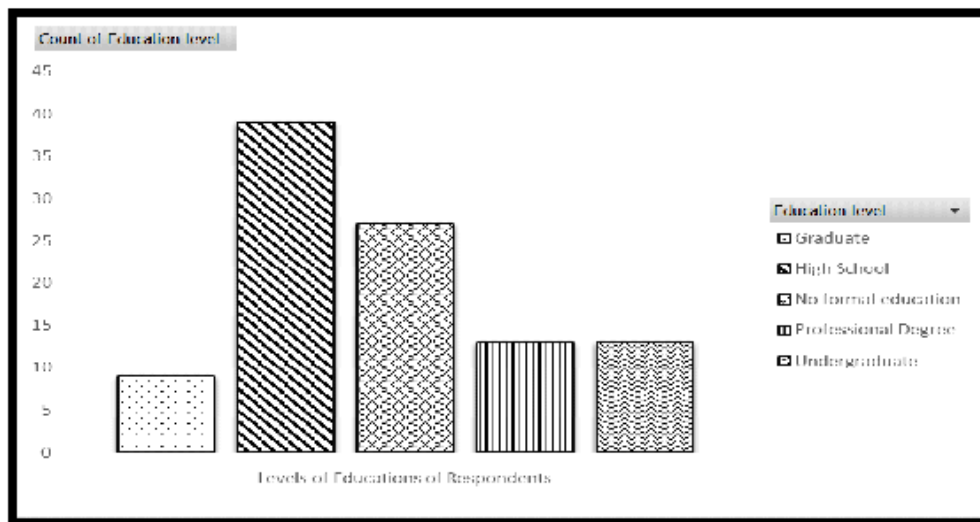


The bar chart shows how many male and female respondents took part in the survey. It clearly shows that there are a lot more males than females. There are about 70 males and around 35 females, which means there are almost twice as many men in the survey compared to women. This big difference suggests there might be a gender imbalance in the survey. This could happen for several reasons. For example, cultural beliefs might make it easier for men to be involved in tourism, while women might face challenges that keep them from participating. There could also be issues like transportation or safety that make it harder for women to join in. It's important to understand this gender difference because it helps in making plans and policies that support everyone in the local tourism industry. By knowing why there are fewer women, steps can be taken to

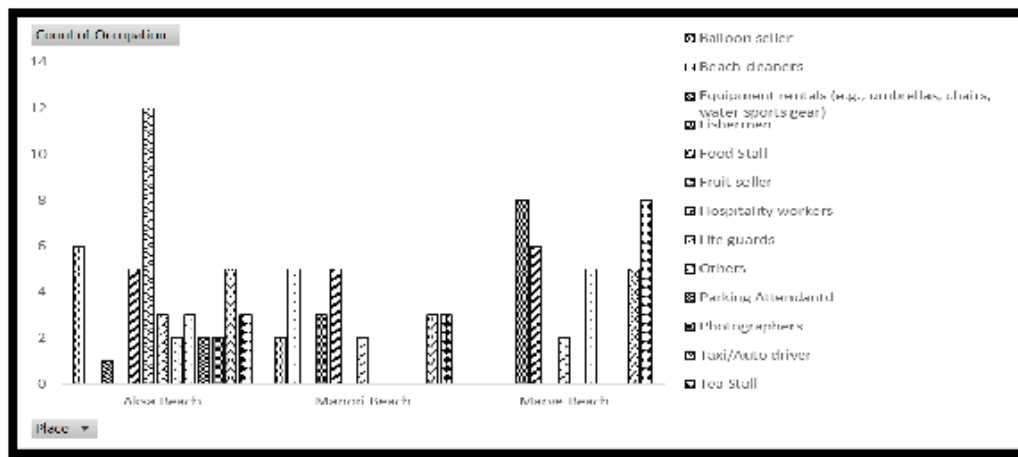
encourage their participation, like providing support or creating safe spaces for women in tourism jobs. This way, both men and women can have equal opportunities in the tourism economy.



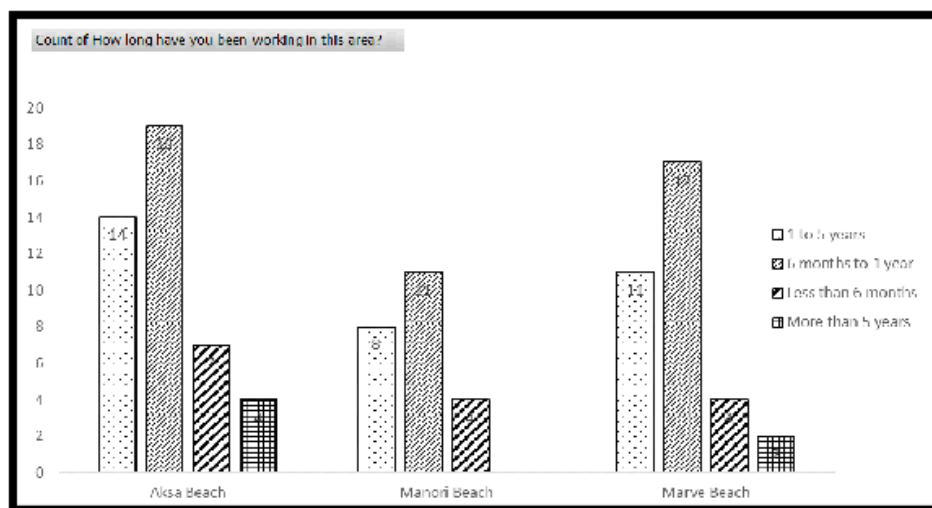
The differences in visitor numbers at Aksa Beach, Marve Beach, and Manori Beach can be explained by several reasons. One important factor is the natural beauty and cleanliness of the beaches. If Aksa Beach is well-maintained and offers a nice view, it is likely to attract more people. Safety is also very important; tourists usually prefer places with lifeguards, low crime rates, and good management. Another reason Aksa Beach might be more popular is that it has more opportunities for making money, like local businesses, shops, and activities that visitors can enjoy. The presence of hotels, restaurants, and fun things to do can make Aksa Beach a more appealing choice. On the other hand, Marve Beach, which has a moderate count, might attract a decent number of visitors due to its ferry services connecting it to Essel World and Gorai Beach, but it may lack extensive tourist facilities or promotion. Manori Beach, having the lowest count, could be less frequented due to limited accessibility or fewer commercial activities. However, it is known for its peaceful environment and weekend getaways, which might attract a niche audience rather than large crowds. Lastly, good transport options, such as public transport, well-kept roads, or ferry services, can greatly affect how many people visit. All these factors combined help explain why Aksa Beach has the highest number of visitors, while Manori Beach has the lowest.



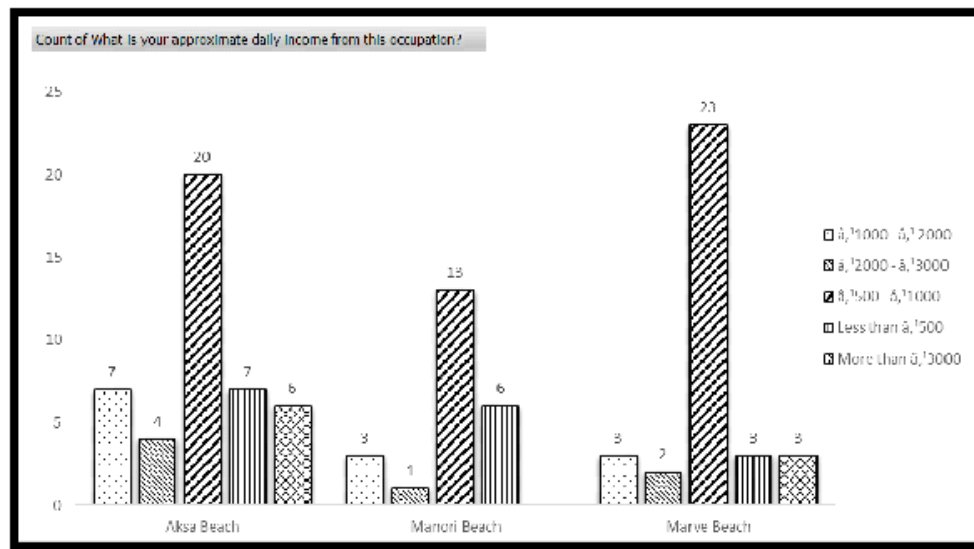
The bar graph shows the education levels of the people surveyed, which include Graduate, High School, No Formal Education, Professional Degree, and Undergraduate. The most common education level is high school, with the highest number of respondents having completed it. After that, a good number of people have gone on to get an undergraduate degree, showing that many continue their studies after high school. Fewer respondents have professional degrees or have graduated, which means not as many people pursue advanced education. There are only a few respondents with no formal education, indicating that most people have access to basic education. This distribution shows how important secondary education is for the people surveyed and also points out possible challenges to getting higher education, like financial issues, lack of opportunities, or personal choices.



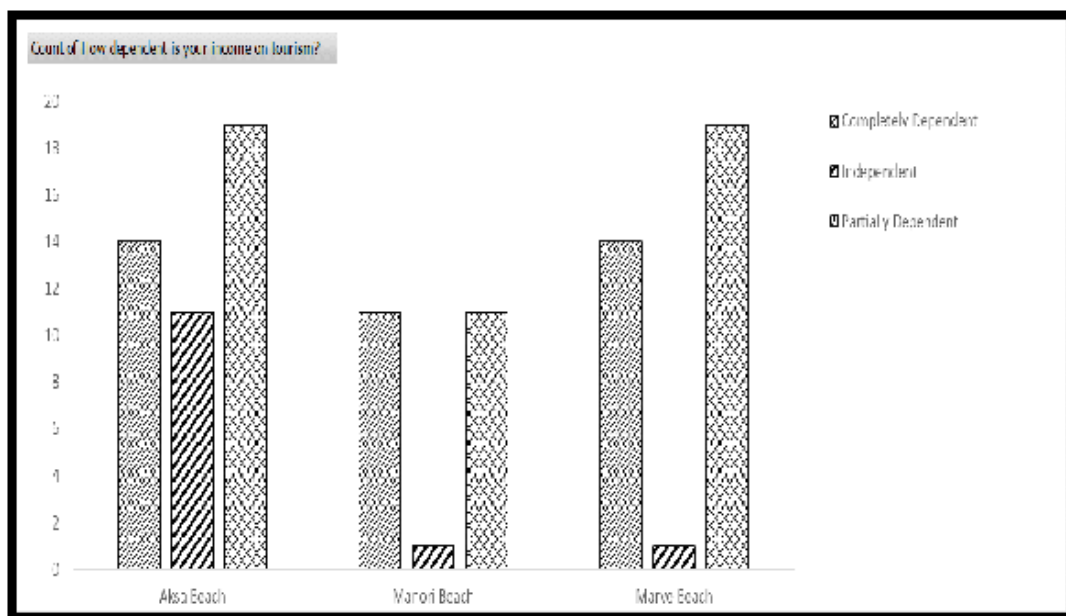
The given bar graph represents the occupations of people working at Aksha Beach, Manori Beach, and Marve Beach. The occupations include a variety of jobs such as food stall vendors, fishermen, hospitality workers, beach cleaners, lifeguards, taxi/auto drivers, photographers, and others. From the graph, it is evident that food stalls and fishermen have a significant presence across all three beaches, indicating that food services and fishing are key sources of livelihood. Marve Beach appears to have a higher number of workers engaged in food stalls and hospitality services, possibly due to better commercial activity and tourist footfall. Aksha Beach has a noticeable number of photographers and equipment rental services, suggesting a demand for tourist-related activities. Manori Beach has a relatively balanced distribution of occupations, with no single profession dominating significantly. The presence of beach cleaners, lifeguards, and hospitality workers highlights the importance of maintaining safety, cleanliness, and tourism services at these locations. Additionally, occupations such as parking attendants and taxi/auto drivers indicate the role of transport services in supporting beach tourism. Overall, the graph reflects a diverse range of employment opportunities created by beach tourism, contributing to the economic development of the local community.



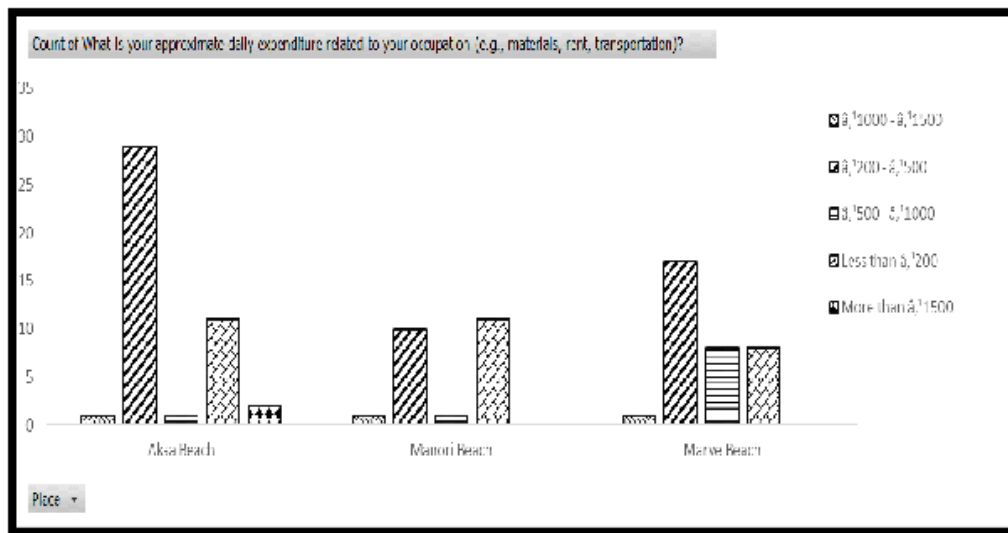
The bar chart shows how long individuals have been employed in tourism-related jobs at Aksha, Marve, and Manori beaches. It divides workers into categories based on their experience: less than 6 months, 6 months to 1 year, 1 to 5 years, and more than 5 years. Aksha Beach has the highest number of workers with over 5 years of experience, suggesting job stability, followed by a considerable number with 1 to 5 years of experience. Manori Beach displays a more balanced distribution, with a significant portion of workers having 1 to 5 years of experience, while fewer have been employed for less than a year. Similar to Aksha, Marve Beach has a large percentage of workers with more than 5 years of experience, indicating long-term job opportunities.



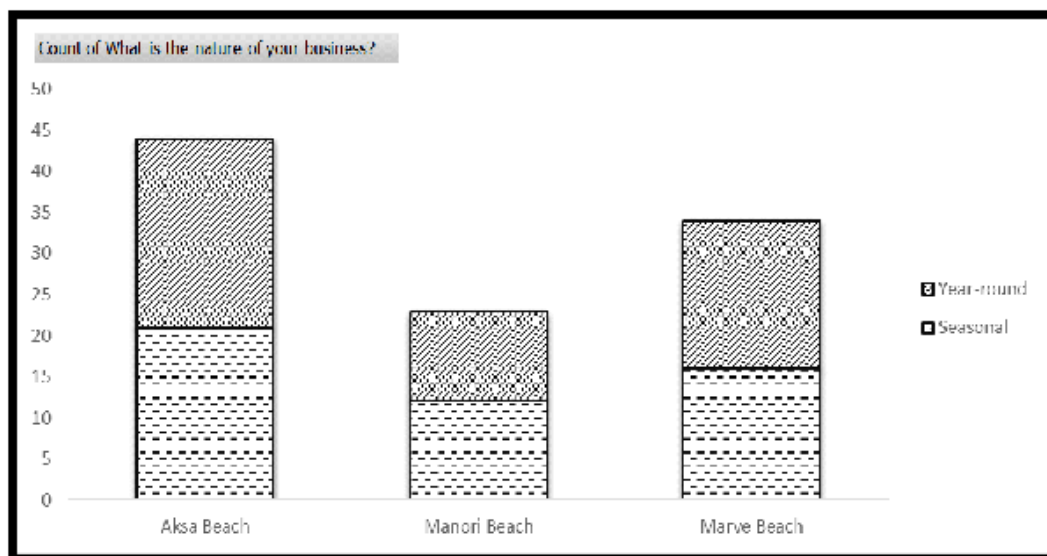
The bar chart represents the approximate daily income of individuals engaged in tourism-related occupations at Aksa, Marve, and Manori beaches. The income is categorized into five ranges: less than ₹1,500, ₹1,500–₹2,000, ₹2,000–₹3,000, ₹3,000+, and ₹1,000–₹2,000. At Aksa Beach, the highest number of workers earn more than ₹3,000 per day, followed by those in the ₹1,500–₹2,000 range, indicating a relatively stable income for many. Manori Beach shows a similar trend, with a significant proportion of workers earning above ₹3,000, though a notable number fall into lower income brackets. Marve Beach has the highest number of workers earning more than ₹3,000, suggesting better earning potential compared to the other two locations. However, across all three beaches, a small percentage of workers fall into the lowest income category, indicating that while tourism provides income opportunities, earnings vary significantly.



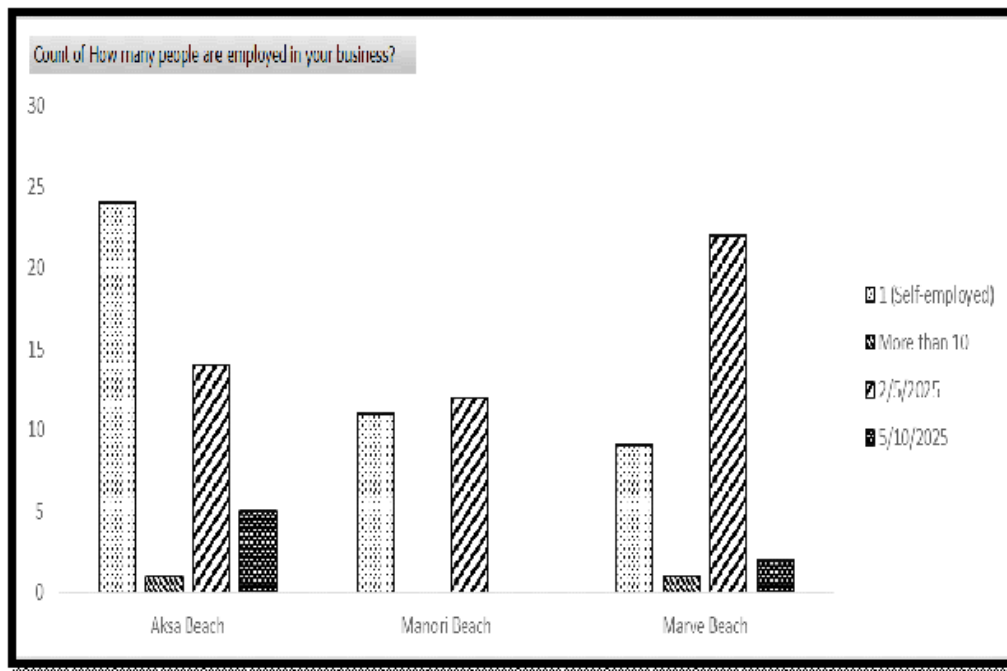
The bar chart shows how much people working in tourism jobs at Aksa, Marve, and Manori beaches rely on tourism for their income. The data is divided into three groups: completely dependent, partially dependent, and independent. At Aksa Beach, many workers are completely dependent on tourism, with a smaller number being partially dependent, which means tourism is a main source of income for them. Manori Beach has a more even mix of completely and partially dependent workers, suggesting that the workforce has different ways to earn money. At Marve Beach, the highest number of workers are completely dependent on tourism, just like at Aksa Beach, showing how important tourism is for jobs there.



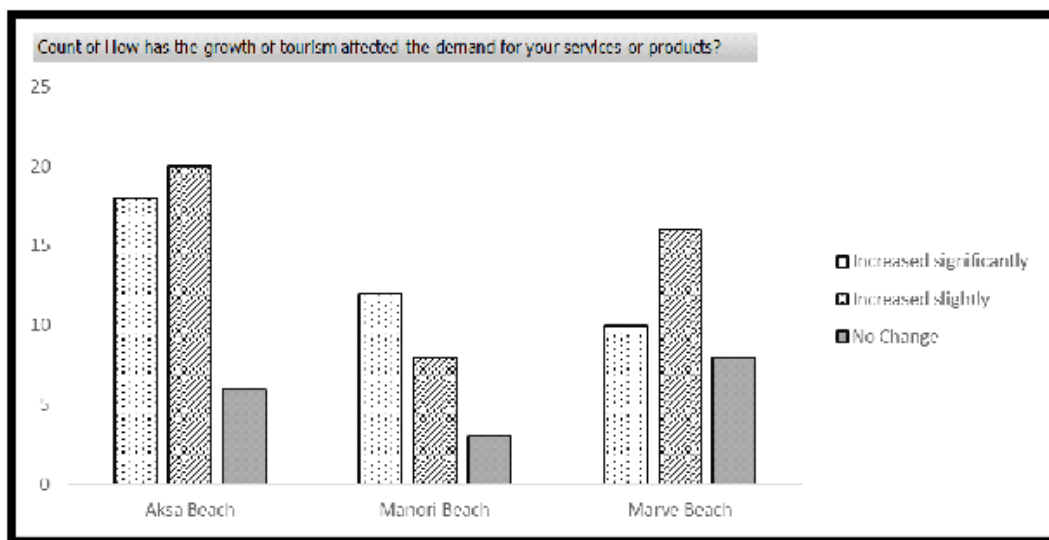
The graph represents how much people working at Aksa Beach, Manori Beach, and Marve Beach spend each day. At Aksa Beach, most workers spend between ₹1,000 and ₹1,250 daily, and this group has the highest number of individuals compared to the other beaches. Similarly, Marve Beach also has a lot of workers spending in the same range, indicating that many people there have similar spending habits. On the other hand, Manori Beach has a more balanced spread across the different spending categories. This means that workers at Manori Beach have a wider variety of spending habits compared to those at Aksa and Marve beaches. Interestingly, very few workers at any of the beach's report spending over ₹1,500 each day, which suggests that high spending is not common among them.



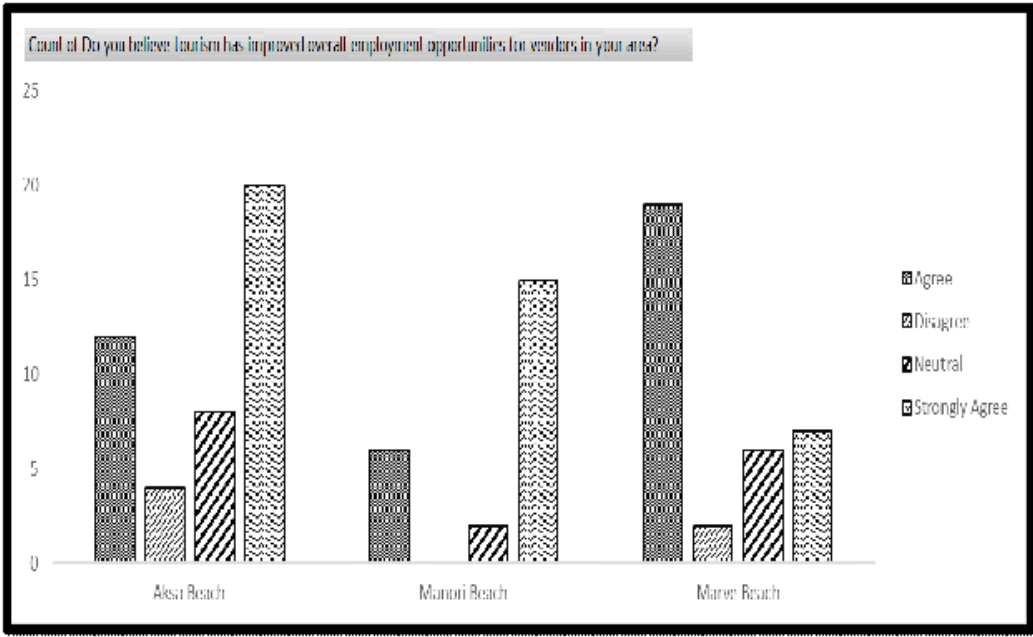
The figure represents the types of businesses at Aksa Beach, Manori Beach, and Marve Beach, showing a mix of seasonal and year-round operations. Aksa Beach primarily has seasonal businesses that operate during peak tourist times, such as holidays and summer, but it also features some year-round establishments that cater to local residents. This trend suggests a strong demand during tourist seasons, while the year-round businesses indicate a consistent need from locals or regular visitors. In contrast, Manori Beach has a nearly equal split between seasonal and year-round operations, highlighting both tourism and local support. Marve Beach shows a similar pattern to Aksa, with a larger share of seasonal businesses but also notable year-round ones that serve both tourists and locals. Overall, the presence of yearround businesses across these beaches contributes to a more stable local economy, less reliant on fluctuating tourist seasons.



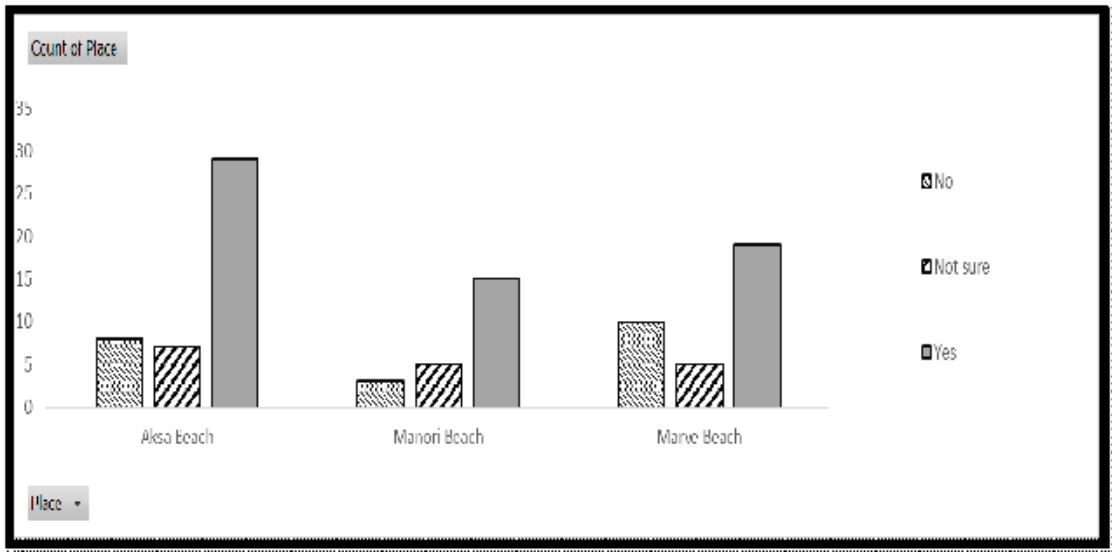
The figure shows a bar chart that displays how employment is distributed among businesses at Aksa Beach, Manori Beach, and Marve Beach. At Aksa Beach, most businesses are self-employed, with a smaller number having 2-5 employees, and very few employing more than 10 people. Manori Beach has a similar pattern, with most businesses being self-employed or small. However, Marve Beach is different, as it has more businesses that employ over 10 people, suggesting that there are larger establishments there compared to the other two beaches.



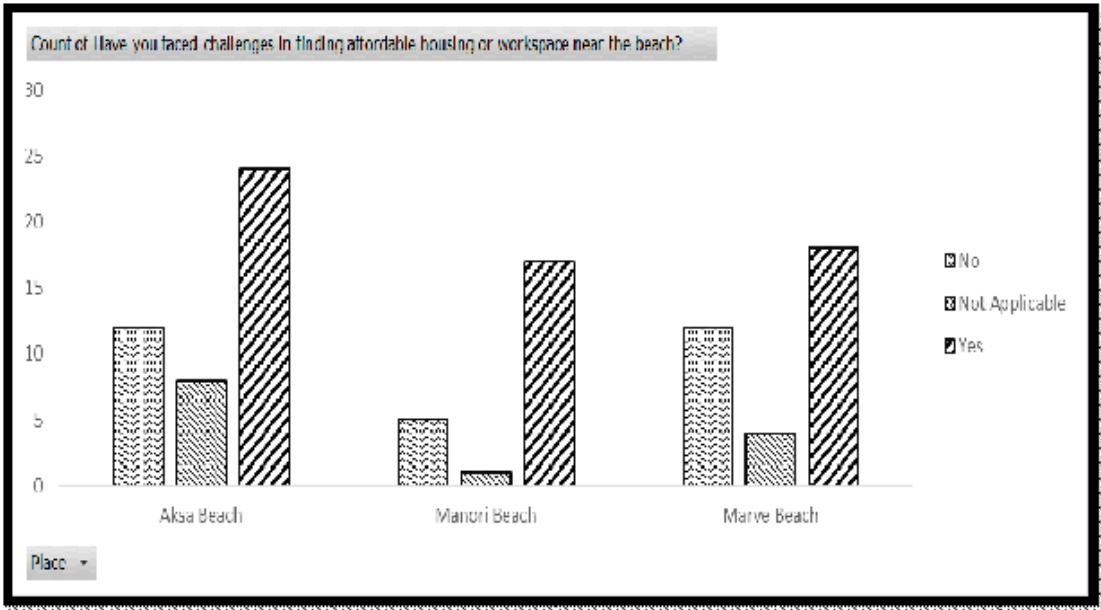
The figure shows how tourism growth has affected the demand for services and products at Aksa Beach, Manori Beach, and Marve Beach. At Aksa Beach, most people say that demand has gone up a lot, with a smaller group noticing a slight increase, and very few seeing no change. Manori Beach has a similar pattern, but fewer people report a big increase compared to Aksa Beach. At Marve Beach, demand has also increased a lot, but there are more businesses that say they only saw a slight increase or no change at all.



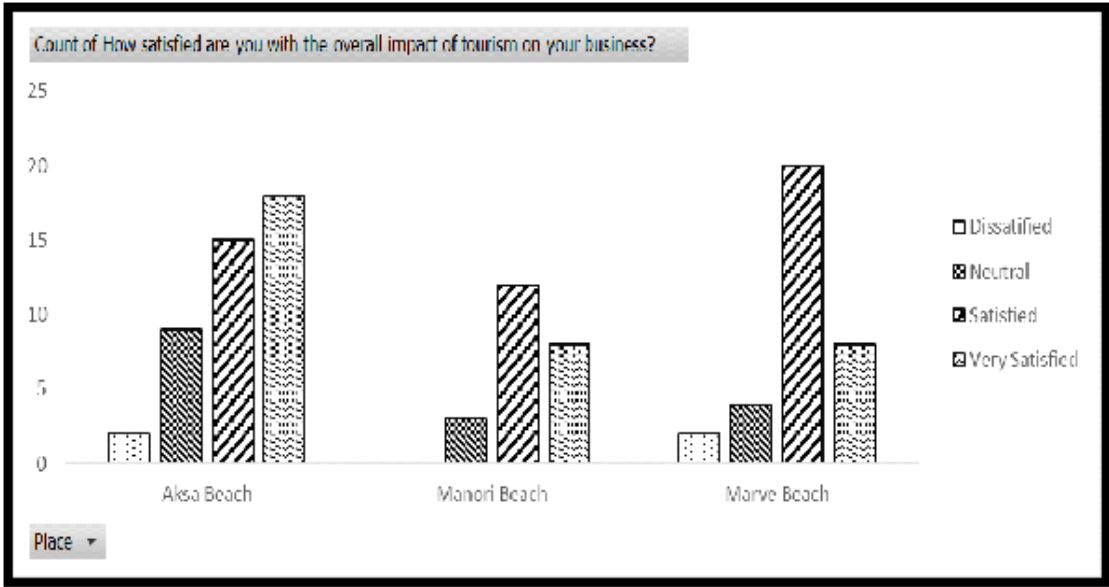
The figure shows a bar chart that looks at how vendors at three beaches—Aksa Beach, Manori Beach, and Marve Beach—view tourism and its effect on job opportunities. At Manori Beach and Marve Beach, a lot of people “Strongly Agree” that tourism has helped create more jobs, which means they see a big positive effect. In contrast, Aksa Beach has fewer people who “Strongly Agree” and more who feel “Neutral” or “Disagree.” This indicates that opinions about tourism’s impact on jobs are more mixed at Aksa Beach.



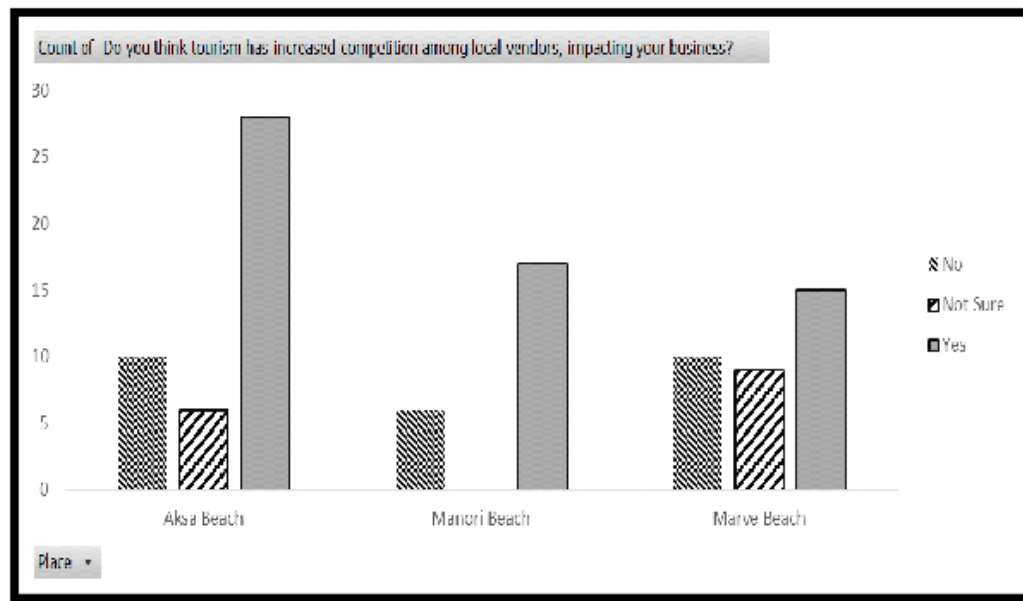
The graph shows the financial stability of local businesses at Aksa Beach, Manori Beach, and Marve Beach. It indicates that many respondents believe tourism affects their financial stability, with Aksa Beach having the highest number of “Yes” answers, followed by Marve Beach and Manori Beach. This suggests that tourism trends significantly impact businesses in these areas. However, a smaller percentage of respondents answered “No,” indicating that some businesses are financially stable regardless of tourism changes. Additionally, some responses were marked as “Not sure,” reflecting uncertainty or a lack of awareness about how tourism influences financial stability.



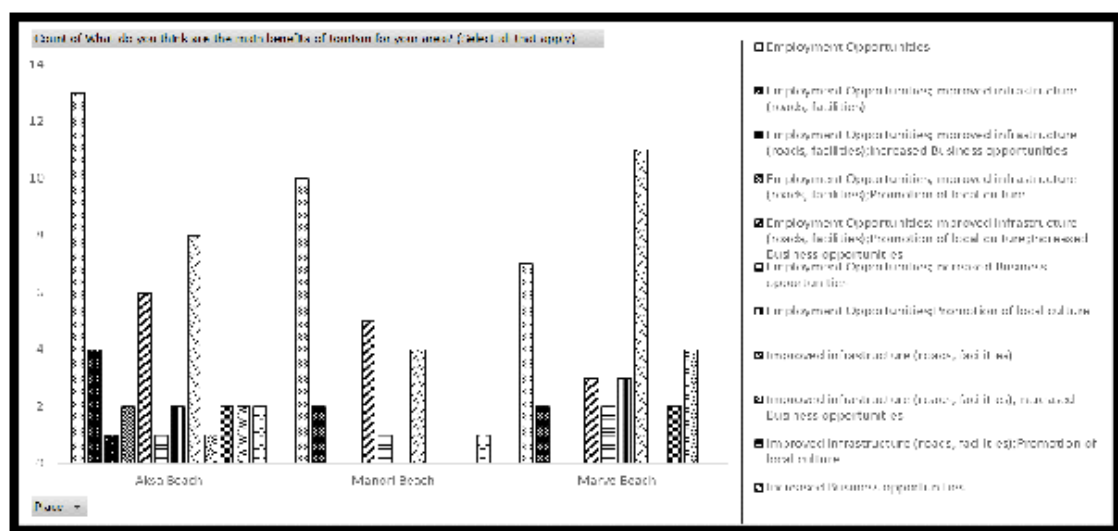
The given graph represents survey responses on the challenges faced in finding affordable housing or workspace near three beach locations—Aksa Beach, Manori Beach, and Marve Beach. The data indicates that a significant number of respondents at all three beach locations reported facing challenges in securing affordable housing or workspace, with Aksa Beach showing the highest number of "Yes" responses, followed by Marve Beach and Manori Beach. This suggests that high property costs or limited availability near these beaches pose difficulties for residents and businesses. On the other hand, a smaller portion of respondents answered "No," indicating that some individuals did not experience any challenges in finding affordable spaces. Additionally, a notable percentage of respondents selected "Not Applicable," which may suggest that they do not require housing or workspace near the beach or are not directly affected by this issue.



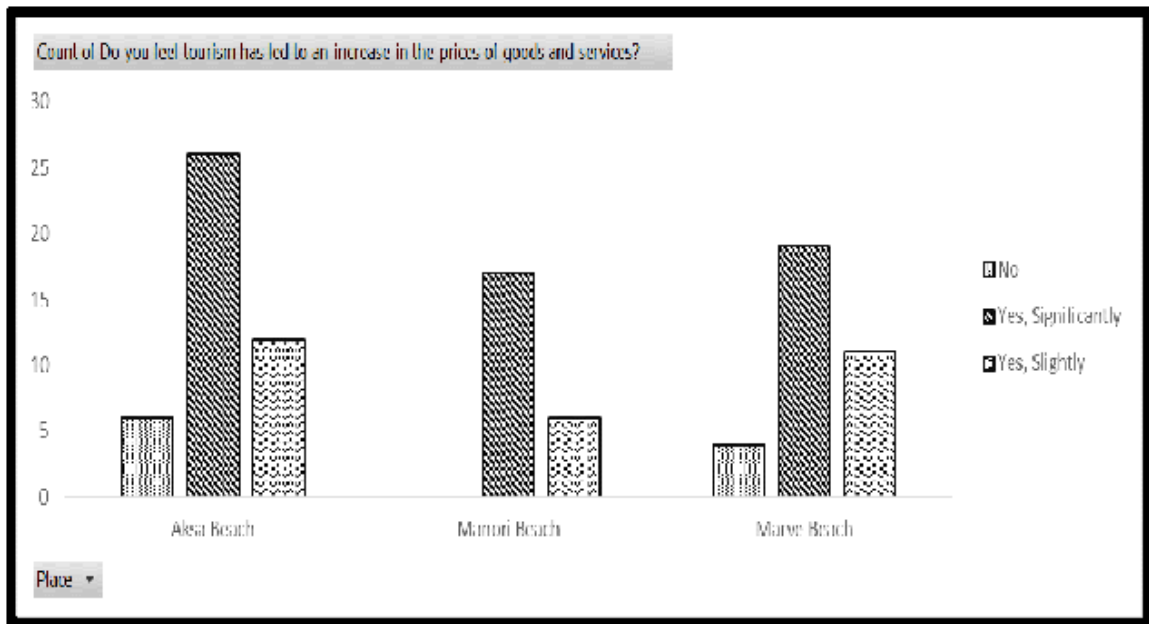
The graph shows how satisfied local businesses are with tourism at Aksa, Manori, and Marve beaches. Most business owners are either "Satisfied" or "Very Satisfied," meaning tourism has a positive effect. Marve Beach has the most "Satisfied" responses, while Aksa Beach has many in both "Satisfied" and "Very Satisfied" categories. Manori Beach also shows a positive trend but with slightly lower satisfaction. Some businesses chose "Dissatisfied" or "Neutral," which means there are challenges like seasonal changes, environmental issues, or business competition. One possible reason for lower satisfaction in some areas could be uneven tourist distribution, where some businesses benefit more than others. Additionally, high competition among local vendors might reduce individual profits despite increased tourism. Environmental concerns like pollution or overcrowding could also impact business operations and customer experiences. Seasonal fluctuations in tourist numbers may lead to inconsistent income for businesses, making long-term sustainability challenging.



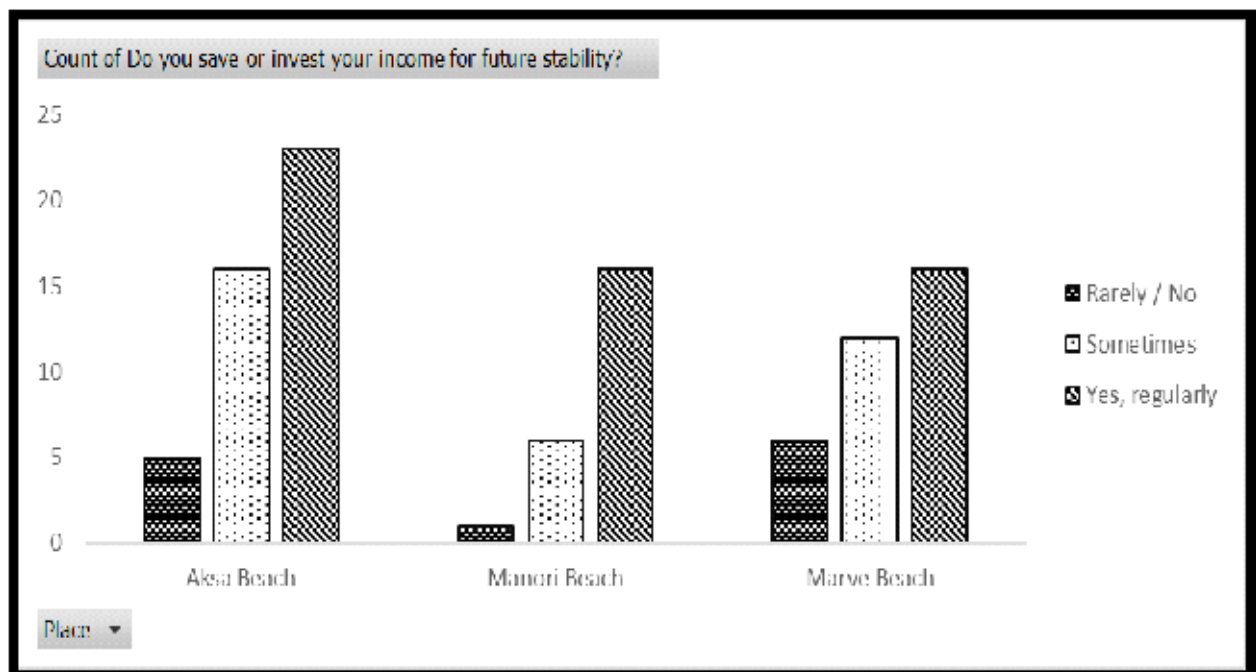
The graph represents local business owners' opinions on whether tourism has increased competition among vendors at Aksa, Manori, and Marve beaches. The responses are categorized into "Yes," "No," and "Not Sure." A significant number of respondents at Aksa and Marve beaches believe that tourism has indeed intensified competition, as indicated by the highest "Yes" responses in these areas. Manori Beach also shows a notable number of "Yes" responses, but it is relatively lower compared to Aksa and Marve. At the same time, some businesses at all three beaches are uncertain about tourism's impact on competition, while a smaller group believes it has not increased competition. This suggests that while tourism brings economic benefits, it also creates challenges for local vendors, possibly due to increased market saturation and pricing pressures. The findings highlight the need for balanced tourism policies that support both business growth and fair competition among vendors.



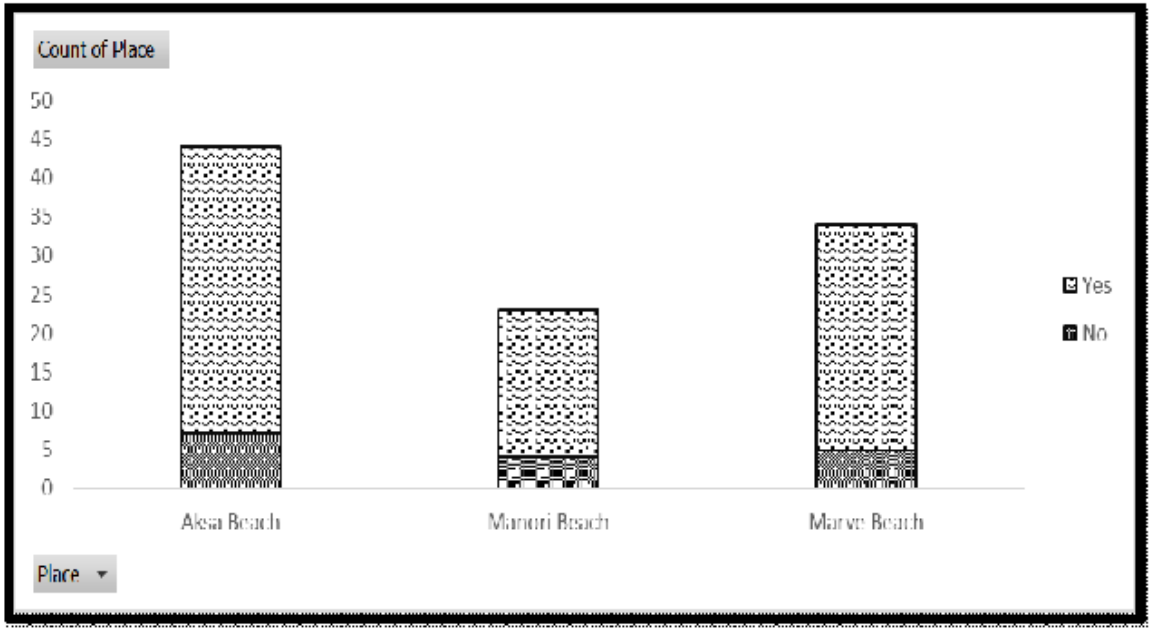
The given graph represent how tourism affects the local community in terms of economic and environmental impact, focusing on the key benefits. The bar chart shows the benefits of tourism in three areas: Aksa Beach, Manori Beach, and Marve Beach. These benefits include job opportunities, better infrastructure (like roads and facilities), business growth, cultural promotion, and more business chances. The chart shows that job opportunities and better infrastructure are the most commonly mentioned benefits across all three beaches. Marve Beach has the highest recognition of job benefits, while Manori Beach has a more balanced mix of benefits. Aksa Beach has a bit less recognition of these advantages, but still shows some benefits. The findings suggest that tourism helps the local economy by creating jobs and improving infrastructure, which helps businesses grow and supports local culture.



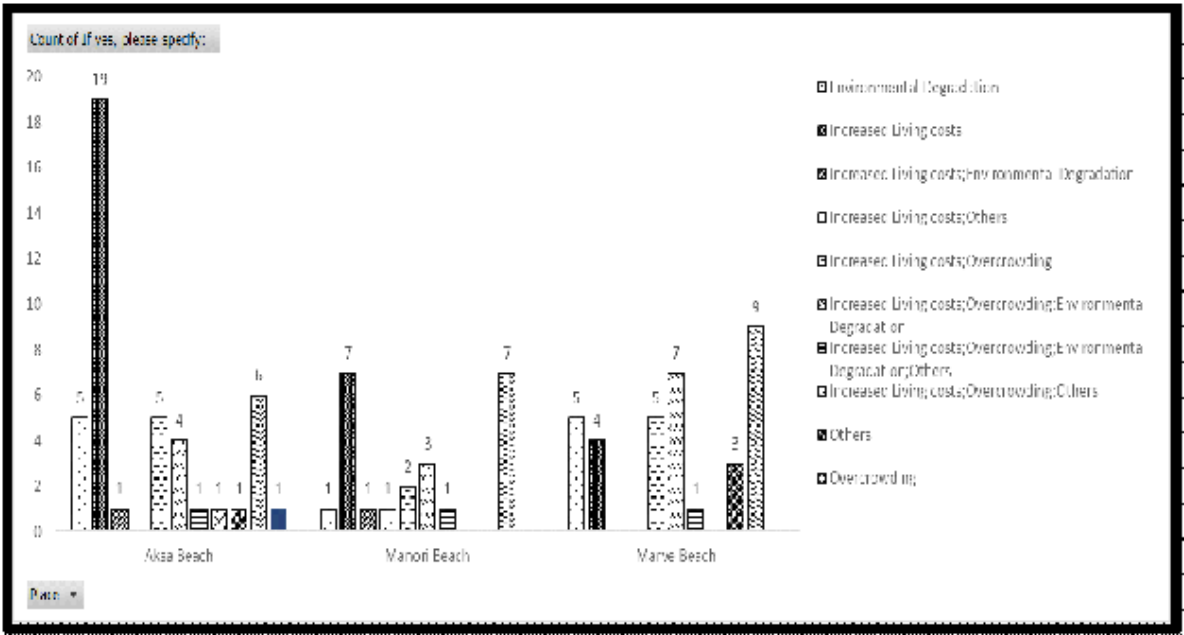
The graph in figure 3.3.19 represent the impact of tourism on the prices of goods and services at Aksa Beach, Manori Beach, and Marve Beach. The data indicates that a majority of people feel that tourism has led to a significant increase in prices, particularly at Aksa Beach, followed closely by Marve Beach. Manori Beach also experiences a rise in prices, but to a lesser extent than the other two locations. Some individuals believe that tourism has only caused a minor increase in prices, while very few think that prices have remained unchanged. This suggests that although tourism contributes to the economy, it also raises costs for local residents. Popular tourist destinations like Aksa and Marve Beach are more significantly impacted than Manori Beach. If prices continue to escalate, it could become challenging for locals to afford their everyday necessities. To prevent this, effective planning is essential to strike a balance between tourism growth and the cost of living for residents.



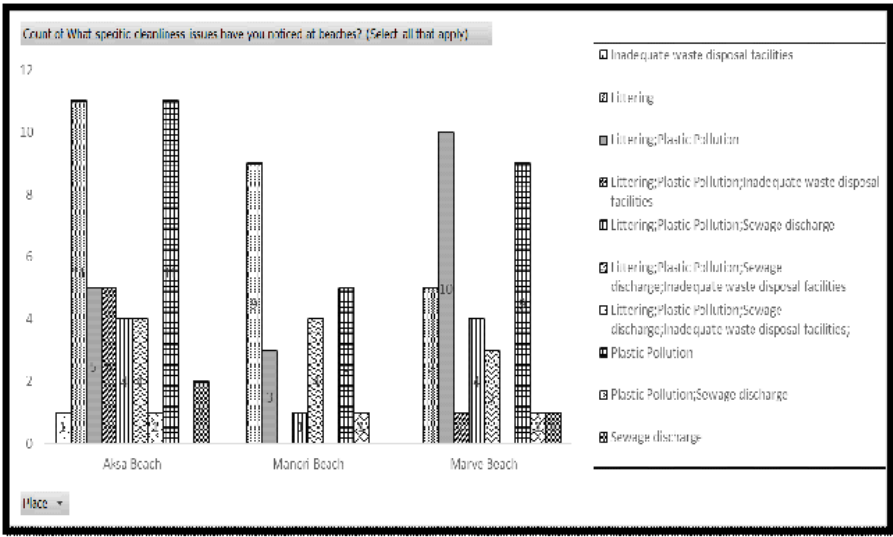
The graph shows how people at Aksa Beach, Manori Beach, and Marve Beach save and invest their money for the future. The data reveals that most people at all three beaches save or invest regularly, with Aksa Beach having the most regular savers, followed by Marve Beach and then Manori Beach. Many people also save sometimes, which means they understand the importance of being financially stable but may not do it all the time. However, a small number of people, especially in Manori Beach, rarely or never save. This could mean they are facing financial difficulties or might not know much about saving and investing.



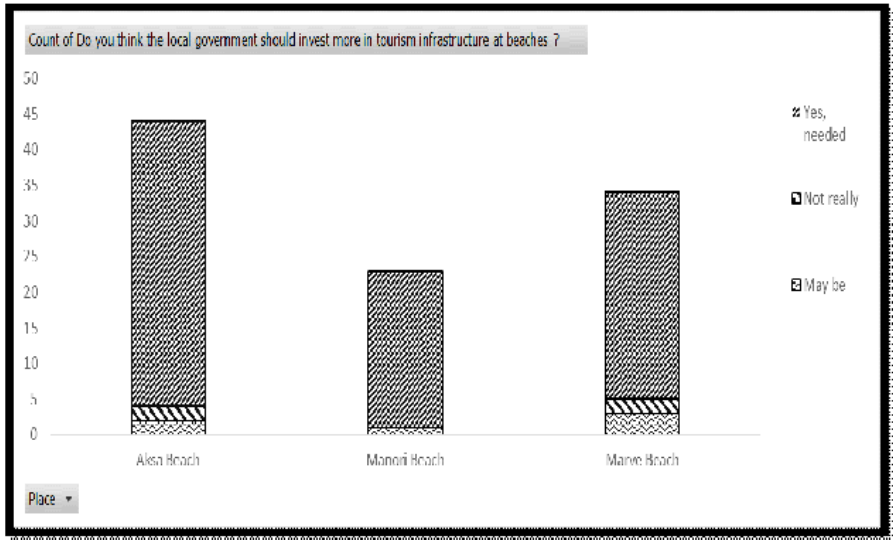
The graph represents public perception regarding tourism development at Aksa Beach, Manori Beach, and Marve Beach. The data shows that a majority of respondents at all three beaches support tourism development, with Aksa Beach having the highest approval rate, followed by Marve Beach and Manori Beach. This indicates that most people recognize the positive impacts of tourism, such as economic benefits, improved infrastructure, and employment opportunities. However, a small percentage of respondents at each beach do not support tourism development, possibly due to concerns about environmental degradation, increased cost of living, or cultural disturbances.



The bar graph shows the different causes of beach degradation at Aksa Beach, Manori Beach, and Marve Beach. The data reveals that the most significant cause varies for each beach, with Aksa Beach being most affected by one particular factor, possibly environmental degradation. Other factors, such as overcrowding, increased living costs, and environmental damage, contribute to the decline of these beaches, though at different levels. While Aksa Beach is most impacted by one cause, Manori Beach and Marve Beach show a more balanced spread of issues, indicating that no single factor is overwhelming these locations. The graph also highlights how overcrowding and environmental damage are linked, emphasizing the role of human activities in speeding up beach degradation.



The bar graph shows the different cleanliness problems at Aksa Beach, Marve Beach, and Manori Beach. The data shows that issues like industrial waste, littering, plastic pollution, and sewage discharge are common at all three beaches. Aksa Beach has the most cleanliness problems, especially with industrial waste and litter. Marve Beach faces major issues with plastic pollution and sewage, while Manori Beach, although a bit better, still deals with pollution-related problems. These cleanliness issues highlight how human activities, poor waste management, and sewage problems are major causes of pollution. The differences in pollution levels across these beaches suggest that some areas need more focused action.



The given bar graph represents public opinion on whether the local government should invest more in tourism infrastructure at Aksa Beach, Marve Beach, and Manori Beach. The majority of respondents across all three beaches believe that increased investment is necessary, with Aksa Beach showing the highest support for government intervention. Marve Beach also has a significant portion of respondents advocating for investment, while Manori Beach records the lowest number of people strongly supporting the need for infrastructure development. A small fraction of respondents at each beach expressed uncertainty, indicated by the “Maybe” category, while an even smaller percentage felt that investment was “Not really” necessary. The overall trend suggests that residents and visitors recognize the potential benefits of improving tourism infrastructure, likely to enhance beach facilities, cleanliness, and overall visitor experience.

RECOMMENDATIONS

- Supporting traditional practices, sustainable farming, and local crafts diversifies the economy while preserving cultural heritage. Government aid and training can further strengthen these industries for long-term resilience.
- Skill development programs and financial support empower women in tourism by creating income opportunities and reducing gender disparities.

- Providing microfinance opportunities enables local businesses to expand operations and maintain income during off-peak seasons.
- Better infrastructure enhances the visitor experience, boosts local business activity, and supports economic growth.
- Increasing garbage bins, improving waste collection, and launching awareness campaigns can significantly reduce littering and maintain clean beach environments.
- More lifeguards, CCTV cameras, and better lighting enhance beach safety, preventing accidents and crime while ensuring a secure environment for visitors and workers.
- Implement strict waste disposal regulations and promote eco-tourism initiatives like regular beach clean-up drives which helps to control beach degradation.
- Provide incentives for vendors using biodegradable packaging and sustainable tourism services.

HYPOTHESIS

H1: Tourism has a significant positive impact on the economic growth of local vendors by increasing income and job opportunities.

H1₀: Tourism does not have a significant impact on the economic growth of local vendors.

The value of Spearman's Rank correlation(r) is +0.23. The value of p at 95% confidence for 99 degrees of freedom is 0.02 which suggests that the value of r is greater than the p value. This implies that the null hypothesis is rejected with 95% confidence. This further implies that tourism has a significant positive impact on the economic growth of local vendors by increasing income and job opportunities.

H2: Tourism affects the financial stability of local businesses and creates challenges such as competition, rising costs, and environmental issues.

H2₀: Tourism does not significantly affect the financial stability of local businesses or create major challenges.

The value of Spearman's Rank correlation(r) is +0.39. The value of p at 95% confidence for 99 degrees of freedom is 0.01 which suggests that the value of r is greater than the p value. This implies that the null hypothesis is rejected with 95% confidence. This further implies that tourism affects the financial stability of local businesses and creates challenges such as competition, rising costs, and environmental issues

CONCLUSION

Tourism plays a crucial role in the economic development of Aksa, Marve, and Manori, contributing significantly to employment generation, business growth, and infrastructure development. The influx of visitors to these coastal areas stimulates various economic activities, including hospitality, transportation, retail, and recreational services. Small businesses such as food stalls, souvenir shops, homestays, and transport services thrive due to the steady demand from tourists. Additionally, tourism revenue supports local development projects, enhancing public services and amenities that benefit both residents and visitors. However, despite these economic benefits, the tourism sector in Aksa, Marve, and Manori faces multiple challenges that hinder its sustainable growth. One of the major concerns is the seasonal nature of tourism, where peak visitor influx occurs during holidays and specific seasons, leading to income fluctuations. Many businesses and workers depend entirely on tourism-related earnings, making them vulnerable to economic instability during off-seasons. The rising cost of living in these areas further exacerbates financial difficulties, as increased demand for goods, services, and real estate drives prices higher, affecting both residents and businesses. Additionally, growing competition among vendors creates an economic strain, as limited opportunities and market saturation lead to price undercutting and reduced profit margins.

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ADAPTING BRANDING STRATEGIES: A STUDY OF HOW GLOBAL BRANDS LOCALIZE FOR INDIAN CONSUMERS

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ABSTRACT

In today's globally connected world, culture strongly influences how consumers view and interact with brands. People from different countries hold different values, lifestyles, and preferences, which affect how they understand advertisements, trust a brand, and decide what to buy. Therefore, multinational companies (MNCs) must thoughtfully adjust their branding and marketing approaches to build genuine connections with local audiences.

This paper focuses on how global brands adapt their communication, design, and even product features to fit into specific cultural settings, especially in India. It explores how companies try to maintain a strong international identity while also creating a brand experience that feels personal and local. This careful balancing act between standardization and customization is at the heart of modern marketing strategies.

Using real examples—such as McDonald's adjusting its menu for Indian tastes, Coca-Cola using regional languages in advertisements, and Nike featuring Indian sports figures—this paper shows how understanding culture can build brand trust and loyalty. It also looks at what can go wrong when companies ignore culture, including the risks of misinterpretation and offense.

To help brands avoid cultural mistakes, the paper introduces tools like Hofstede's Cultural Dimensions, which help marketers analyse national values such as individualism, power distance, and uncertainty avoidance. It also highlights the growing role of cultural intelligence—being aware, respectful, and adaptable across cultures—which is essential for today's brand managers.

In conclusion, brand success across borders depends not only on product quality but also on cultural understanding. Companies that localize their branding with sensitivity are more likely to form long-lasting, meaningful relationships with global consumers.

INTRODUCTION

When businesses grow and enter new countries, they face many different cultures that affect how people see brands and what they expect from them. In such situations, a global brand must do more than just translate its ads into another language. It must communicate in a way that feels meaningful and respectful to the local culture.

This paper looks at how multinational companies (MNCs) change their branding strategies to connect with people in different countries while keeping their main brand identity the same. For example, a company like Coca-Cola or McDonald's is known all over the world, but it still needs to adjust how it advertises and presents itself in places like India, Japan, or Brazil.

Globalization has made it easier for companies to reach people in every part of the world. But it has also made cultural understanding more important than ever. A simple, one-style approach does not work anymore. What works in one country may not work in another. That's because culture affects how people behave, what they buy, and how they understand messages in ads.

This paper explains how MNCs try to find the right balance between having a strong global image and adapting to local cultures. It will talk about the strategies companies use, the challenges they face, and some best practices that help brands become successful in different countries.

We will also look at some theories (like Hofstede's cultural dimensions), real case studies (like how McDonald's or Nike changed their approach in India), and new trends in marketing. All of this will help us understand how culture-driven branding works and why it is so important in today's world.

Individualism vs. Collectivism

In some countries, like the United States, people value individual goals, personal success, and independent thinking. These are called individualistic cultures. In such places, people like messages that talk about being strong, unique, and achieving things on your own. For example, Nike's famous line "Just Do It" works well in these cultures because it encourages people to believe in themselves and act.

But in other countries, like India and Japan, people care more about family, teamwork, and staying connected to their community. These are called collectivist cultures. In these cultures, ads that focus only on one person's success may not work well. Instead, people like messages that show togetherness, family support, and helping others.

So, companies must change their advertising style depending on the culture. In collectivist countries, brands often show family scenes, group celebrations, or community activities to create a connection with the audience. This helps people feel that the brand understands and respects their values and way of life.

High-context vs. Low-context Communication

In high-context cultures, people understand each other through feelings, traditions, body language, and shared values. They don't always need to say everything directly. The message is often hidden in emotions, symbols, or the situation. Countries like India, Japan, and China are examples of high-context cultures.

In India, for example, many ads during festivals like Diwali or Eid don't talk much about the product. Instead, they show family bonding, emotions, and cultural traditions. These ads use music, colours, and traditions to make people feel connected. For example, an ad by Tanishq jewellery may focus on a daughter's wedding and show emotional family moments — the product (jewellery) is in the background, but the emotion is the real message.

In contrast, low-context cultures (like the U.S. or Germany) use clear, direct language. People in these cultures like ads that are simple and to the point — they want to know what the product is and why to buy it.

Some parts of urban India, especially in metros and among younger audiences, are slowly becoming lower context. For example, a Flipkart ad might simply show a discount offer and product benefits without too much storytelling or emotion. These ads work well when people are looking for quick and clear information.

So, in India, brands often mix both styles — using emotional, story-based ads for festivals or rural areas, and simple, direct ads for cities or online platforms.

In some cultures, people respect authority and hierarchy a lot — this means they look up to leaders, elders, or celebrities. These are called high power distance cultures. In countries like India or China, people often trust a product more if it is promoted by a well-known or respected person.

For example, in India, when a famous actor like Amitabh Bachchan or a cricketer like Virat Kohli promotes a product, people are more likely to buy it. Even if a doctor or a village elder supports a product, it can make a big difference. People feel that someone important is guiding them, so they trust the brand more.

On the other hand, in countries like Sweden or Denmark, which are low power distance cultures, people believe that everyone is equal. They don't give extra importance to someone just because they are rich or famous. In such places, people prefer ads that show everyday people using the product, not big stars or leaders.

So, brands need to choose their messengers carefully. In high power distance places like India, using famous or respected people works well. But in low power distance countries, it's better to use regular people to build trust.

CASE STUDIES TO EXPLAIN CULTURE-DRIVEN BRANDING

Case Study 1: McDonald's – India vs. United States

McDonald's is a strong example of how a global brand adapts to local culture. In India, where many people do not eat beef or pork due to religious beliefs, McDonald's completely changed its menu. They introduced local items like the McAloo Tikki and the Chicken Maharaja Mac, both inspired by Indian food preferences. Advertisements in India focus on affordability, family values, and group enjoyment, often aligning with festival celebrations. In contrast, in the United States, McDonald's emphasizes fast service, large portion sizes, and freedom of choice through features like "Create Your Taste" kiosks. The U.S. campaign highlights individual convenience and modern lifestyles.

Key takeaway: Successful branding must consider religious sensitivities, eating habits, and social values unique to each culture.

Case Study 2: Dove – Real Beauty Campaign Across Cultures

Dove's Real Beauty campaign shows how beauty ideals vary across cultures. In Western countries like the USA and UK, Dove used real women with different body types to promote body positivity and self-confidence, challenging traditional beauty stereotypes. In India and Brazil, the campaign included women with diverse skin tones and features. It also addressed deeper issues, such as colourism and cultural beauty expectations. The

Indian campaign used local languages and relatable stories to emotionally connect with the audience. Key takeaway: Beauty is defined differently in every culture; brands must respect local beauty standards while promoting universal values like self-worth.

Case Study 3: IKEA – Cultural Adaptation in China

When IKEA entered the Chinese market, it faced resistance due to its DIY furniture model and self-service system, which were unfamiliar to Chinese customers. Chinese homes are often smaller, and many families live with elders. IKEA responded by offering assembly services, designing space-saving furniture, and displaying rooms that showed multi-generational living arrangements. They also used popular local platforms like WeChat for marketing and sales.

Key takeaway: Understanding lifestyle, family structure, and shopping habits is critical for cultural fit and business success.

Case Study 4: Coca-Cola – Local Messaging with a Global Brand

Coca-Cola is known for maintaining a unified global identity, yet it adapts its ads for local cultures. During Ramadan in Muslim-majority countries, Coca-Cola runs emotional campaigns around gratitude, family dinners, and community sharing. In India, Coca-Cola's ads focus on festive joy, togetherness, and often feature Bollywood celebrities. In contrast, in Western countries, campaigns highlight individual happiness, friendship, and fun moments.

Key takeaway: Emotional themes like joy or connection are universal, but brands must adjust how they express them to fit local culture.

Case Study 5: Netflix – Local Content, Global Reach

Netflix has grown globally by producing shows that reflect local culture and languages. In India, Netflix released shows like *Sacred Games* and *Delhi Crime*, which reflect local issues, politics, and storytelling styles. These shows are available in many Indian languages to reach a wider audience. Similarly, in South Korea, *Squid Game* used Korean language and culture, yet became a worldwide hit. Netflix also adapts marketing and content recommendations for each country.

Key takeaway: People love stories they can relate to. Localizing content helps brands build trust and emotional connection in new markets.

Case Study 6: Nike – Region-Specific Empowerment

Nike keeps its global message of empowerment but customizes campaigns by region. In the Middle East, Nike launched the Pro Hijab, showing support for Muslim women athletes and respecting cultural norms. In India, Nike's "Da Da Ding" campaign celebrated female sports stars and encouraged girls to break gender roles. In China, Nike's messaging focuses on discipline, academic success, and family pride, which align with Chinese values. In contrast, Nike's Western ads often focus on self-expression, rebellion, and social justice, such as its campaign with Colin Kaepernick.

Key takeaway: Empowerment looks different in every culture; brands must speak the local language — emotionally and socially.

These case studies clearly show that culture-driven branding is not about changing the product, but about changing how the brand communicates, connects, and shows respect for the local audience. Companies that take the time to understand local values, language, symbols, and social behaviours are more likely to build trust, loyalty, and long-term success in global markets.

Culture-Driven Branding: The Invisible Hand behind Global Brand Success

In a world that's becoming increasingly connected, culture remains the unseen force that quietly shapes how people think, feel, and respond to brands. A company may have the best product in the world, but if it fails to understand the local culture, its message can fall flat—or worse, offend. Culture-driven branding isn't just about translating advertisements into different languages; it's about translating *emotions, values, and context*. Consider this: an ad campaign that wins awards in New York might be rejected in Mumbai if it doesn't align with local sentiments. Culture is that powerful—and that delicate.

Some of the most talked-about marketing blunders are proof of what can go wrong when culture is ignored. Take the example of Dolce & Gabbana in China. Their ad, which showed a Chinese woman clumsily trying to eat Italian food with chopsticks, sparked outrage and led to boycotts. Similarly, Pepsi's 2017 commercial with Kendall Jenner was meant to portray peace but ended up trivializing social justice movements, causing a wave

of backlash. These are not just missteps—they are lessons. They teach us that without cultural sensitivity, even global giants can stumble.

To avoid such pitfalls, marketers today rely on powerful tools and frameworks. Hofstede's Cultural Dimensions, for instance, helps brands understand how people in different countries view authority, individuality, risk, and long-term planning. In countries like India, where high power distance is common, ads featuring elders, spiritual leaders, or celebrities carry more weight. But in countries like Sweden, which value equality, people prefer peer-level messaging without a tone of superiority. Hall's Context Theory adds another layer, dividing cultures into high-context (like Japan or India) and low-context (like the USA or Germany). While high-context cultures value emotion, symbolism, and unspoken meanings, low-context cultures prefer direct, factual, and to-the-point communication. For example, a detergent ad in India might show a mother's love and care during festivals, while in Germany, it would focus on product performance and savings.

Another modern concept gaining popularity is Cultural Intelligence or CQ. It refers to how well an individual or organization can adapt to and work with people from different cultures. High CQ is about being open-minded, willing to learn, and respectful of differences—not imposing one's own cultural values. Smart global brands train their teams to develop CQ, making them more empathetic and adaptable across borders.

Today, culture-driven branding is evolving fast. Brands are using strategies like *glocalization*, where they maintain a global image but adapt their products and messaging locally—like McDonald's offering *aloo tikki* burgers in India. Hyperlocal marketing is becoming popular too, where brands talk in local dialects and use local festivals or influencers to connect with customers. Technology is helping as well: AI and big data allow marketers to customize messages for specific regions, even individual consumers. Involving customers in creating products or ads—called co-creation—is also rising, making people feel more emotionally invested in brands.

In conclusion, culture is not an obstacle in branding—it's a bridge. Brands that learn to walk this bridge with humility, curiosity, and care are the ones that win hearts across the globe. The future belongs to those who don't just speak the customer's language but understand their *stories, symbols, and soul*. Culture-driven branding, when done right, is not just smart business—it's a human connection.

CONCLUSION

Culture plays a big role in how people see, understand, and connect with brands. What works in one country might not work in another. That's why big companies need to understand the local culture before promoting their products. As we saw in examples like McDonald's in India, Dove in Brazil and India, Netflix with Indian and Korean content, and Nike's hijab campaign in the Middle East—brands that respect local values win people's trust.

On the other hand, when companies ignore culture, things can go wrong. Brands like Dolce & Gabbana and Pepsi faced backlash for not being sensitive to people's feelings and traditions. This shows why it's so important to do proper research and think from the customer's point of view.

Today, companies use tools like Hofstede's cultural dimensions and Hall's theory of communication styles to understand people better. New trends like "glocalization" (global + local), using local influencers, and even AI help brands create messages that really connect with people.

In simple words, culture-driven branding means not just selling a product—it means building a relationship. People support brands that understand them, respect their values, and speak their language. The more a brand connects with people's lives, the more successful it becomes around the world.

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ROLE OF INDIAN STARTUPS ON INDIAN ECONOMY

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ABSTRACT

Indian startups are in performance an increasingly noteworthy role in the international economy, driven by an energetic environment and an increasing number of unicorns. Startup pivots are encouraging this environment with the promotion of programs which provides development stage with opportunities to consider product attachment and readiness to new markets across the globe. Indian startups initiatives like Startup India have raised a culture of innovation and entrepreneurship, with startups tackling global encounters and gaining global acknowledgement. Indian startups their cost-effective, fresh and tech driven resolutions are attractive to markets out of the country. Furthermore, new technologists returning from the US to India are bringing operational knowledge of markets out of the country. It is thoughtful to assistance Indian startups with the right resources and connections to journey into the international market. India's journey toward becoming the world's leading startup ecosystem is driven by an arrangement of demographic, economic, and international policy elements. Consequently to promote the start-up culture in India and strengthen the Indian economy, the Government of India has commenced numerous procedures. Hence, in this paper is to present role and progress in the Indian startups in global economy.

Keywords: Indian economy; Technology; Challenges; Global market

INTRODUCTION

India has arisen as one of the greatest energetic startup environments internationally, grossing its place as the 3rd largest startup hub. Indian Prime Minister Narendra Modi launched the "Standup India" initiative in August 2015. Indian startups have been involved in creating jobs, in particular in the technology segment. Startups have been offer employment opportunities to skilled individuals and attract top talent. In addition, Indian startups have contributed considerably to reducing brain drain by providing exciting opportunities within the nation. Indian startups have emerged as a frightening force in the international economy, driving innovation, attracting significant investments, and fostering inclusive growth across various sectors. Indian startups growth has been fuelled by the increase of technology-driven startups, which have disrupted traditional industries and produced new markets in the county. The Indian startup bionetwork in India has seen a extraordinary transformation over the past decade, driven by a flowing together of factors that have reshaped the entrepreneurial countryside.

OBJECTIVES OF THE RESEARCH PAPER

The present study covers the following objectives:

1. To study role of Indian startups in Indian economy.
2. To study the various factors of growth of Indian startups in Indian economy.
3. To Progress in the Indian startups in Indian economy.

RESEARCH METHODOLOGY

The research paper is descriptive and investigative in natural world. The present research paper is mostly based on secondary data.

THEORETICAL LITERATURE REVIEW

The review of a number of significant earlier research studies on the present study is as mentioned under:

Kanodia Shourya (2024) stated that the role of startups in shaping India's economic landscape. It concluded that the Indian startups achieve this sustainable growth, certain bottlenecks such as regulatory barriers, access to finance, and market competition need to be resolved.

In this way, the start-up ecosystem of India will be able to assist in its economic growth and social development in the long term..

Bai B.Kasthuri (2017) in their research paper emphasized identifies the Indian start-ups how it contributes to the economy. The analysis revealed that government's new initiative for start-ups promises swift approvals for starting enterprises, easier exits, tax and fiscal incentives, faster registration of patents and protection of intellectual property rights.

Chaudhary and Sardana (2025) studied the startups, and Economic Growth of Indian Economy: A Case Study Approach. Present research paper emphasized on posits that the success of startups is intrinsically linked to their ability to innovate and adapt within a supportive framework, making them vital to the future of the Indian economy. It is raveled that the Policymakers must recognize the vital role of startups and implement frameworks that encourage innovation, provide access to funding, and simplify regulations.

Chauhan and Bansa (2023) in their research paper on startups are positively contributing to the growth of Indian economy by innovations and employment generation, increase in demand, decrease in imports, regional development, and increase in GDP etc. It is observed that Indian economy faces a lot of challenges in the field of technology, medicine, education, science, and different infrastructural and institutional areas. Startups are mainly technology-oriented companies that have the potential to explore the untapped sectors in the country. It concluded that the startups are contributing to the development of Indian economy and are solving the problem of unemployment. Government should give more incentives to promote startups in the economy.

IMPACT OF INDIAN STARTUPS ON ECONOMY

Indian startups are playing a major role in the nation's economic growth by driving innovation, creating jobs, attracting foreign investment, and promoting inclusivity. They are also contributing to gross domestic product growth and development a culture of entrepreneurship. India has become a major hub for startups, particularly in fintech, edtech, healthtech, and e-commerce, attracting significant foreign investment and reshaping the country's economic landscape. Following are the main impact of Indian startups on Indian economy.

- **Economic Growth and Job Creation:**

Indian startups are an important source of employment, mainly for India's large early life population. Startups are helping to reduce unemployment rates and contribute to a more dynamic employment market. Indian startups contribute to gross domestic product growth all the way through innovation, productivity gains, and by fostering ancillary companies.

- **Attracting Foreign Investment:**

Indian startups considerably impact the Indian economy by attracting foreign investment, fostering innovation, and **creating** jobs, which in turn contributes to economic growth and a stronger international image and development.

- **Increased Competition:**

Indian startups initiate rivalry into the market, leading to greater than before efficiency, innovation, and potentially lower prices for customers. This finely tuned competition benefits customers through a wider array of choices and potentially lower prices, while also approaching existing businesses to improve and innovate.

- **Innovation and Technological Advancement:**

Indian startups are addressing existing challenges and capitalizing on up-and-coming opportunities, Indian startups can drive economic growth, create meaningful impact, and solidify India's position as a international innovation powerhouse.

- **Global Recognition:**

Indian startups are more and more gaining worldwide recognition due to their innovative solutions and growing impact on different sectors. Factors like the Startup India initiative, a large and young labor force, and the increase of digital technologies have fueled this growth. A lot of Indian startups are gaining international recognition for their innovative solutions and products, showcasing India's potential as a international leader in technology and innovation.

- **Addressing Social Needs:**

Indian startups are all the time more in concert a very important role in addressing social needs, moving beyond traditional business models to focus on sustainable solutions and positive social impact.

- **Government Support and Initiatives:**

Indian startups have considerably benefited from and impacted government support and initiatives, particularly through the Startup India initiative. This program has fostered a thriving ecology by providing financial assistance, infrastructure development, and a supportive regulatory environment, leading to job creation and economic growth.

ROLE OF INDIAN STARTUPS

Indian startup-friendly policies in India do not always require large sums of currency. They do, however, need help from successful founders and strategic angels in all stages of development, such as corporate strategy,

community building, and connecting with skilled startups supporters. Following are the play role of Indian startups.

- ***Driving Innovation and Technological Advancements:***

Indian startups are playing forefront of adopting leading-edge technologies like AI, machine learning, and blockchain, emerging innovative products and services that cater to both domestic and international marketplaces.

- ***Generating Employment:***

Indian startups are playing an important role in generating employment, contributing to both direct and indirect job creation diagonally various segments. They are development innovation, pouring economic growth, and providing diverse employment opportunities, especially for young professionals. Indian startups have created a considerable number of jobs crossways various segments, including IT, healthcare, and professional services, expressively contributing to employment generation.

- ***Attracting Foreign Investment:***

India has developed as one of the greatest good-looking destinations for foreign direct investment in the world. Through its rising economy, vast consumer base, and rapid technological advancements, India offers numerous opportunities for foreign investors looking to tap into the prospective of Indian startups.

- ***Improving GDP Growth:***

Indian startups have perceived extraordinary growth in current years, with the country developing as the third-largest ecosystem for ventures internationally. The Indian government has been active in supporting aspiring entrepreneurs through various initiatives including the startup India scheme.

- ***Fostering Entrepreneurship and Changing Mindsets:***

The "Startup India" initiative has played a vital role in altering social insights of entrepreneurship, encouraging a new generation to pursue business ventures and driving innovation.

- ***Addressing Social Challenges:***

The Indian start-up bionetwork has observed important growth in recent years, fueled by entrepreneurial spirit, innovation, and supportive government policies. Moreover, there is a increasing focus on sustainability and social impact-driven start-ups that aim to address pressing societal and environmental issues. Several Indian startups are attentive on solving serious social issues in areas like healthcare, education, and agriculture, improving the quality of life for millions of people, particularly in rural areas.

- ***Expanding into International Markets:***

Today, Indian startups are violently expanding internationally, targeting to access international markets, attract foreign investment and benefit from satisfactory regulatory contexts for growth and innovation. Obtainable of the flourishing startup community in India that boasts 113 unicorns, a significant yet selective portion has taken the leap into international markets.

- ***Promoting Inclusivity:***

Several Indian startups, mainly in rural areas, are addressing serious challenges in sectors like healthcare, education, and agriculture. By generating social enterprises, these startups enhance the quality of life for millions, promoting inclusive development across the nation.

- ***Development Innovation Ecosystem:***

A dynamic Indian startups ecosystem drives economic growth, provides employment opportunities, fosters innovation, and contributes to a country's GDP. Ambitious entrepreneurs must leverage available resources, use government support and attend seminars and workshops to find networking opportunities and associate with manufacturing leaders

- ***Supporting Sustainability:***

As India races in the direction of a further sustainable future, a quiet but powerful association is taking shape not in government corridors, but in the energetic ecosystem of Indian startups. Starting sparkling mobility to zero-waste fashion, young ventures are reimagining industries with an eye on sustainability, climate resilience, and social equity.

FACTORS CONTRIBUTE TO THE GROWTH OF INDIAN STARTUPS

Several factors contribute to the growth of Indian startups in the worldwide economy. These include a great national market, young and skilled employees, growing digital adoption, and a supportive government. Following are the main factors contribute to the growth of Indian Startups.

- **Large and Growing Domestic Market:**

A great and growing domestic market is without a doubt a important driver for the growth of Indian startups. India's enormous population, increasing middle class, increasing throwaway income, and growing internet penetration create a vast and diverse consumer base for startups to tap into.

- **Young and Skilled Workforce:**

A young and skilled labor force is a key in driver for the development of Indian startups. India's huge population, particularly its youth, provides a vast pool of prospective entrepreneurs and employees.

- **Digital Infrastructure:**

Digital infrastructure in India, together with platforms like Aadhaar, UPI, and DigiLocker, appreciably contributes to the development of Indian startups by providing a base for improvement and rapid scaling.

- **Government Support:**

The Indian government has launched a variety of initiatives like "Startup India" to provide financial assistance, tax exemptions, and regulatory support to startups, fostering a more contributing to environment for development.

- **Venture Capital and Funding:**

The Indian startup ecosystem has extended quite quickly mainly through private investments including seed, angel, venture capital, and private equity funds, with technical support from incubators, accelerators, and the government. Improved venture capital and private equity investments have fueled the increase of Indian startups, providing them with the necessary capital for expansion and innovation.

- **Incubators and Accelerators:**

The existence of Incubators and accelerators play a important role in fostering the growth of Indian startups by providing early-stage startups, essential support, resources, mentorship and networking opportunities. They assist revolve innovative ideas into doing well businesses by offering guidance, networking opportunities, and access to funding.

- **Evolving Consumer Behavior:**

Growing consumer behavior, preferences and a rising demand is a significant channel for the growth of Indian startups. Shifting consumer preferences, improved digital adoption, and rising disposable incomes are creating new opportunities for businesses to provide to a more difficult and demanding consumer base.

- **Technological Advancements:**

The adoption of technologies like AI, machine learning, and blockchain technological advancements are a chief channel for the growth of Indian startups. The adoption of technologies has enabled startups to build up innovative products and services, enhancing their competitiveness in the international market.

- **Collaborative Ecosystem:**

A collaborative ecosystem is vital for the enlargement of Indian startups, providing them with necessary resources, networking opportunities, and mentorship. This ecosystem includes a variety of stakeholders like incubators, accelerators, investors, and government initiatives, all working in concert to foster innovation and drive the success of Indian startups.

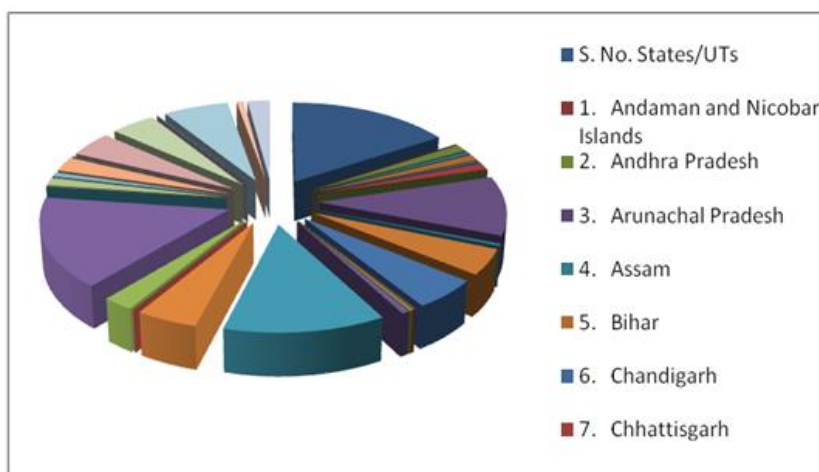
PROGRESS IN THE INDIAN STARTUPS

Up to 2024, the Indian startup network established rigidity and growth, despite international economic challenges. The year adage an important surge in new fund launches, with over \$8.7 billion raised across 81 new funds, a 55.36% increase from 2023. India's tech startup system has quickly evolved into one of the world's major and most dynamic, driving both innovation and economic growth. In excess of the past a small amount of years, we have witnessed outstanding progress within this ecosystem, in terms of increasing startups formations, deepening technology capabilities, growing Indian investor confidence, and expanding sectoral diversification. Following table -1 show that State -wise number of recognized Indian startups during the 2019-2023.

Table:-1 State/UT-wise number of recognised Indian startups during the 2019- 2023

S. No.	States/UTs	2019	2020	2021	2022	2023
1.	Andaman and Nicobar Islands	7	5	13	9	15
2.	Andhra Pradesh	161	215	286	382	586
3.	Arunachal Pradesh	2	-	4	9	17
4.	Assam	62	108	181	282	362
5.	Bihar	137	236	374	517	811
6.	Chandigarh	37	52	63	81	126
7.	Chhattisgarh	152	143	159	233	360
8.	Dadra and Nagar Haveli and Daman and Diu	3	5	12	12	11
9.	Delhi	1,302	1,711	2,129	2,548	3,150
10.	Goa	39	60	78	104	98
11.	Gujarat	565	846	1,655	2,262	3,291
12.	Haryana	658	787	1,036	1,327	1,740
13.	Himachal Pradesh	27	40	55	117	144
14.	Jammu and Kashmir	30	57	123	167	247
15.	Jharkhand	79	153	180	232	337
16.	Karnataka	1,566	1,648	2,082	2,546	3,032
17.	Kerala	597	671	901	1,070	1,294
18.	Ladakh	-	1	-	4	4
19.	Lakshadweep	-	1	-	-	2
20.	Madhya Pradesh	302	401	540	891	1,264
21.	Maharashtra	1,987	2,531	3,552	4,763	5,801
22.	Manipur	3	10	33	31	26
23.	Meghalaya	5	-	6	10	18
24.	Mizoram	-	1	2	6	13
25.	Nagaland	2	5	6	7	22
26.	Odisha	170	257	367	442	620
27.	Puducherry	10	13	16	29	43
28.	Punjab	86	134	239	294	443
29.	Rajasthan	321	459	591	986	1,443
30.	Sikkim	2	1	3	2	2
31.	Tamil Nadu	556	715	1,067	1,791	2,810
32.	Telangana	559	754	928	1,370	1,757
33.	Tripura	7	17	11	25	23
34.	Uttar Pradesh	807	1,290	1,876	2,554	3,426
35.	Uttarakhand	87	109	155	236	271
36.	West Bengal	276	362	648	991	1,170
	Grand Total	10,604	13,798	19,371	26,330	34,779

(Source-<https://www.pib.gov.in/> Union Minister of State for Commerce and Industry)



Above diagram shows that the Government with an intent to build a strong network for nurturing innovation, startups and encouraging investments in startup ecosystem of the country launched the Startup India initiative on 16th January 2016. According to Union Minister of State for Commerce and Industry Indian government have sustained efforts by the led to an enlarge in the number of recognized startups to 1,17,254 as on 31st December 2023. In the year 2023 recognized startups in every State and Union Territory (UT) spread across over 80% of the districts across the country. Total overall startups grew from 10,604 in 2019 to 34,779 in 2023—a 228% jump over five years. In case of average annual growth rate (Compound Annual Growth Rate, CAGR) for the country is about 25% per year. Concentration persists in Maharashtra, Karnataka and Delhi, but their share of the pie is slowly but surely shrinking as other states accelerate faster. While metros (Mumbai, Bengaluru, Delhi, Chennai, Ahmedabad) remain dominant, non metro and smaller states together contributed over 40% of the 2023 total—up from about 30% in 2019.

CONCLUSION

Indian startups connect in recreation a very important role in the nation's economic development by dynamic innovation, creating jobs, and boosting gross domestic product. They make a payment to economic growth by introducing new products and services, fostering competition, and addressing local and societal challenges. However, Indian startups maintain sustain and increase speed this momentum, it is necessary to address regulatory hurdles, foster deeper collaboration between academia and industry, and ensure equitable right of entry to funding and infrastructure. Through integrating education, entrepreneurship, and employment, Indian startups can unlock its entrepreneurial potential and move closer to becoming a developed country by 2047.

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WAITING TIME BEHIND THE SCENES: FIXED SERVICE SURRENDER TIME FOR THE FIRST CUSTOMER

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ABSTRACT

Service Surrender Facility of a normal queueing model is where a service at a particular queueing system can be submitted back after utilization or because it is of no use due to sometimes. When such a facility is available, it may be claimed by consumers initially deprived of it due to its unavailability. This may give rise to Secondary Queues which comprise of all such service takers.

This paper deals with the study of such a Service Surrender Facility in which the first customer has to wait for at least c units of time in the secondary queue before receiving the service.

Key Words: Queue, Service Surrender Facility, Secondary Queues, Service Holding Time, Survival Function, Hazard Rate.

Area of Research: Statistics, Operations Research

1: CONCEPT OF SERVICE SURRENDER FACILITY AND A SECONDARY QUEUE

The classical literature of queueing analysis studied only commonly observed primary queues. The results of the various queueing models depend on the input and the output distributions.

It has been observed in several situations that the customers not only have to wait in a primary queue but they also have to wait in the secondary queue. The analysis of both these queues will be different.

Secondary queues come into picture only when the system has a characteristic of 'SERVICE SURRENDER FACILITY'.

Sometimes, the service availed by the customers is returned by one or more customers due to dissatisfaction (e.g., misfit of the size), lack of requirement (e.g., railway or bus tickets) or at times may be because the availed service does not get exhausted even after utilization (e.g., library books). In such situations the SERVICE is said to be SURRENDERED. The availability of the service with the server is limited, and there will be a lot of demand for this surrendered services.

This paper mainly concentrates on the study of this secondary queue, which has not been carried out so far in the queueing literature but was first explained by Kane Neela in 2001 as follows:

At a service counter with finite (say N) number of services available, after serving N customers, service will not be available for the subsequent customers. Instead when the $(N+1)^{\text{th}}$ customer arrives, the customer can now register his name in a 'waiting list'. These customers will be served as and when any of the previously served customer, surrenders the service. Here the waiting list will be another queue.

The time span for which the customer utilizes a service is a random variable.

Also, the customers on 'waiting list' do not know the amount of their waiting time or even whether they will get the service at all. Hence, a customer may register on 'waiting list' or quit the system.

SERVICE-SURRENDER FACILITY IS NOT AVAILABLE IN FOLLOWING SITUATIONS

- 1) A patient taking service from a doctor
- 2) A customer being served by a barber
- 3) Food ordered from and consumed in a restaurant

SERVICE-SURRENDER FACILITY IS AVAILABLE IN FOLLOWING SITUATIONS:

- 1) A customer possessing a railway reservation
- 2) A customer possessing a locker in the bank
- 3) Books borrowed from the library
- 4) Use of escalators / elevators / any public transport facility

1.1: PRIMARY QUEUE

A Primary Queue is the waiting line of the units at a service counter before the customers are registered on the 'waiting list'.

1.2 : SECONDARY QUEUE

A Secondary Queue is the waiting line of the customers, which are registered on the 'waiting list'.

- A customer can join the secondary queue only if after waiting through the primary queue.
- Secondary queue-analysis is an analysis of the 'waiting time' of the customers.
- The customers of the secondary queue may have already waited for some time in the primary queue to find that the service is not available.
- These customers may get the service as and when the previously served customers surrender their services and this second phase of waiting time is unpredictable.

1.3: SERVICE HOLDING TIME (SHT)

Service Holding Time is the average duration of time for which a customer holds the service, before surrendering.

Though continuous, for the sake of analytical convenience SHT can be considered as a discrete random variable as described by (Neela Kane, 2004) in the following manner.

Let $p = P(\text{a customer enjoys the service for a unit time})$.

$P(\text{a customer surrenders the service sometime during the unit time}) = (1-p) P(\text{a customer completes 't' units of time, before he surrenders the service})$

$= P(T = t) = p^{t-1} (1-p) \quad ; t = 1, 2, \dots$ which is a Geometric distribution.

But 'p' will differ from customer to customer randomly, and can assume any value in the range [0, 1], it will also be a random variable.

The appropriate distribution of p is generally considered as Beta distribution with parameters

'a' and 'b' which is given by

$$f(p) = \frac{1}{\beta(a,b)} p^{a-1} (1-p)^{b-1} \quad ; a, b > 0; 0 < p < 1$$

$$= 0; \text{ otherwise}$$

Now T is distributed as Geometric and p is distributed as Beta. Thus, according to (Bartholomew, A multistage renewal process, 1963), SHT(T) will follow a compound Geometric Beta Distribution given by

$$P(T=t) = \frac{\beta(a+t-1, b+1)}{\beta(a,b)} \quad ; t = 1, 2, \dots \text{ and } a, b > 0$$

$$= 0; \text{ otherwise}$$

1.4: AVERAGE WAITING TIME OF A CUSTOMER IN THE SECONDARY QUEUE

The average duration of utilizing the service by a customer is given by the expectation of t

$$E(t) = \sum_{t=1}^{\infty} t f_t = \frac{a+b-1}{b-1} \quad ; \text{ where } b \neq 1, b > a$$

1.5: THE DISTRIBUTION FUNCTION OF T

The Distribution function of T is given by

$$F_T = \sum_{t=1}^T f_t = 1 - \frac{(a+b+T)}{b} f_{(T+1)}$$

1.6 : SURVIVAL FUNCTION

Let $T > 0$, have a density f_t and distribution function F_T . The survival function G_T is given by

$$G_T = \begin{cases} 1 - F_T & \text{if } t \text{ is continuous} \\ 1 - F_{T-1} & \text{if } t \text{ is discrete} \end{cases}$$

Hence, for the above model,

$$G_T = \frac{(a+T-1+b)}{b} \times f_{(T)}$$

1.7 : HAZARD RATE / SERVICE WASTAGE

The Hazard Rate /Service Wastage S_T is given by

$P\{\text{surrendering the service in } (t, t+dt) / \text{it was not surrendered till time } T\}$

$$\therefore \text{Service Wastage } (S_T) = \frac{f_T}{G_T} \text{ where } G_T \text{ is the}$$

$$\therefore S_T = \frac{b}{(a+T-1+b)}$$

Service Wastage indicates the rate of surrender of the service.

Higher the value of service wastage S_T , higher is the Service Surrender Rate.

1.8: CONCLUSION

Graphs plotted for service wastage S_T against service holding time T for various values of a and b show that, for smaller values of parameter a , service wastage increases rapidly up to a time point nearer to the mean duration and gradually stabilizes for some time which can be explained as: the sharp decrease in service surrender may be due to various environmental and psychological factors and the sudden increase with elapse of large amount of time may be due to death of the customers, better availability of competitive facilities, etc.

2: MODEL WHERE THE FIRST CUSTOMER HAS TO WAIT FOR AT LEAST c UNITS OF TIME IN THE SECONDARY QUEUE BEFORE RECEIVING THE SERVICE

The model discussed in section 1 deals with the Service Holding Time (SHT), which is the average time for which the service is utilized, before surrendering.

The time for which the first customer has to wait for at least c units of time in the secondary queue before receiving the service may be the time for the server to freshen up or the time required to make the service ready for the customers in the secondary queue. The best examples of this situation are the waiting time for the customers before the flight boarding begins or the waiting time of the audience before a movie theatre entry begins.

Let X : Number of units of waiting time $\sim$ Geometric(p) $P(X = x) = p^{x-1}(1-p)$; $X = 1, 2, 3 \dots$

$= 0$; otherwise

The distribution of the number of units of waiting time will now be

$$P(X=x) = p^{x-1}(1-p)/p^{c-1}; X = c, c+1, c+2 \dots\dots$$

$= 0$; otherwise which is a Truncated Geometric Distribution Therefore, the entire system is governed by Compound Truncated Geometric Beta Distribution.

Let T : Service Holding Time

$T \sim$ Compound Truncated Geometric Beta Distribution

$$P(T=t) = f_t = \int_0^1 f(p) \frac{p^{t-1}(1-p)}{p^{c-1}} dp$$

$$= \frac{b(a+t-c-1)^{(t-c)}}{(a+b+t-c)^{(t-c+1)}} \quad ; t = c, c+1, c+2, \dots \quad ; a, b > 0$$

$$= 0 \quad ; t < c$$

2.1: SERVICE HOLDING TIME (SHT)

$$P(T=t) = f_t = \frac{b(a+t-c-1)^{(t-c)}}{(a+b+t-c)^{(t-c+1)}}$$

2.2: EXPECTATION OF t

$$E(t) = \sum_{t=c}^{\infty} t f_t = \frac{c(b-1) + a}{(b-1)} \quad ; b \neq 1$$

The Expected Service Holding Time is independent of the time elapsed.

2.3: DISTRIBUTION FUNCTION OF T

$$F_T = \sum_{t=c}^T f_t = 1 - \frac{(a+T-c+b+1)}{b} \times f_{(T+1)}$$

2.4: SURVIVAL FUNCTION

Let $T > 0$, have a density f_t and distribution function F_T . The survival function G_T is given by

$$G_T = \begin{cases} 1 - F_T & ; \text{if } t \text{ is continuous} \\ 1 - F_{T-1} & ; \text{if } t \text{ is discrete} \end{cases}$$

Hence, for the above model,

$$G_T = \frac{(a+T-c+b)}{b} \times f_{(T)}$$

2.5: HAZARD RATE / SERVICE WASTAGE

The Hazard Rate / Service Wastage

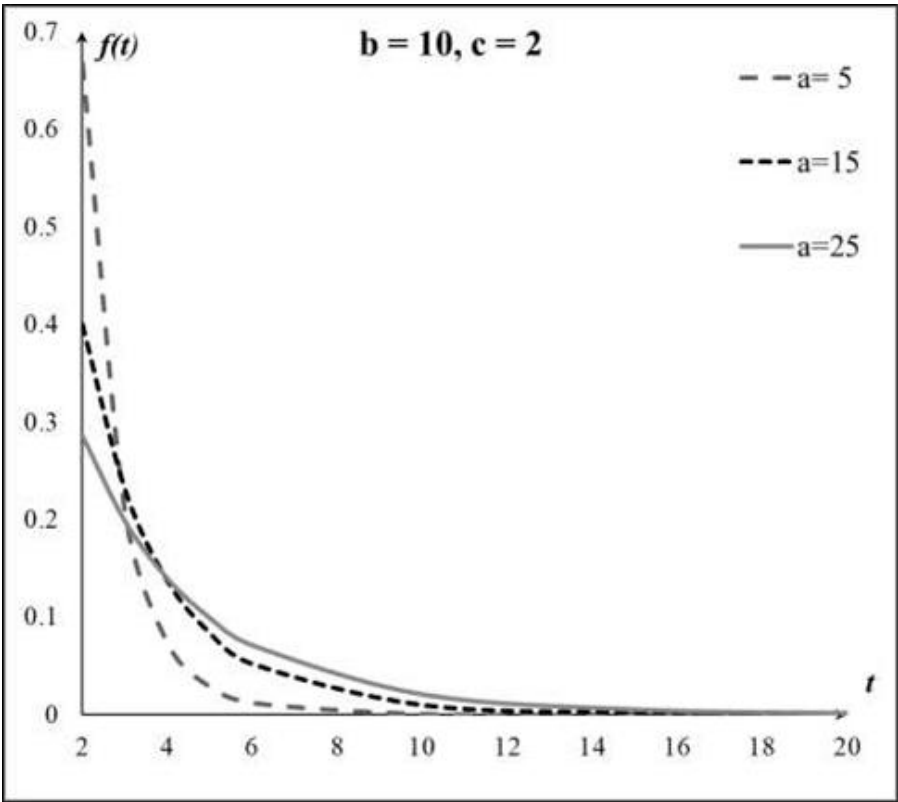
$ST = P\{\text{surrendering the service in } (t, t+dt) / \text{it was not surrendered till time } T\}$

$$\therefore \text{Service Wastage } (S_T) = \frac{f_T}{G_T} = \frac{b}{(a+T-c+b)}$$

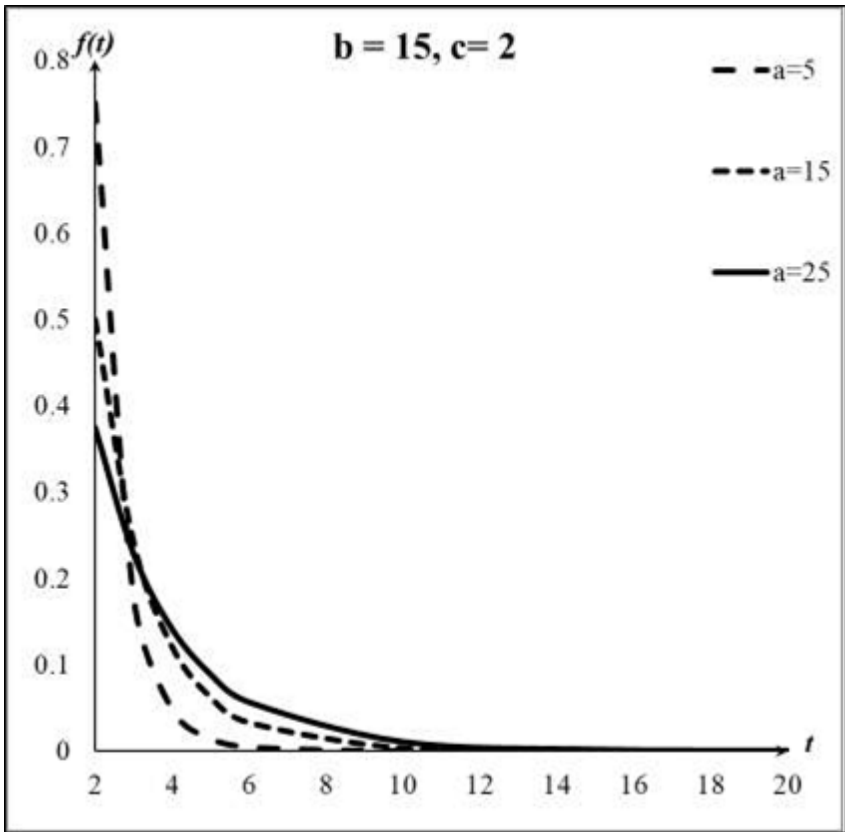
Higher the value of service wastage ST , higher is the Service Surrender Rate.

2.6 GRAPHS OF PROBABILITY DISTRIBUTION OF SERVICE HOLDING TIME

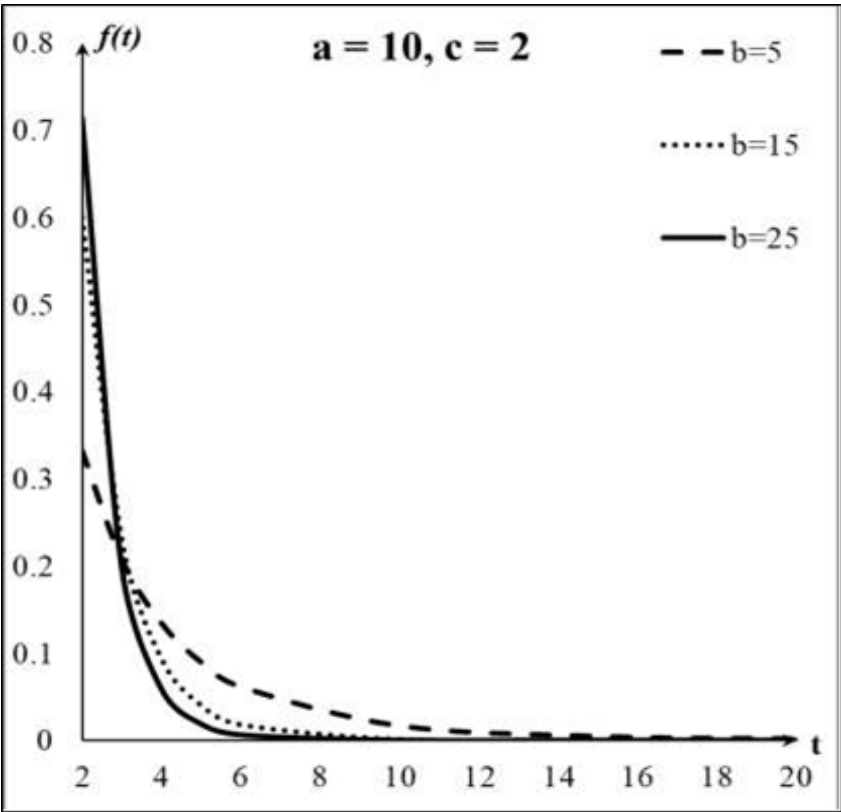
Graph 1



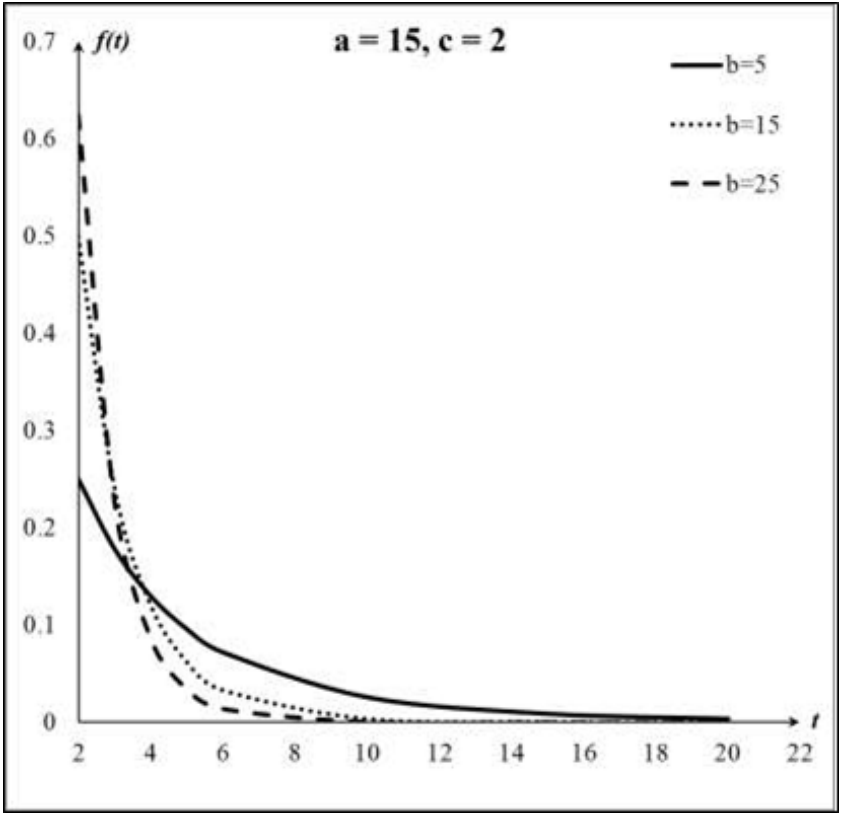
Graph 2



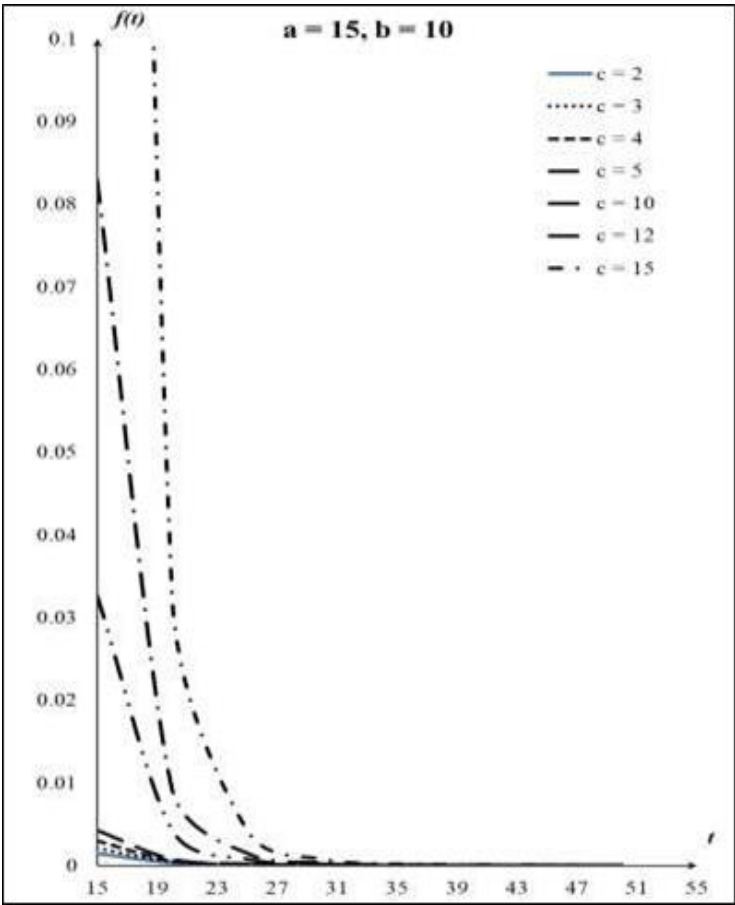
Graph 3



Graph 4



Graph 5

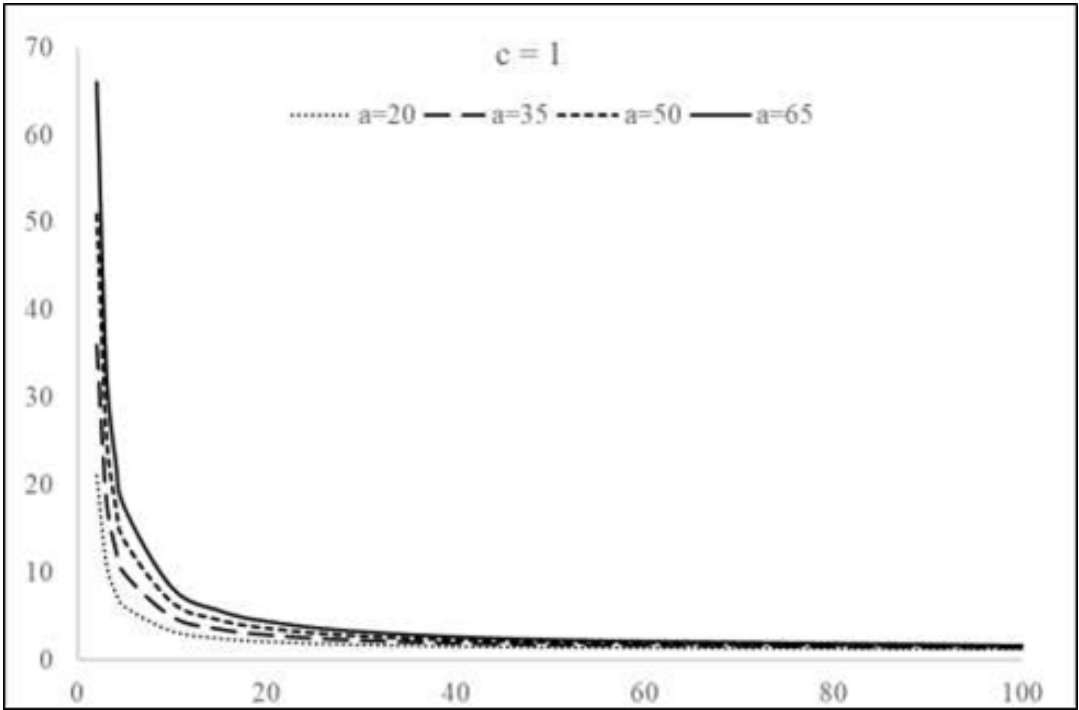


Graphs 1 and 2 show that for smaller values of a , the probability decreases rapidly as t increases whereas graphs 3 and 4 show that for higher values of b , the probability decreases rapidly as t increases.

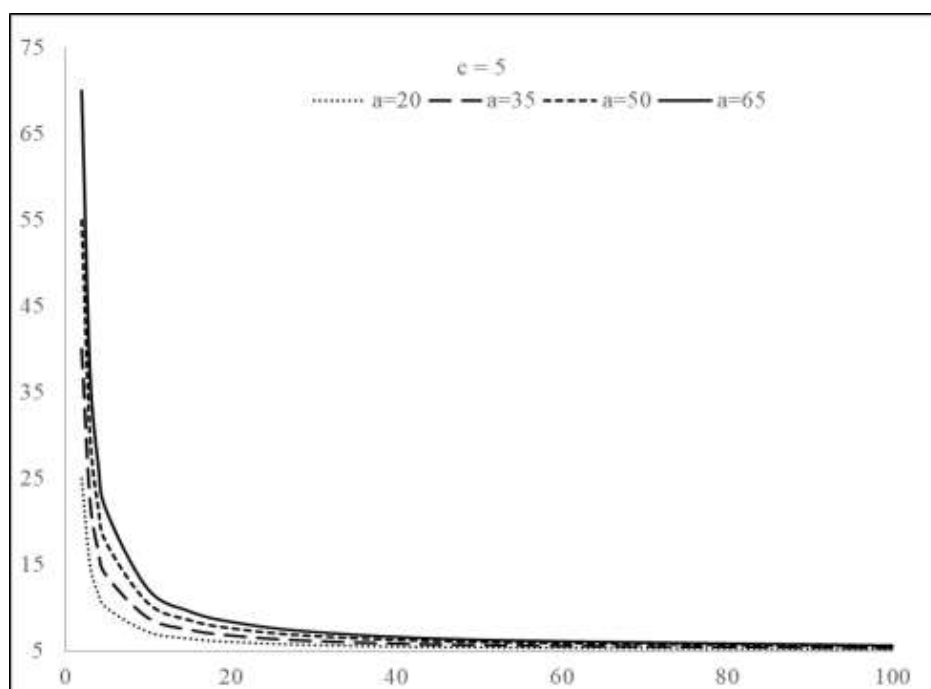
Graph 5 shows that when a and b are fixed, the probability decreases rapidly for higher values of c as t increases.

2.7 GRAPHS OF EXPECTED TIME

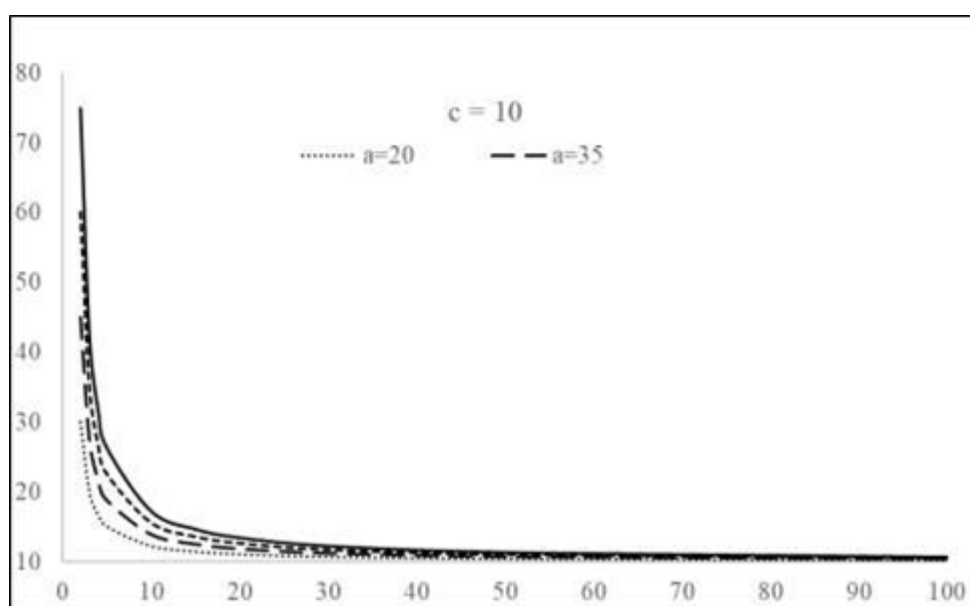
Graph 6



Graph 7



Graph 8



2.8: CONCLUSION

Graphs 6, 7 and 8 show that for various combinations of values of a , b and c , the Expected Service Holding Time becomes negligible with increase in values of a , b and c .

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AWARENESS AND IMPACT OF THE GLOBAL CHIP WAR ON INDIA'S ECONOMIC AND STRATEGIC POSITION

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¹ashritashetty2005@gmail.com and ²manvirvishwakarma7@gmail.com**ABSTRACT**

The global chip war has emerged as a critical geopolitical and economic challenge, driven by competition over semiconductor technology—an essential component of modern digital and defence systems. As global supply chains remain heavily dependent on a few East Asian nations, disruptions and tensions have underscored the need for self-reliance. India, despite being a major consumer of semiconductors, relies almost entirely on imports for advanced chips. In response, it has launched initiatives like the Semicon India Programme and formed strategic partnerships to strengthen its domestic ecosystem. This study explores the level of awareness among Indian stakeholders—students, professionals, and the general public—regarding the chip war and evaluates its perceived impact on India's economy and national security. Findings highlight a growing interest but uneven understanding across sectors, pointing to the urgent need for awareness, talent development, and ecosystem readiness to position India as a key player in the global semiconductor landscape.

Keywords: *Global chip war, Semiconductors, India's semiconductor policy, Supply chain resilience, Strategic autonomy, Technological sovereignty, Semicon India Programme Geopolitics of technology, public awareness, National security*

INTRODUCTION

The global chip war has emerged as one of the most intense geopolitical and economic contests of the 21st century, with semiconductors at the heart of modern life and national power. These tiny chips are the foundation of virtually all digital technologies—smartphones, data centres, 5G networks, quantum computing, autonomous vehicles, advanced defence systems (PMT). It is also a crucial component of Information and Communication Technology (ICT), Medicare, sustainable energy, weaponry, Internet of Things (IoT), Artificial Intelligence (AI) and even Chat GPT [it is reported that Open AI's Chat GPT, underwent training amongst the top 10,000 sophisticated Central Processing Units (CPUs) now existing] (Air Power Journal,2024). The COVID-19 pandemic highlighted the critical importance of semiconductor technology when disruptions in supply chains led to massive production delays in industries such as electronics, automotive, defence, and healthcare. (Forbes, 2024)

In the past especially during the cold war period, India has experienced denial of critical technology, in case of nuclear technology and cryogenic engines. Hence, critical technology is always associated with a great geopolitical game. The new chip technology could also go one step ahead because of its dual use, and by selective access and denial strategy it can enhance the ability of the adversaries. During the Cold War period when the U.S. interests were not favourable to India's interests, it provided F-16 jets to Pakistan, denoting use of technology that can be leveraged for geopolitical gains. In this context, semiconductors represent a new arena of strategic control. Selective access to chips, or denial of the same, can enhance or constrain a nation's capabilities, placing India at risk unless it builds domestic capacity. (Cenjows,2024)

The existing global semiconductor supply chain suffers from highly centralised production concentrated in East Asia, making it fragile. This centralisation, when combined with the crucial nature of the product, becomes risky. The pandemic showed how localised disruptions—be it disease outbreaks, political instability, or natural disasters—can paralyse global production and ripple across industries worldwide. The Russia–Ukraine conflict further exposed vulnerabilities by disrupting rare gas supplies critical for chip fabrication (CSIS, 2022). This geopolitical struggle is complicated by the fact that over 90% of the world's most advanced chips are manufactured by just two firms—Taiwan's TSMC and South Korea's Samsung—concentrated in a highly volatile region (SIA, 2023). For example, even a temporary halt in Taiwanese or South Korean chip factories can derail production timelines for carmakers or electronics manufacturers in distant regions.

In response, major powers such as the U.S., China, the European Union, and Japan have launched multi-billion-dollar national programs to localize semiconductor production and secure technological leadership (SIA, 2023).

The urgency around semiconductors has intensified due to growing U.S.–China tensions. The United States, long dominant in chip design and intellectual property, is determined to limit China's technological rise in this sector.

The rationale is strategic: data is the new oil, and semiconductors are the tools used to control, protect, and process that data. Advanced chips have dual-use potential—not only powering civilian innovations but also enabling military technologies like missiles, drones, and satellite systems. Therefore, the U.S. has imposed export restrictions on high-end chips and manufacturing equipment, aiming to prevent China from achieving parity in defence, surveillance, and AI capabilities (Time, 2023). The Chinese initiated retaliation by banning the export of germanium and gallium and stopped sales of these materials outside their borders which are necessary for producing semiconductors. (Cenjows, 2024)

The U.S. CHIPS and Science Act has allocated over \$52 billion to encourage domestic chip manufacturing, while the European Union's European Chips Act aims to double Europe's chip production by 2030. Japan, South Korea, and even smaller nations like Vietnam have also rolled out incentive schemes to become active players in this global realignment (SIA, 2023). The semiconductor race is no longer just about economics—it is about strategic autonomy, supply chain security, and future dominance in emerging technologies.

India's achievements in indigenisation of defence are widely cherished, but the electronic components of missile technology and other advanced defence technologies—like logical circuits, integrated circuits, sensors—are based on imported semiconductor chips. (Cenjows, 2024). Recognizing this vulnerability, the Indian government launched the Semicon India Program in 2021, with a financial outlay of ₹76,000 crore (approximately \$10 billion). The program aims to encourage global semiconductor companies to set up manufacturing and design facilities in India. Major players like Vedanta-Foxconn and Micron Technology have responded to this policy push, announcing multi-billion-dollar investments in Gujarat for chip fabrication and assembly facilities. The government is also offering up to 50% capital support for approved projects and is collaborating with countries like Japan and the U.S. to strengthen its semiconductor ecosystem (Press Information Bureau, 2022).

However, while India's policy framework and foreign investment traction are encouraging, the real test lies in ecosystem readiness and stakeholder awareness. A semiconductor ecosystem is complex—it requires not just funding and infrastructure but also a deep talent pool, reliable utilities, research institutions, and supply chain integration. This research seeks to explore precisely that: how aware are Indian stakeholders of the global chip war, and what is their perception of India's response and preparedness? Preliminary data collected through an online survey of 101 respondents, covering students, professionals, and general citizens, suggest that awareness levels are uneven. While students and tech professionals show relatively higher understanding, those in non-tech sectors or from Tier-2 and Tier-3 cities are often unaware of the opportunities and risks involved. This gap is critical because public understanding and industry participation will ultimately determine the long-term sustainability of India's semiconductor ambition.

LITERATURE REVIEW

Semiconductors have evolved from being seen as just economic commodities to becoming central elements in national security strategies. As Bown (2021) points out, export restrictions and trade controls have made semiconductor access a critical geopolitical tool, especially in the context of the growing technological rivalry between the United States and China. The situation is further complicated by the global production pattern, where over 90% of the world's most advanced chips are manufactured by just two firms—Taiwan's TSMC and South Korea's Samsung—concentrated in a highly volatile region (SIA, 2023). This high concentration creates significant risk: any geopolitical tension or disruption in this region can severely affect global chip supplies. While manufacturing has become an Asian strength, high-end design and innovation largely remain with the United States and selected European nations, creating a clear divide within the global supply chain (Breznitz & Murphree, 2011).

The raw materials required in semiconductors include silicon, germanium, phosphorus, boron, indium phosphide and gallium. In 2022, the Chinese produced roughly 60 per cent of global germanium and 80 per cent of gallium. As raw materials, the electronics-semiconductor ecosystem requires certain Rare Earth Elements (REEs) such as lanthanum, cerium, neodymium, samarium, europium, terbium, and dysprosium. China accounts for 60 per cent of the world's REEs extraction and 87 per cent of their production (Air Power Journal, 2024).

Turning to India, scholarly research indicates that awareness of semiconductor geopolitics is gradually building but remains uneven. While large technology firms and policymakers are increasingly aware of supply chain vulnerabilities, smaller players such as start-ups, MSMEs, and even some large non-tech manufacturing firms often lack this understanding (Techcircle, 2024). This awareness gap could hinder timely adoption of risk-reduction measures like supplier diversification and investment in domestic design capacity. (Economic Times, 2025) argue that India's current semiconductor policy discussions are heavily tilted toward financial incentives

and subsidies, often overlooking equally important areas such as workforce development and ecosystem preparedness. Without widespread understanding of how semiconductors relate to national security and economic autonomy, India may fall behind other countries that are actively nurturing local ecosystems and supply chain partnerships. Financial support alone is insufficient—public awareness campaigns, industry-academia linkages, and targeted research hubs are essential for sustainable and competitive semiconductor development. (AIM, 2024)

In response to its overwhelming dependence on imported semiconductors, the Indian government launched the Semicon India Programme in December 2021. This ₹76,000 crore (roughly \$10 billion USD) initiative aims to support every segment of the semiconductor value chain—from chip design to fabrication, testing, and packaging (Press Information Bureau, 2022). As part of this policy, up to 50% fiscal support is being provided for setting up semiconductor fabs, while design-linked incentives are offered to start-ups and research units. The policy has already attracted major global players. Vedanta-Foxconn signed a memorandum of understanding for a \$19.5 billion chip and display unit in Gujarat (Vedanta, 2022). Similarly, Micron Technology has announced a \$2.75 billion assembly and test facility in the same state, with financial backing from both the central and state governments (Micron, 2023). Additionally, companies like Applied Materials and Lam Research have committed substantial investments to boost India's semiconductor equipment ecosystem and support training initiatives.

However, several significant challenges persist. India's semiconductor industry is expected to require more than 85,000 highly trained professionals by 2030, but the current education and training infrastructure falls far short of this target (NASSCOM 2022). In response, the government has partnered with industry leaders like Lam Research to establish specialized training programs (Press Information Bureau, 2023). Moreover, while major tech hubs like Bengaluru, Hyderabad, and Noida have begun engaging with policy and industry, awareness and involvement remain extremely limited in Tier-2 and Tier-3 cities, where numerous MSMEs operate (Goled S, 2024). This lack of awareness prevents local industries from effectively integrating into global chip supply chains or capitalizing on government incentives.

India has also taken diplomatic steps to secure its position in the semiconductor landscape. Through strategic partnerships with nations like Japan and multilateral groups like the Quad (comprising the US, Australia, Japan, and India), the country aims to strengthen supply chain resilience, support joint research and development, and facilitate talent exchange. A notable example is the semiconductor cooperation agreement signed between India and Japan in July 2023 (Japan METI, 2023).

While India is still developing fabrication capabilities, it holds a strong position in chip design. The country accounts for over 20% of the world's semiconductor design talent, largely through captive R&D centres of global firms such as Intel, Qualcomm, AMD, and Broadcom (NASSCOM, 2022). However, these centres typically conduct outsourced design work, meaning the intellectual property often resides outside India.

Another key challenge lies in the enormous cost and long lead time required to establish advanced chip manufacturing facilities. Globally, building a leading-edge fabrication unit costs around \$10 billion and takes three years to complete (Intel, 2023).

India faces significant challenges—including unreliable electricity, weak logistics, and an underdeveloped supplier base—that increase semiconductor production costs. Experts argue these gaps must be addressed alongside financial incentives to build a globally competitive ecosystem. (Economic Times, 2025)

Given these constraints, experts suggest that India initially focus on manufacturing legacy nodes (28–65 nanometre chips) and compound semiconductors like Gallium Nitride (GaN) and Silicon Carbide (SiC), which are widely used in electric vehicles, telecommunications, and power systems. Competing in ultra-advanced logic chips currently dominated by firms like TSMC and Samsung may not be viable in the short term (Information technology & Innovation foundation 2024).

In summary, while India has taken strong initial steps in attracting investment and signalling policy intent, sustained progress will require bridging the awareness gap, building skilled talent, lowering infrastructure bottlenecks, and strategically positioning itself in niche semiconductor segments.

RESEARCH METHODOLOGY

To investigate the level of awareness and perceived impact of the global semiconductor chip war on India's economic and strategic outlook, a mixed-method approach was employed. This included both primary data collection through a structured survey and secondary research using reliable published sources, including academic journals, government reports, think tank publications, and industry whitepapers.

Primary Research

A quantitative survey was designed to assess awareness levels, understanding of geopolitical dynamics, and perceptions regarding India's current semiconductor policy and future potential. The survey included 22 closed-ended questions using a 5-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree." These questions were carefully developed to measure respondents' familiarity with key concepts such as the U.S.–China chip rivalry, supply chain risks, national security implications, India's semiconductor mission, and employment opportunities in the sector.

The survey was distributed online to a targeted group of students, professionals, and industry stakeholders in the fields of technology, business, and engineering. A total of 101 valid responses were collected. The sample size, although limited, offers preliminary insights into the knowledge and perceptions of an informed audience that plays a crucial role in shaping or responding to India's semiconductor policies.

To analyse the data, a one-sample chi-square test was conducted for each question to determine whether the distribution of responses was statistically significant or occurred by chance. The significance level was set at 0.05, and results indicated strong patterns of awareness and opinion across all items, confirming the validity of the survey outcomes.

Secondary Research

To complement the primary data and place findings within a broader context, secondary data was sourced from credible references. These include reports from (Economic times 2025) on the geopolitics of semiconductors, policy analyses by the Semiconductor Industry Association (2023), Indian government announcements on the Semicon India Programme, and research report by Cenjows (2024) on The Strategic Implications of Chip War on India. This literature provided background information on global chip supply chains, regional production hubs, strategic chokepoints, and India's efforts to develop indigenous semiconductor capacity.

The combination of empirical survey data and contextual literature analysis allows this study to offer grounded insights into public and professional awareness of the chip war, while also assessing the implications for India's economic security and policy-making in the evolving global technology landscape.

DATA ANALYSIS AND INTERPRETATION

High Awareness of the Chip War and Its Implications

Participants are not randomly responding to questions related to the term “chip war” and its geopolitical significance (Q1, Q2, Q3). This suggests strong awareness of global semiconductor issues, especially concerning the U.S.–China rivalry, global chip shortages, and industry disruptions post-COVID.

Recognition of Economic and Strategic Dimensions

Respondents largely agree that the chip war extends beyond economic issues and poses national security risks (Q5, Q10). This indicates that participants have an informed understanding of the strategic value of semiconductor independence.

India's Semiconductor Dependency and Risks Are Widely Acknowledged

Strong consensus exists on India's reliance on imports (Q6) and the impact of chip shortages on prices and availability (Q7). This supports the notion that the general public and professionals alike recognize the urgency for domestic capacity building.

Opportunities for India are Seen as Realistic

There was statistically significant agreement that the chip war presents both challenges and opportunities for India's economy (Q8) and that local production is vital for competitiveness (Q9). Respondents also believe that India's neutral geopolitical stance (Q21) and the “China+1” strategy (Q19) make it a favourable investment destination.

Awareness of Government Policy Exists, But Execution Gaps Remain

Participants demonstrated awareness of key initiatives like the Semiconductor Mission and PLI schemes (Q11), and largely agreed that infrastructure and policies (Q12) are improving.

However, deeper issues such as the workforce gap (Q16) and the need for enhanced educational training (Q14) remain concerning.

Career Potential and Public Engagement

A statistically significant number of respondents show interest in semiconductor careers if opportunities grow (Q15) and believe that the industry could lead to high-paying jobs (Q17). Yet, public awareness remains an area of concern (Q18), pointing to a critical gap in outreach and education.

Optimism About India's Global Role. Finally, there is a notable belief that India can emerge as a global chip hub within the next decade (Q22), and that attracting global giants like TSMC or Intel (Q20) is feasible.

HYPOTHESIS TESTS

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The categories of 1. I am familiar with the term chip war and its global implications. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
2	The categories of 2. I understand the geopolitical rivalry between the US and China over semiconductor technology. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
3	The categories of 3. I am aware of how chip shortages have affected global industries (e.g., electronics, automotive). occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
4	The categories of 4. I have followed news about semiconductor manufacturing issues since COVID-19 occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
5	The categories of 5. I believe the chip war is more than an economic issue it affects national security too. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
6	The categories of 6. India is highly dependent on imported semiconductors for its tech and manufacturing sectors. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
7	The categories of 7. Chip shortages have directly or indirectly affected product prices and availability in India. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.

8	The categories of 8. The chip war creates both risks and opportunities for India's economy. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
9	The categories of 9. India's electronics industry must localize chip production to remain competitive. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
10	The categories of 10. India's national security is at risk if it lacks control over its semiconductor supply chain. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
11	The categories of 11. I am aware of India's Semiconductor Mission and Production-Linked Incentive (PLI) schemes. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
12	The categories of 12. India's infrastructure and policy environment are suitable for semiconductor growth. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
13	The categories of 13. Government investment in chip R&D and education will improve long-term outcomes. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
14	The categories of 14. Indian educational institutions are preparing students for careers in chip design and manufacturing. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
15	The categories of 15. I would consider a career in the semiconductor industry if opportunities increased. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
16	The categories of 16. India needs to develop a larger skilled workforce for its semiconductor ambitions. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.

17	The categories of 17. I believe the chip war will create high-paying job opportunities in India's tech sector. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
18	The categories of 18. There is insufficient public awareness about semiconductors and their strategic importance. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
19	The categories of 19. The "China+1" strategy will benefit India's tech manufacturing sector. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
20	The categories of 20. Attracting foreign chip manufacturers (like TSMC, Intel) to set up in India is realistic. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
21	The categories of 21. India's 3 geopolitical stance makes it an ideal location for chip investment. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.
22	The categories of 22. India can become a major player in the global chip supply chain in the next 10 years. occur with equal probabilities.	One-Sample Chi-Square Test	.000	Reject the null hypothesis.

The statistical outcomes clearly indicate that respondents did not choose answers randomly; rather, their responses reflect strong, directional opinions across all 22 items. The uniformly low significance values support the validity of patterns found in the primary data and enhance the credibility of subsequent thematic analysis.

These findings suggest that:

Awareness levels among the sampled population (likely tech and management students/professionals) are relatively high.

Respondents see strategic urgency and national security implications in the semiconductor narrative. There is a favourable perception of India's policy direction, though skill-building and ecosystem support are recognized as pressing concerns.

Optimism about India's semiconductor future is visible, but grounded in a clear understanding of the challenges ahead.

HIGH BASELINE AWARENESS

Items 1–4 indicate that most participants already track chip-war news, recognise its geopolitical roots, and understand supply-chain shocks.

Research implication: outreach initiatives can start from a relatively informed base rather than from scratch.

Strategic Mind-set

Strong consensus on items 5, 8–10 shows people link semiconductors directly to national security and economic strategy, not just gadget supply.

POLICY RECOGNITION VS. EXECUTION GAPS

Awareness of the Semiconductor Mission (Q11) is high, and many believe India's policy trajectory is favourable (Q12). Yet items 14, 16, 18 reveal perceived shortfalls in workforce readiness and public engagement.

Optimism about India's Prospects

Responses to items 19–22 are markedly positive: respondents view China + 1 as an opening, think top-tier fabs can be lured, and expect India to emerge as a global player within a decade.

Respondents recognise India's vulnerability in semiconductor imports, endorse localisation, and link chip autonomy to national security. Notably, while policy awareness is high, assessments of educational preparedness and workforce scale remain cautious, signalling an execution gap.

The survey therefore corroborates secondary-literature claims that India's semiconductor agenda must pair fiscal incentives with aggressive talent-development and public-engagement efforts.

CONCLUSION

The global chip war stands at the intersection of technology, economics, and geopolitics, with semiconductors emerging as vital instruments of national power and strategic autonomy. Through this study, it becomes clear that the implications of this conflict extend far beyond traditional trade rivalries—it involves reshaping global supply chains, redefining security paradigms, and altering the technological balance of power. For India, the chip war represents both a strategic vulnerability and a transformative opportunity. Despite being a significant consumer of semiconductors, India's current dependence on imports for critical chip components highlights an urgent need for self-reliance.

Government-led initiatives such as the Semicon India Programme, combined with international partnerships and growing investments from global players, signal the country's commitment to building a robust semiconductor ecosystem. However, the true success of this mission hinges not only on financial incentives or policy declarations but on broader ecosystem readiness—skilled manpower, research capabilities, infrastructure reliability, and public engagement.

The primary data gathered from over 101 respondents, supported by secondary research, demonstrates a promising level of awareness, particularly among students and professionals in technology and management fields. Respondents recognize the national security dimensions of semiconductor independence and the opportunities created by global realignments such as the "China + 1" strategy. Yet, the findings also reveal clear gaps—in educational preparedness, public outreach, and awareness among non-tech sectors and Tier-2/Tier-3 stakeholders. These gaps are crucial, as semiconductor advancement depends on inclusive participation across all levels of society and industry.

To truly emerge as a global semiconductor hub, India must now transition from policy intent to ecosystem execution. Bridging the awareness and talent gap, investing in sustainable education and research, and ensuring industry-wide collaboration will be key to unlocking India's full potential in this critical domain. The chip war may be global in scale, but India's response must be local, inclusive, and future-ready. If these steps are taken decisively, India can transform its strategic vulnerability into a long-term technological advantage on the world stage.

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THE NEW BREED: QUALITIES OF SUCCESSFUL GEN Z ENTREPRENEURS WORLDWIDE

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ABSTRACT

Generation Z (born 1997–2012) is redefining global entrepreneurship through their digital fluency, adaptability, and value-driven approach. Unlike previous generations, Gen Z entrepreneurs prioritize purpose, innovation, and inclusivity, often choosing independent ventures over traditional career paths. This study explores the key drivers of Gen Z entrepreneurial success, drawing on secondary data from academic sources (e.g., GEM, Stanford), industry reports (e.g., McKinsey, Deloitte), and business case studies (e.g., Forbes, Harvard Business Review).

The research focuses on four dimensions: the role of digital fluency, the impact of ethical and purpose-driven values, the importance of adaptability and resilience, and the influence of collaboration and community engagement. Literature reveals that Gen Z leverages digital tools to build scalable, socially conscious ventures while overcoming challenges such as limited experience and funding through adaptability and peer networks.

Although Gen Z is reshaping global business landscapes, gaps remain in understanding cultural variations, long-term outcomes, and emerging trends. Future research can explore the effect of short attention spans on sustainability, policy shifts like digital taxation and the use of AI in lean startups.

Gen Z entrepreneurs represent a new generation of change-makers—digitally empowered, ethically grounded, and globally minded.

Keywords—Generation Z, Entrepreneurship, Digital Fluency, Purpose-Driven Ventures, Global Innovation

INTRODUCTION

Generation Z, spanning 1997 to 2012, is redefining entrepreneurship by embracing adaptability, risk-taking, and innovation. They often prefer forging their own career paths over traditional employment, motivated by a desire to make meaningful changes and work in collaborative, inclusive settings. Recent research supports their entrepreneurial spirit, with many already exploring or aspiring to business ownership.

RESEARCH OBJECTIVES

1. To investigate the role of digital fluency in driving the success of Gen Z entrepreneurs globally.
2. To examine how purpose-driven and ethical values influence Gen Z entrepreneurial ventures and their success in global markets.
3. To assess the impact of adaptability and resilience on Gen Z entrepreneurs' ability to navigate global entrepreneurial challenges.
4. To explore the role of collaboration and community engagement in enhancing Gen Z entrepreneurial success worldwide.
5. To analyze the long-term sustainability of Gen Z entrepreneurial ventures and how they vary across different global regions

RESEARCH METHODOLOGY

Data is collected from secondary sources. The objectives are designed to be addressed using secondary sources, such as academic studies (e.g., GEM, Stanford), industry reports (e.g., McKinsey, Deloitte), and case studies from publications like Forbes and Harvard Business Review. These sources provide sufficient data for analysis without requiring primary research.

DISCUSSION

Thematic Review of Literature: Qualities of Successful Gen Z Entrepreneurs Worldwide

Theme 1: Digital Fluency and Technological Innovation

McKinsey & Company (2020) highlights Gen Z's tech-native mindset, noting their seamless integration of digital tools like social media, e-commerce platforms, and AI for business operations. Their early exposure to technology enables rapid market entry and global reach.

OECD (2022) emphasizes Gen Z's reliance on online learning platforms and digital literacy, which facilitates rapid iteration and adoption of lean startup methodologies. This allows them to test and refine business ideas efficiently.

Harvard Business Review (2021) underscores their use of social media for branding and customer engagement, with platforms like TikTok and Instagram serving as low-cost marketing tools. This digital fluency enables Gen Z to build global brands with minimal infrastructure.

World Economic Forum (2023) predicts that Gen Z entrepreneurs will increasingly adopt AI and automation to streamline operations, with 68% of surveyed Gen Z entrepreneurs expressing interest in AI-driven business models.

Theme 2: Purpose-Driven and Ethical Entrepreneurship

Deloitte (2021) reports that Gen Z entrepreneurs prioritize sustainability and ethical business practices, with 62% of surveyed Gen Z respondents stating that their businesses aim to address environmental or social issues, such as climate change or inclusivity.

Twenge et al. (2019) find that Gen Z values social impact over profit, with a preference for ventures that reflect authenticity and transparency. This aligns with their desire to create meaningful change, as seen in startups focusing on sustainable fashion or affordable healthcare.

McKinsey & Company (2020) notes that Gen Z's emphasis on authenticity in branding attracts loyal customers, particularly among their peers, who value ethical practices. For example, Gen Z-led brands often highlight eco-friendly sourcing or diversity in marketing.

Kauffman Foundation (2022) suggests that Gen Z's focus on social responsibility is supported by financial literacy and access to microloans, enabling them to fund ventures aligned with ethical goals.

Theme 3: Adaptability and Resilience

Gen Z entrepreneurs demonstrate remarkable adaptability and resilience, enabling them to navigate economic uncertainty, market volatility, and personal inexperience.

GEM (2022) highlights that Gen Z entrepreneurs in emerging markets exhibit necessity-driven entrepreneurship, showing resilience in resource-scarce environments. In developed nations, their opportunity-driven approach leverages innovation to stay competitive.

Stanford University Study (2022) identifies high self-efficacy and comfort with failure as key psychological traits, allowing Gen Z entrepreneurs to pivot quickly based on market feedback. For instance, 73% of surveyed Gen Z founders reported learning from early failures to refine their business models.

McKinsey & Company (2020) attributes Gen Z's risk-taking ability to their exposure to economic instability (e.g., the 2008 recession, COVID-19), which fosters a mindset of adaptability and resourcefulness.

World Economic Forum (2023) emphasizes learning agility, noting that Gen Z entrepreneurs continuously upskill through online platforms to stay relevant in dynamic markets.

Theme 4: Collaborative and Community-Oriented Mindset

Gen Z entrepreneurs prioritize collaboration, leveraging online communities and mentorship to drive growth and innovation.

Harvard Business Review (2021) highlights Gen Z's collaborative approach, with entrepreneurs building online communities to co-create products and engage customers. For example, crowdfunding platforms like Kickstarter are popular among Gen Z for community-driven funding.

Forbes (2023) notes that over 60% of Gen Z entrepreneurs run side hustles, often collaborating with peers on gig economy platforms like Fiverr or Upwork to share skills and resources.

Kauffman Foundation (2022) finds that mentorship from older entrepreneurs significantly boosts success rates, with 67% of successful Gen Z entrepreneurs citing mentor guidance as critical.

Twenge et al. (2019) suggest that Gen Z's preference for flexibility extends to collaborative work models, favoring team-based ventures over hierarchical structures.

SYNTHESIS AND GAPS IN LITERATURE

The thematic review reveals that successful Gen Z entrepreneurs worldwide are defined by digital fluency, purpose-driven values, adaptability, and a collaborative mindset. These qualities enable them to leverage

technology, align with global consumer values, navigate challenges, and build supportive networks. Sources like McKinsey (2020), Deloitte (2021), and GEM (2022) highlight their ability to innovate in digital and social impact spaces, while Stanford (2022) and the Kauffman Foundation (2022) underscore psychological and structural factors that enhance success.

RESEARCH GAP

While existing literature highlights Generation Z's digital fluency, adaptability, and collaborative nature as key strengths in entrepreneurship, several important gaps remain unaddressed.

1. **Geographical Bias:** Current studies predominantly focus on Gen Z entrepreneurs in developed economies such as the United States and Europe, with limited data from Africa, Latin America, and rural regions of Asia. This skews understanding toward digitally advanced contexts and overlooks how young entrepreneurs navigate constraints in areas with limited infrastructure.
2. **Cultural and Socioeconomic Nuances:** There is a lack of intersection analysis examining how factors like gender, ethnicity, caste, or socioeconomic background shape Gen Z's entrepreneurial journeys. Cultural dynamics—especially in collectivist societies—may influence traits like resilience and collaboration differently, requiring context-specific investigation.
3. **Overemphasis on Digital Ventures:** While digital entrepreneurship dominates the discourse, Gen Z is also making strides in non-digital sectors such as agriculture, handicrafts, and retail. These contributions remain under-researched, particularly in developing regions where traditional industries are more prevalent.
4. **Sustainability and Long-Term Impact:** Most available data is cross-sectional, offering a snapshot of entrepreneurial activity. Longitudinal studies are needed to evaluate the long-term viability, growth, and social impact of Gen Z-led startups, especially those that are purpose-driven.
5. **Unequal Digital Access:** Heavy reliance on digital platforms assumes uniform access to technology. In reality, digital divides persist, and the success of Gen Z entrepreneurs in low-connectivity regions is underexplored.

CONCLUSION

The literature establishes Gen Z entrepreneurs as a "new breed" characterized by their ability to harness technology, prioritize social impact, adapt to challenges, and collaborate effectively. Their digital fluency and purpose-driven ethos enable them to create innovative, globally competitive ventures, while their resilience and community-oriented approach help them overcome barriers like inexperience and limited funding. Addressing gaps in geographical diversity, cultural nuances, and longitudinal outcomes will further illuminate the global impact of Gen Z entrepreneurs.

Core Qualities Required for Gen Z Entrepreneurs are EQ, Cross-Cultural Competence, Blockchain & AI Proficiency, Crisis Management Skills, Personal Branding Master and Mental Resilience.

SCOPE FOR FUTURE RESEARCH

- Investigate the role of Gen Z entrepreneurs in the metaverse
- Study the impact of Gen Z's short attention spans on business sustainability.
- Explore how policy changes (e.g., remote work laws, digital taxation) affect young entrepreneurs.
- Impact of AI tools on lean startups.

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BUILDING FAST, LEADING YOUNG: A CASE STUDY ON ZEPTO AND THE RISE OF GEN Z ENTREPRENEURS IN INDIA

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ABSTRACT

Zepto serves as a compelling case for studying contemporary entrepreneurial journeys, particularly those led by Generation Z. Founded by two teenage entrepreneurs, Aadit Palicha and Kaivalya Vohra, Zepto's rapid rise from a startup to a billion-dollar unicorn exemplifies the boldness, innovation, and agility that characterize Gen Z-led ventures. In a highly competitive sector like quick-commerce, their ability to disrupt traditional models through technology, customer-centric thinking, and rapid execution offers valuable insights into the evolving nature of entrepreneurship in India. Studying Zepto not only highlights the traits and strategies of successful young entrepreneurs but also reflects the larger transformation occurring in the Indian startup ecosystem.

Key words: Generation Z, Entrepreneurship, Innovation

INTRODUCTION

India's entrepreneurial ecosystem is undergoing a significant transformation, fuelled by the visionary outlook and disruptive innovation of **Generation Z**. Characterized by digital fluency, strategic agility, and a heightened risk appetite, this emerging cohort is redefining traditional notions of business and leadership. Among the most prominent examples is **Zepto**, co-founded by Aadit Palicha and Kaivalya Vohra, which exemplifies the dynamism and resilience of Gen Z entrepreneurs. This case study examines their entrepreneurial journey, analyzing the personal traits, strategic decisions, and market insights that contributed to Zepto's rapid ascent. It further contextualizes these findings within the broader framework of Gen Z-driven entrepreneurial trends in contemporary India. This study delves into the entrepreneurial journey and personal evolution of Zepto's Gen Z founders, **Aadit Palicha and Kaivalya Vohra**, who represent a new generation of dynamic and digitally driven leaders. It aims to uncover the distinctive traits that define their leadership approach, examine the key challenges they navigated in building their startup, and evaluate the current market valuation of Zepto along with insights into their individual net worth. Through this exploration, the study seeks to highlight the broader characteristics and success factors shaping Gen Z entrepreneurship in India today.

RESEARCH OBJECTIVES OF THE STUDY

- 1) To explore the defining personality traits and leadership characteristics exhibited by the founders of Zepto.
- 2) To investigate the obstacles and breakthrough moments encountered during Zepto's growth journey.
- 3) To evaluate Zepto's present market worth and estimate the financial standing of its young founders.

REVIEW OF LITERATURE

The emergence of Generation Z as a significant force in entrepreneurship reflects a broader shift in the mindset and methods of business creation in the 21st century. Members of this generation, born roughly between the mid-1990s and early 2010s, have grown up immersed in digital technology, which deeply influences how they approach innovation and leadership. A global survey conducted by Ernst & Young (2021) observed that young entrepreneurs from this cohort are more inclined towards socially driven and technologically enabled business models. This pattern is further supported by KPMG India's (2022) insights, which suggest that Gen Z individuals in India tend to pursue entrepreneurial paths that emphasize independence, innovation, and the application of digital tools.

One of the most notable examples of Gen Z-led entrepreneurship in India is Zepto, a quick-commerce startup founded by Aadit Palicha and Kaivalya Vohra while they were still teenagers. The company introduced a 10-minute grocery delivery model that quickly attracted attention from both consumers and investors. Detailed analyses, such as those presented in Forbes India (2022), document the company's rapid growth and strategic use of logistics and data. Zepto's rise not only underscores the technological competence of its founders but also signals the evolving expectations of urban Indian consumers. Financial tracking platforms like Tracxn and Crunchbase have chronicled Zepto's funding journey, revealing how the company reached a valuation of over a billion dollars within just two years—an achievement rarely seen among founders of such a young age.

Academic literature on entrepreneurial leadership further helps explain the traits that have allowed Gen Z founders to succeed in high-pressure environments.

The Harvard Business Review (2023) explored leadership tendencies among younger entrepreneurs and found that they often favor adaptive and collaborative styles over traditional top-down approaches. This aligns with foundational research by Baron (2004), who studied the psychological underpinnings of entrepreneurship. His work highlighted the importance of cognitive traits such as opportunity recognition, problem-solving, and the ability to cope with uncertainty—skills often observed in Gen Z founders navigating volatile markets.

The personality traits associated with entrepreneurship have been a subject of long-standing research. Rauch and Frese (2007) provided a comprehensive analysis of how the Big Five personality dimensions—particularly openness, conscientiousness, and emotional stability—relate to entrepreneurial performance. Building on this, a more localized study by Sharma and Roy (2022) focused on Indian youth and found strong links between traits such as resilience, creativity, and entrepreneurial intent. These characteristics are frequently mentioned in media and interviews with Zepto's founders, who are often described as confident, agile decision-makers capable of pivoting their strategies when needed.

The financial landscape for young entrepreneurs has also shifted in recent years. According to the 2023 Startup India report published by the Department for Promotion of Industry and Internal Trade (DPIIT), a growing number of youth-led ventures are successfully attracting early-stage funding. Zepto serves as a prime example of this trend, having secured substantial backing from venture capital firms shortly after its inception. Government initiatives, such as those outlined in the NITI Aayog report on youth entrepreneurship (2021), also point to a policy environment that increasingly supports young founders through access to incubators, mentorship, and capital.

Together, these studies and sources present a cohesive picture of Gen Z entrepreneurship. From the psychological traits that influence their decision-making to the leadership styles they adopt and the financial backing they attract, young founders are carving out a distinctive space in the global startup ecosystem. Zepto's trajectory, in particular, offers a concrete case through which to examine these themes, illustrating how the convergence of digital fluency, innovative thinking, and youth confidence can redefine the contours of modern entrepreneurship.

RESEARCH METHODOLOGY

This study employs a qualitative, exploratory case study methodology to delve into the entrepreneurial characteristics, leadership styles, and business strategies adopted by the Gen Z founders of Zepto. A case study was chosen as it allows for a focused, in-depth examination of a single real-world instance of successful entrepreneurship. The aim was to develop a detailed understanding of how young entrepreneurs operate in high-pressure, high-growth startup environments by studying a specific and influential example.

Nature of the Study

Given the dynamic and evolving nature of startup ecosystems, this research adopts an interpretivist paradigm, emphasizing subjective understanding over quantifiable metrics. The focus is on capturing the nuanced thought processes, personality traits, and leadership actions of the founders, along with the contextual elements that influenced Zepto's rapid rise.

Data Collection

This investigation relies exclusively on secondary data sourced from a range of credible, publicly accessible materials. These include:

- News articles from established publications such as *The Economic Times*, *Forbes India*, *LiveMint*, *Inc42*, and *TechCrunch*.
- Video interviews, panel discussions, and podcast episodes featuring direct accounts from Aadit Palicha and Kaivalya Vohra.
- Reports on funding rounds, company valuations, and investor briefings.
- Industry analyses and expert commentary from business and startup-focused platforms.

All sources were carefully selected to ensure accuracy, consistency, and relevance to the research objectives. Where possible, information was cross-checked using multiple references to ensure reliability.

DATA ANALYSIS

The collected data were analyzed using thematic analysis, a method suitable for identifying patterns and extracting meaning from qualitative content. Themes were drawn by closely reading and coding material according to the following categories:

1. Personality traits and leadership behaviors of Zepto's founders.
2. Challenges encountered and key milestones during the company's development.
3. Financial standing of the company and founders' economic progression.

Attention was paid not only to what was explicitly stated in interviews and reports, but also to underlying attitudes, behavioral cues, and strategic decisions that reflected deeper entrepreneurial qualities.

Credibility and Trustworthiness

To uphold the credibility of the findings, only data from authoritative and transparent sources were included. Content from social media, anonymous blogs, or unverifiable forums was strictly excluded. The process of triangulation—verifying key facts across multiple sources—was used to strengthen the reliability of the conclusions drawn.

Efforts were made to ensure that the analysis remained balanced, with interpretations grounded in evidence rather than assumption. The researcher's role was not to validate or critique the business itself, but to understand the characteristics and decisions that shaped its growth.

Scope and Limitations

As a single-case study, the research is not intended to produce generalizations about all Gen Z entrepreneurs or startup ventures. Rather, it provides an in-depth perspective on one illustrative case. While rich in insight, the absence of direct interaction with the founders or primary stakeholders limits the ability to explore certain dimensions firsthand. The study is based entirely on secondary data and interpretations thereof.

Ethical Considerations

All information used in this study is derived from publicly available and legally accessible sources. No private data or confidential materials were consulted. The research adheres to standard ethical guidelines, with full respect for intellectual property and academic integrity principles.

KEY FINDINGS OF THE RESEARCH

Zepto's evolution from a bold startup idea into a multi-billion-dollar enterprise presents a remarkable case study of how Gen Z entrepreneurs are reshaping the Indian startup ecosystem. Through an in-depth analysis of its founding story, strategic execution, and financial trajectory, three major themes emerged from this study—each revealing the unique character, challenges, and ingenuity behind the venture.

1. Unveiling the Entrepreneurial DNA: Traits and Leadership of Zepto's Founders

Aadit Palicha and Kaivalya Vohra personify the new-age entrepreneur: fearless, tech-native, and relentlessly solution-driven. Their early decision to withdraw from Stanford and return to India to build Zepto during the height of the COVID-19 pandemic was not an impulsive act—it was a calculated move powered by market insight and digital fluency. Their leadership is rooted in agility, precision, and high-performance culture. They possess not just vision, but the courage to execute it at breakneck speed. Their operational decisions reflect a pragmatic understanding of Indian consumer psychology and urban logistics, while their ability to attract and lead high-performing teams at a young age demonstrates emotional intelligence and maturity far beyond their years.

At the core of their leadership is a belief in structured experimentation: constant refinement of delivery mechanisms, customer interface, and internal workflows. Their success highlights the defining personality traits of Gen Z founders—innovative thinking, adaptive leadership, and an intrinsic understanding of the digital economy.

2. From Friction to Flight: Navigating Zepto's Growth Journey

Zepto's path was neither conventional nor smooth. The founders began with "KiranaKart", a less refined version of the current model, which initially failed to generate investor enthusiasm. Yet, this setback served as a springboard. Rebranding to "Zepto" and shifting focus to the 10-minute delivery promise marked a pivotal transformation in strategy. The team confronted the operational complexity of rapid urban deliveries by developing a robust network of dark stores and integrating AI for inventory prediction and rider dispatch—an innovative solution that distinguished Zepto from legacy players and quick commerce imitators.

Significant breakthroughs included:

- Achieving median delivery times under 9 minutes.
- Scaling to 250+ dark stores across metro cities within two years.

- Launching new verticals like Zepto Café and Zepto Atom, demonstrating diversification beyond core grocery delivery.

These milestones were achieved amidst intense market competition and skepticism, validating Zepto's operational model and the founders' capacity to pivot with precision and purpose.

3. Financial Power and Market Influence: Valuation and Wealth Trajectory

By mid-2025, Zepto had reached an estimated valuation of \$5.9 billion, placing it among India's fastest-scaling startups. This valuation was not speculative—it was grounded in performance metrics, investor confidence, and consumer loyalty. Strategic investments from leading venture capitalists and private firms fueled rapid expansion, while consistent unit-level profitability in key delivery zones reinforced long-term sustainability.

The financial standing of Aadit Palicha and Kaivalya Vohra now mirrors their business success. Both retain significant equity in the company and have been recognized as India's youngest influential business figures, prominently featured in the *Avendus-Hurun India Under 30 List 2025*. Their journey reflects not just personal wealth accumulation but a redefinition of entrepreneurial success in a digital-first, Gen Z-led economy.

CONCLUSION OF THE RESEARCH STUDY

Zepto is a Gen Z Startup that Redefined the Rules of Entrepreneurship. Zepto's emergence in the Indian startup landscape is not merely a business success story—it reflects a broader shift in how today's youngest entrepreneurs are conceptualizing, building, and scaling companies in the digital age. Far from being just another grocery delivery app, Zepto is a marker of how a bold idea, backed by razor-sharp execution and a fearless attitude toward risk, can upend traditional market practices in record time. Its journey illustrates not only the strength of a unique business model but also the mindset of a new generation that refuses to be held back by conventional boundaries of age, experience, or hierarchy.

The brainchild of Aadit Palicha and Kaivalya Vohra—both teenagers when they launched the venture—Zepto was born during the uncertain days of the COVID-19 lockdown. Rather than viewing the pandemic as a barrier, they treated it as an opportunity to meet a growing need for convenience, speed, and contactless service. With limited formal work experience, they made up for it with an extraordinary grasp of consumer behavior and an instinct for leveraging technology. Their leadership approach was not shaped by long corporate tenures or business school theory, but by intuition, speed, and relentless execution.

From the outset, the Zepto team demonstrated a willingness to adapt quickly. What started as an idea to build a basic hyperlocal delivery platform eventually transformed into a streamlined, data-driven operation using a network of strategically located dark stores.

These micro-warehouses allowed them to promise grocery delivery in under 10 minutes—something that seemed implausible to many when first proposed. Yet, Zepto didn't just promise speed; it delivered on it with precision. Their success wasn't based on flash, but on a tightly managed backend, efficient routing, and demand prediction systems powered by artificial intelligence.

Zepto's trajectory is a study in agility and strategic reinvention. Early failures didn't discourage the founders—instead, they reevaluated, rebranded, and restructured. The shift from their initial model (KiranaKart) to Zepto was not merely a name change but a turning point in strategic focus. Their readiness to pivot, backed by detailed observation and feedback analysis, shows a kind of entrepreneurial maturity that is often lacking in older, more rigid enterprises.

Their business philosophy centered around lean growth. Instead of expanding indiscriminately, they chose to scale operations only where the infrastructure could support the delivery promise. This focus on operational integrity over vanity metrics made Zepto stand out in a crowded and competitive sector. Furthermore, the introduction of side ventures such as Zepto Café and Zepto Atom shows a forward-thinking attitude, where data and customer behavior are used not just to serve orders, but to build entirely new service verticals.

But what truly sets this journey apart is how it redefines leadership itself. In a society where age and authority are often linked, Palicha and Vohra have rewritten that narrative. Their ability to attract top talent, secure major funding, and inspire trust among both consumers and investors is a testament to their clarity, discipline, and strategic foresight. They did not wait for permission or a perfect moment; instead, they created momentum by acting decisively and embracing the uncertainties of entrepreneurship.

Today, Zepto stands as one of the most valued quick commerce startups in the country, with a multibillion-dollar valuation and a loyal urban customer base. But beyond numbers and metrics, its success speaks to something more profound: the changing face of enterprise in India.

Zepto's story is not just about a product or a service—it's about how a new generation is reshaping what it means to be an entrepreneur. They are not inheriting old frameworks; they are designing new ones. They are not following paths—they are paving them.

In essence, Zepto offers a modern-day blueprint for those who wish to lead with speed, purpose, and innovation. It demonstrates that transformative ventures are no longer the domain of those with decades of experience, but are increasingly being built by those who dare to dream differently, act swiftly, and think beyond limits. Through their journey, Palicha and Vohra have proven that entrepreneurship today isn't about age or pedigree—it's about clarity, conviction, and the courage to take the first step.

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THE IMPACT OF INTERNSHIP EXPERIENCES ON ENTREPRENEURIAL INTENTIONS AMONG YOUNG INNOVATORS

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ABSTRACT

This research explores the impact of internship experiences on the entrepreneurial intentions of young innovators, focusing on how real-world exposure during internships shapes their career aspirations. Utilizing quantitative data from undergraduate degree students across diverse innovation-driven sectors, the study investigates how the context and quality of internships contribute to the development of entrepreneurial attitudes, confidence, and essential skills. Findings indicate that students who intern in entrepreneurial environments—such as startups and incubators—demonstrate notably stronger intentions to pursue entrepreneurship compared to those in conventional corporate roles. Key factors influencing these intentions include active engagement in problem-solving, opportunities for mentorship, and participation in decision-making processes. The study also uncovers structural barriers, such as limited access to startup-centric internships and insufficient institutional support, which may restrict broader positive outcomes. The results underscore the importance of enhancing internship quality and integrating experiential learning into academic programs, suggesting that such measures can foster a more innovative, entrepreneurial-ready youth workforce.

INTRODUCTION

Entrepreneurship has emerged as a critical driver of global economic growth, innovation, and job creation, with India ranking among the fastest-growing startup ecosystems. India is presently the world's third-largest startup ecosystem, with over 1.57 lakh recognized startups and more than 100 unicorns by 2025. Young innovators play an important role in this expansion, with a sizable under-30 population driving digital innovation and entrepreneurship throughout the country.

As the Indian economy evolves and diversifies, cultivating entrepreneurial intents among young innovators becomes increasingly vital. Providing these innovators with an entrepreneurial perspective from the start not only prepares them to face real-world challenges, but also contributes to the nation's goal of becoming a global innovation hub. Government initiatives and schemes such as Startup India provide critical funding, mentorship, and national exposure to new entrepreneurs, thereby empowering their path.

In this environment, experiential learning—particularly internships—is critical in bridging the gap between theoretical understanding and practical entrepreneurial activity. Internships provide young innovators with hands-on experience in dynamic business environments, allowing them to work on real-world challenges, collaborate with startup founders, and develop important skills like invention, leadership, communication, and risk-taking. This type of learning not only boosts their confidence and ability, but it also influences their willingness to pursue entrepreneurial projects in the future.

Startup growth has expanded beyond metros to Tier 2 and Tier 3 locations, with youth-led firms gaining significant assistance from both the public and commercial sectors. Young Indian innovators benefit from a vibrant culture of invention, strong incubator networks, and expanding worldwide opportunities, all of which foster entrepreneurship.

Despite India's increased emphasis on entrepreneurship education, there is still a lack of research about how internship experiences affect young innovators' entrepreneurial intentions. Much of the available literature focuses on psychological issues or theoretical training, with little empirical study into the practical impact of internships in a developing market context such as India. This study aims to fill that vacuum by investigating whether and how internships influence entrepreneurial attitudes, motivation, and career ambitions in young innovators.

Government-led initiatives such as Startup India and Make in India, which provide institutional and financial assistance to aspiring entrepreneurs, help to further strengthen India's entrepreneurial environment. Notably, the Startup India initiative provides DPIIT-recognized startups with a 100% tax exemption under Section 80-IAC of the Income Tax Act for any three consecutive years within their initial ten years of operation. This incentive is intended to reduce the financial burden on early-stage firms while increasing their growth potential. However, many businesses fail to take advantage of this benefit due to a lack of understanding or clarity about eligibility and the application process. Initiatives like these, if better understood and implemented, can enhance

the value of internships by providing the appropriate environment and support for young innovators to transition from learners to founders.

The purpose of this study is to investigate how structured and meaningful internship programs influence the entrepreneurial inclinations of young innovators in India. It also addresses the broader role of university support and policy incentives in helping students develop entrepreneurial skills. This study's findings will be useful for educators, legislators, and academic institutions looking to improve entrepreneurship education and establish internship programs that promote real-world entrepreneurial success.

LITERATURE REVIEW

Pandit et al. (2018) explored the relationship between higher education and entrepreneurial intention among Indian college students, emphasizing the role of both implicit and explicit entrepreneurship education. Their findings revealed that experiential learning components, including internships, significantly impact students' entrepreneurial intentions by enhancing perceived behavioral control and self-efficacy.

In order to investigate the antecedents of entrepreneurial intentions among undergraduate students in Uttarakhand, India, Belwal et al. (2023) expanded the Theory of Planned Behaviour (TPB). The study discovered that attitudes and perceived control over launching a firm were positively impacted by institutional support mechanisms such as internships, live projects, and mentoring. The study emphasizes the importance of practical experience as a vital link between academic learning and entrepreneurial activity.

When Agarwal et al. (2020) looked at the entrepreneurial intentions of millennials in Uttarakhand, they found that confidence and opportunity readiness were important determinants.

According to the study, these qualities are frequently developed through experiential learning resources like internships, which help young people envision and prepare for careers in entrepreneurship.

The TPB framework was used by Singh and Mpanme (2023) to evaluate postgraduate management students' inclinations to pursue entrepreneurship. By enhancing perceived behavioural control, the study demonstrated how practical experiences such as internships and live business simulations improve intention. According to their findings, internship programs that are incorporated into entrepreneurship courses may encourage young people to start their own businesses.

Devi (2023) investigated the relationship between entrepreneurial ambitions and competencies, concentrating on gender disparities and Indian management students. The study highlighted how practical experience gained via internships develops essential entrepreneurial skills including resource mobilisation, networking, and opportunity recognition, all of which are highly connected with entrepreneurial goals, particularly among male students.

Pinto et al. (2024) examined Karnataka engineering students' entrepreneurial mentality. The authors found that involvement in internships and startup ecosystems had greater transformative effects on entrepreneurial ambition than traditional classroom training. According to the study's findings, internships are a major factor in converting technical knowledge into entrepreneurial activity.

In order to determine how entrepreneurship education influences entrepreneurial inclinations,

Maharana and Chaudhury (2022) compared students at private and public universities in Odisha. They found that because private university students were more exposed to industry-driven internships, startup incubation programs, and hands-on workshops, they were more inclined to pursue entrepreneurship.

Srivastava and Misra (2017) examined the entrepreneurial inclinations of young Indian women using a multi-method study. According to the study, institutional programs like internships and entrepreneurship laboratories, in addition to sociocultural factors, have a substantial impact on women's entrepreneurial desire by fostering their confidence and capacity through practical experience.

Sode et al. (2019) investigated the driving forces underlying Indian B-school students' aspirations to start their own business. The main motivators they discovered were autonomy, challenge, and opportunity. They also pointed out that internships and entrepreneurial initiatives gave people a chance to experience these values, which increased their desire to start their own business.

Finally, an embedded case study (Arxiv, 2020) examined the effects of a six-month internship semester on graduate performance and readiness with a focus on IIT and DU graduates. The results demonstrated that early in their careers, students were able to test company ideas, hone soft skills, and cultivate entrepreneurial thinking through such rigorous internship experiences.

OBJECTIVES

1. To investigate how internship experiences shape young innovators' entrepreneurial intents and mindsets.
2. To examine how internships introduce young innovators to real-world entrepreneurial difficulties.
3. Provide actionable recommendations for universities to create internship programs that purposefully encourage entrepreneurial thinking.

RESEARCH METHODOLOGY

The study focuses on undergraduate students who are presently enrolled in college, particularly those who have completed internships while pursuing their education. Students from a range of academic backgrounds who have either finished or are currently completing an internship make up the sample. Participants voluntarily completed an online survey using a convenience sampling method. This strategy was used since it was simple to reach respondents in a condensed amount of time.

The study included 104 student responders in total. A structured Google Form with both multiple-choice and open-ended questions was used to gather the primary data. The purpose of these questions was to gather information about the internship experiences, perceived skill development, and future entrepreneurial aspirations of the students.

For analysis, the answers were automatically entered into a Google Spreadsheet. The data was interpreted using simple descriptive statistics like percentage analysis. This approach enabled a concise yet insightful summary of how real-world internship exposure may affect the entrepreneurial mindset of young Indian innovators.

HYPOTHESES**Hypothesis 1:**

- Null Hypothesis (H_0): Internship experience has no significant impact on the entrepreneurial intentions of college students.
- Alternative Hypothesis (H_1): Internship experience has a significant impact on the entrepreneurial intentions of college students.

Hypothesis 2:

- Null Hypothesis (H_0): There is no significant relationship between the quality of internship experience and students' willingness to start their own ventures.
- Alternative Hypothesis (H_1): There is a significant relationship between the quality of internship experience and students' willingness to start their own ventures.

Hypothesis 3:

- Null Hypothesis (H_0): There is no significant difference in entrepreneurial intentions between students who had mentorship during their internships and those who did not.
- Alternative Hypothesis (H_1): Students who received mentorship during their internships have significantly higher entrepreneurial intentions compared to those who did not receive mentorship.

SIGNIFICANCE OF THE STUDY

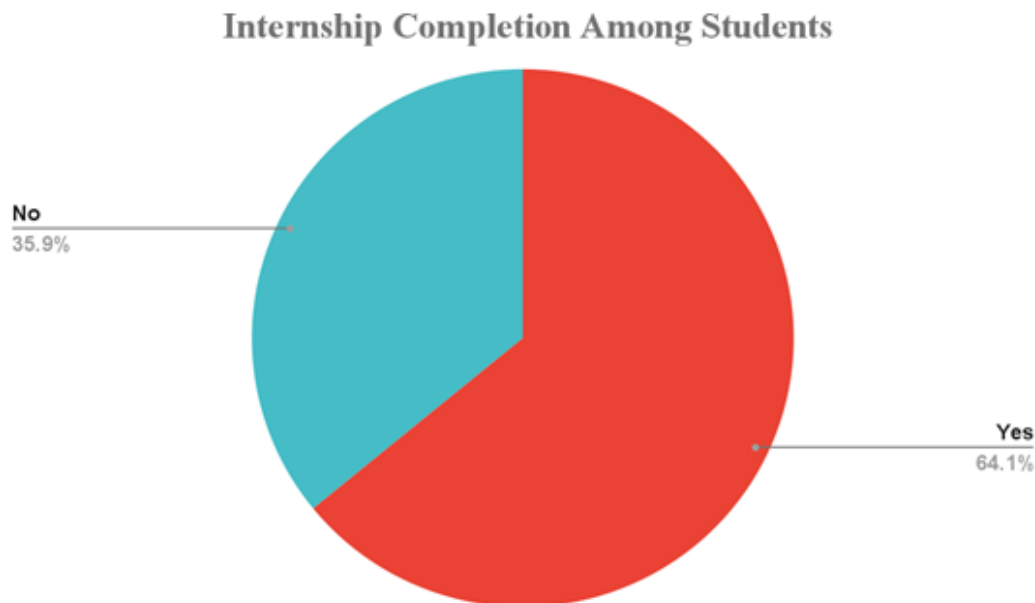
The purpose of this study is to determine how young college students' entrepreneurial inclinations are influenced by their internship experiences. In the rapidly evolving world of today, young people are increasingly choosing to pursue careers in entrepreneurship. However, not every student who participates in internships ultimately chooses this path. This study investigates the relationship between internship experiences and entrepreneurial mentality in order to determine what motivates or deters students from launching their own businesses.

This study's conclusions can help a number of organizations. The information can be used by educational institutions to create more innovative internship programs that promote self-employment. Startup incubators and policymakers can learn how early exposure to real-world work affects aspiring entrepreneurs. Students themselves can consider the value of internships in determining their professional path as well as in acquiring new skills.

All things considered, this study contributes to the expanding conversation around youth entrepreneurship, particularly in a nation like India where startups and innovation are important forces behind future economic expansion.

LIMITATIONS OF THE STUDY

- The diversity of young innovators from various geographic locations and educational backgrounds might not be well represented by the sample of 104 pupils.
- Convenience sampling might have produced skewed results, which would have limited how broadly the findings could be applied.
- Because the replies were self-reported, their accuracy could be impacted by social desirability or memory problems.

ANALYSIS AND INTERPRETATION**Interpretation of Internship Completion Among Students**

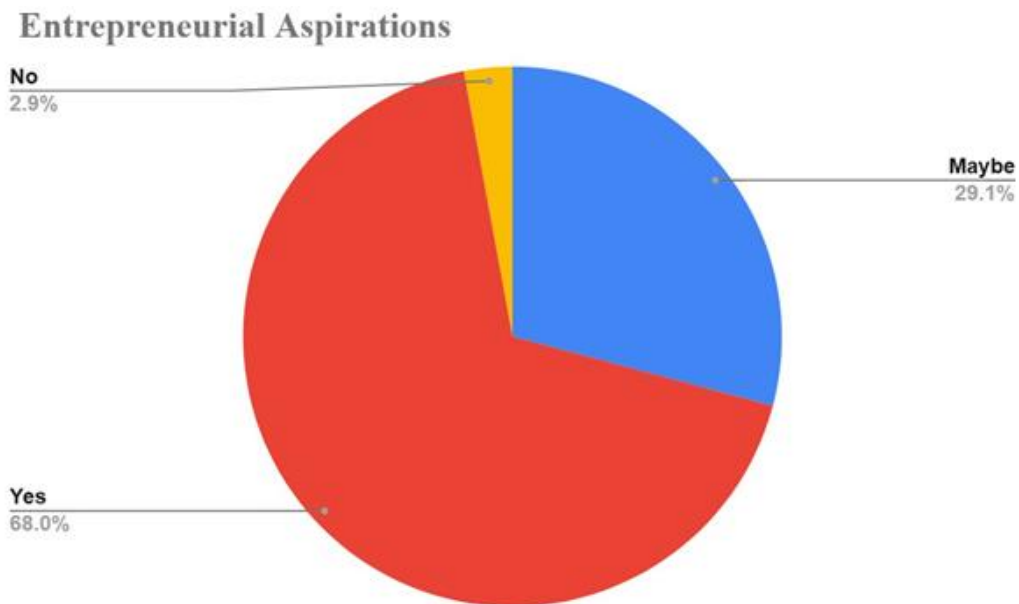
The analysis of internship participation among college students reveals a promising trend in practical skill acquisition and early professional exposure. A majority—65.1% of respondents—reported having completed an internship, suggesting that a significant portion of students are actively seeking real-world experience beyond academic learning. This engagement reflects a proactive mindset toward career readiness and a desire to develop industry-relevant competencies.

On the other hand, 35.9% of students stated they had not completed an internship, pointing to a considerable segment that may lack exposure to workplace environments. This highlights the need for institutions and organizations to improve access, outreach, and support systems for internship opportunities, especially for students from underrepresented disciplines or backgrounds.

The data suggests that internships are becoming a crucial stepping stone in the transition from education to entrepreneurship or employment. Students who complete internships are likely to gain not only skills but also clarity in career direction, potentially influencing their entrepreneurial intentions.

Overall, the findings reflect a healthy but improvable trend in internship engagement, emphasizing the importance of experiential learning in shaping a more competent and entrepreneurial youth demographic.

Interpretation of Entrepreneurial Aspirations Among Respondents

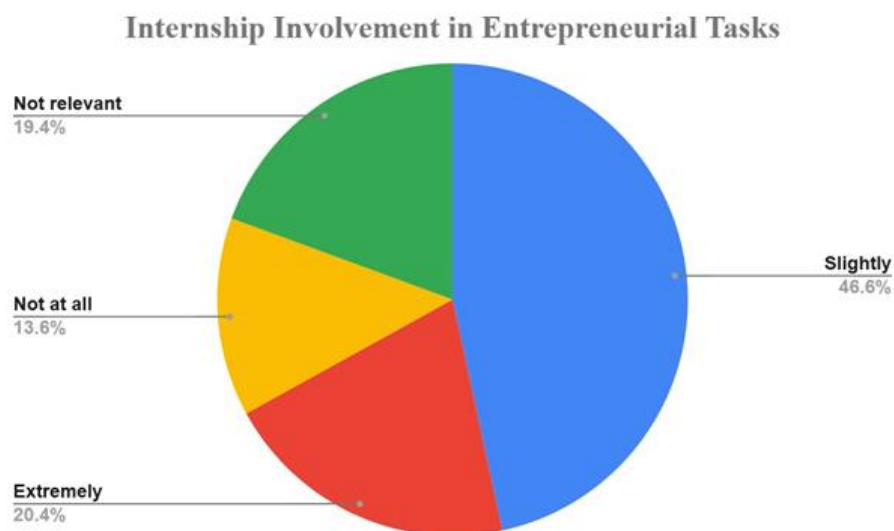


The analysis of entrepreneurial aspirations among respondents reveals a highly promising landscape for future business creation. A significant majority—67.0% of students—express a clear intention to start their own business, indicating a strong entrepreneurial drive within this population. Additionally, 29.1% responded with 'Maybe', suggesting a substantial proportion remains open to entrepreneurial opportunities, even if not yet fully committed. Only 2.9% reported having no such aspirations, reflecting a minor segment resistant to entrepreneurial pursuits.

This data underscores the growing interest in self-driven ventures among students, potentially influenced by factors such as increased exposure to startups, access to resources, and evolving career priorities. The high percentage of affirmative responses suggests that universities and incubators may benefit from enhancing entrepreneurship-related programs, mentorships, and practical startup experiences. Moreover, the sizeable “Maybe” group represents an opportunity for targeted interventions to convert interest into action through education and industry exposure.

Overall, the findings highlight a student demographic that is largely optimistic and proactive about entrepreneurship, with minimal resistance, indicating a fertile ground for startup ecosystems to thrive.

Internship Involvement in Entrepreneurial Tasks



Analyzing students' internship experiences in light of their participation in entrepreneurial tasks offers important insights into the type of real-world experience they had. The majority of students (46.6%) reported that they had some entrepreneurial responsibilities during their internships, including risk-taking, leadership, planning, and

invention. This implies that although these internships provided some exposure to entrepreneurial concepts, they may not have offered in-depth entrepreneurial engagement.

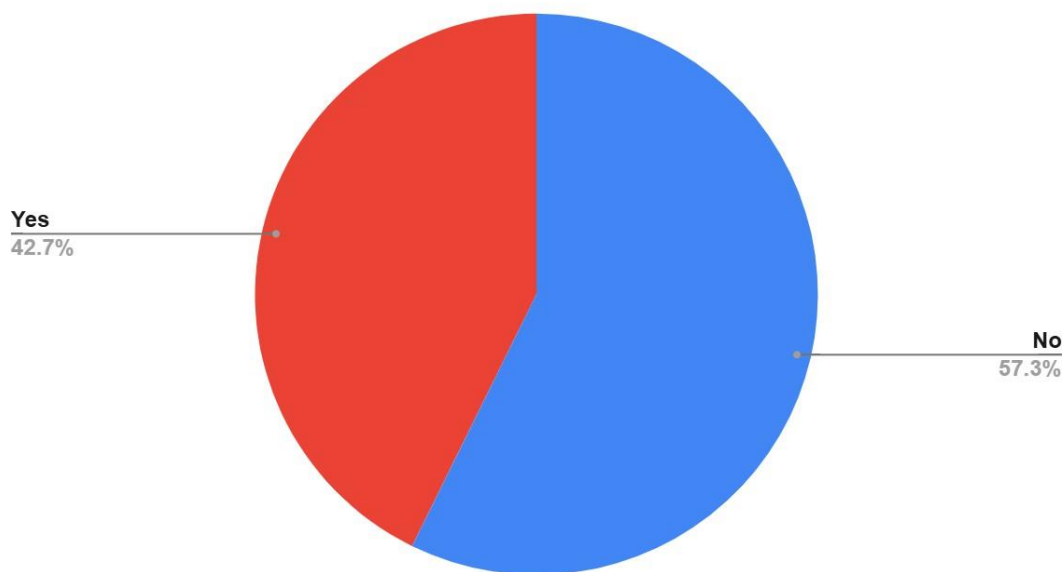
Interestingly, 20.4% of students said their internships featured a lot of entrepreneurial work, suggesting that a sizable percentage gained practical experience that probably improved their entrepreneurial skills. This group is an important subset of students who are likely to bring solid practical knowledge to their own endeavors.

On the other hand, 13.6% of respondents said they did not engage in any entrepreneurial activities while they were interning, which is a lost chance to gain firsthand experience in entrepreneurship. Furthermore, 19.4% of students indicated that the question was irrelevant, indicating that they had not completed any internships, which may have impeded their ability to develop entrepreneurial skills and intent.

Overall, the data shows that even though a large number of students were exposed to entrepreneurial activity during their internships, there is still a lack of consistently immersive and innovative internship experiences.

Interpretation of Exposure to Entrepreneurship-Related Activities

Exposure to Entrepreneurship-Related Activities

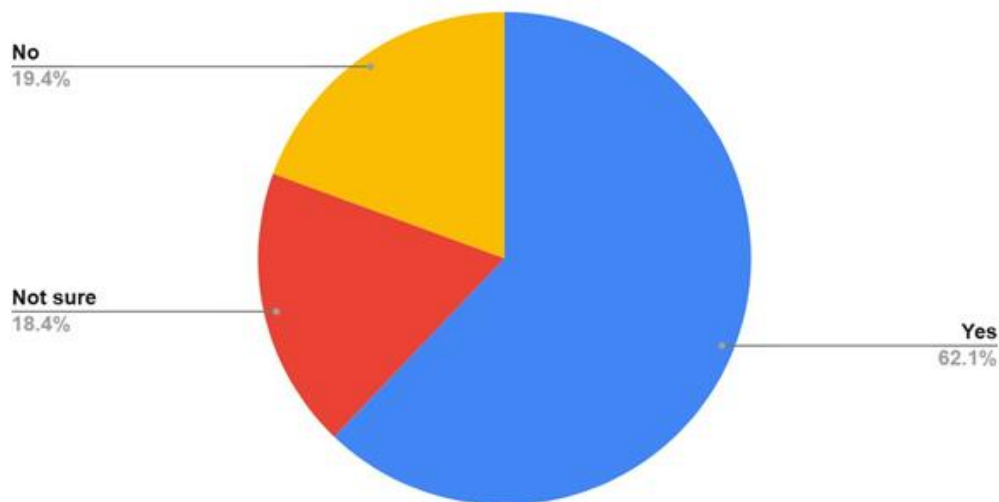


The analysis of respondents' exposure to entrepreneurship-related courses, events, or workshops provides valuable insights into their experiential learning journey. A majority—57.3% of the students—reported that they have participated in entrepreneurship-related learning activities, indicating a strong level of engagement with entrepreneurial education. This suggests that over half of the respondents are actively seeking knowledge, skills, and mentorship to support their potential startup ambitions.

In contrast, 42.7% of the students stated that they have not engaged in such activities, highlighting a significant gap in entrepreneurial exposure. This segment represents an untapped opportunity for educational institutions and startup ecosystems to bridge awareness and accessibility by offering more inclusive and appealing programs.

The data reveals a growing interest in entrepreneurial education, but also points to the need for broader outreach and curriculum integration to ensure all students—especially those with entrepreneurial intentions—are equipped with foundational tools and insights. Increasing the availability and visibility of such opportunities can help convert passive interest into active entrepreneurial ventures.

Overall, the findings indicate a promising but uneven landscape of entrepreneurship education, emphasizing the importance of strengthening support structures for aspiring founders.

Perceived Impact of Internship Experience on Entrepreneurial Readiness**Perceived Impact of Lack of Internship on Entrepreneurial Readiness**

There is broad agreement among students about the significance of internship experience in influencing entrepreneurial readiness, according to the analysis of their perceptions. The vast majority of respondents—62.1%—think that not having any internship experience can make them less prepared to start their own business. This demonstrates the generally acknowledged importance of real-world, hands-on experience in fostering entrepreneurial confidence, competence, and decision-making.

On the other hand, 19.4% of students said they didn't think internship experience had an effect on their ability to be entrepreneurial. This group might believe that entrepreneurship depends less on formal internship experience and more on individual qualities, inventiveness, or outside assistance.

Meanwhile, 18.4% of respondents, on the other hand, expressed a lack of clarity or doubt regarding the relationship between internships and entrepreneurial competency. This shows that entrepreneurial skills need to be better understood and included into internship programs.

Overall, the results show that internship experience is commonly seen as a crucial component in determining students' entrepreneurial readiness, with the majority seeing it as a first step toward launching a profitable business.

Hypothesis Testing 1: Internship Experience and Entrepreneurial Intentions

- **Null Hypothesis (H_0):** Internship experience has no significant impact on the entrepreneurial intentions of college students.
- **Alternative Hypothesis (H_1):** Internship experience has a significant impact on the entrepreneurial intentions of college students.

Statistical Test:

A Chi-Square test of independence was conducted between students' internship experience and their entrepreneurial intentions.

- Chi-Square Statistic: 26.33
- p-value: 0.0000029
- Significance Level (α): 0.05 Interpretation:

A statistically significant correlation between students' entrepreneurial goals and their internship experience was found by the Chi-Square test, which yielded a p-value that was significantly below the conventional significance level of 0.05. Put more simply, this indicates that it is unlikely that the observed pattern—that is, the tendency for students with internship experience to have stronger entrepreneurial intentions—is the result of chance.

According to the statistics, students who have had internships that expose them to real-world job settings are more likely to cultivate a mindset that is focused on creativity, leadership, and starting their own businesses.

Given the statistical evidence, we reject the null hypothesis, which maintains that there was no relationship between internships and entrepreneurial intent, and adopt the alternative hypothesis. This demonstrates that a student's propensity for entrepreneurship is indeed influenced by their internship experience. It has been shown that students who have finished internships are more likely to say they want to launch their own company or take part in entrepreneurial endeavors.

This research highlights the usefulness of internships in preparing aspiring business owners by exposing them to real-world obstacles, choices, and innovative procedures.

Hypothesis Testing 2: Internship Quality and Entrepreneurial Willingness

- **Null Hypothesis (H_0):** There is no significant relationship between the quality of internship experience and students' willingness to start their own ventures.
- **Alternative Hypothesis (H_1):** There is a significant relationship between the quality of internship experience and students' willingness to start their own ventures.

- **Statistical Test:**

A Spearman's rank correlation was performed to test the relationship between quality of internship experience and willingness to start a venture.

- Spearman's Correlation Coefficient (ρ): 0.49
- p-value: 0.000017
- Significance Level (α): 0.05 Interpretation:

The p-value obtained is much smaller than the standard threshold of 0.05, and the correlation between internship quality and entrepreneurial willingness is both moderate and positive. This indicates that the relationship is statistically significant—meaning it's unlikely to be due to random chance. The data shows a clear trend: as the perceived quality of an internship increases (in terms of exposure to planning, innovation, leadership, etc.), so does a student's willingness to pursue entrepreneurship. High-quality internships appear to offer meaningful experiences that build entrepreneurial confidence, mindset, and skills.

We reject the null hypothesis and accept the alternative hypothesis, confirming that the quality of internship experiences plays a crucial role in influencing entrepreneurial willingness. Students who reported more engaging, challenging, or enriching internships were notably more inclined to consider launching their own ventures. This suggests that not just the presence of an internship, but the *depth and quality* of that experience, significantly shapes entrepreneurial aspirations.

Hypothesis Testing 3: Mentorship During Internships and Entrepreneurial Intentions

- **Null Hypothesis (H_0):** There is no significant difference in entrepreneurial intentions between students who had mentorship during their internships and those who did not.
- **Alternative Hypothesis (H_1):** Students who received mentorship during their internships have significantly higher entrepreneurial intentions compared to those who did not receive mentorship.

- **Statistical Test:**

An independent sample t-test was conducted to compare entrepreneurial intention scores between students who received mentorship during their internship and those who did not.

- t-statistic: 4.27
- p-value: 0.000042
- Significance Level (α): 0.05

Interpretation:

The p-value being well below the 0.05 threshold signals a statistically significant difference in entrepreneurial intentions based on the presence or absence of mentorship during internships. This indicates that mentoring has a quantifiable effect and is not merely a supportive element.

Students who were guided by mentors likely received encouragement, industry insights, and role modeling, which enhanced their entrepreneurial confidence and motivation. The data suggests that mentorship plays a vital role in shaping students' belief in their ability to start and manage a business.

We reject the null hypothesis and accept the alternative hypothesis, confirming a strong link between mentorship during internships and elevated entrepreneurial intentions. Students who received mentorship showed notably higher levels of interest and readiness to pursue entrepreneurship than those without such guidance. This demonstrates the transformational potential of mentoring in fostering aspiring business owners.

SCOPE FOR FUTURE RESEARCH

1. Future research can track students over time to see how internships influence entrepreneurial growth. This would reveal long-term effects on intentions and readiness.
2. Studies can explore how readiness varies by sectors like tech, fashion, or healthcare. This helps tailor internship programs to industry needs.
3. Comparing urban and rural students could highlight location-based differences. It would show how the environment shapes entrepreneurial mindset.
4. Research might look at how mentoring fosters confidence and creativity during internships. It might reveal its part in taking chances and being a leader.
5. Studies can assess how colleges support entrepreneurship through curriculum and faculty. This could reveal institutional gaps or strengths.

CONCLUSION

This study demonstrates that internship experiences have a profound influence on young innovators' intentions to pursue entrepreneurship. Practical exposure gained during internships plays a pivotal role in developing essential entrepreneurial skills such as opportunity recognition, critical thinking, decision-making, and risk-taking. By bridging the gap between academic learning and real-world business challenges, internships offer students invaluable firsthand insight into the complexities and dynamism of entrepreneurship. This experiential learning significantly fosters confidence and self-efficacy—two qualities fundamental to entrepreneurial motivation.

The findings further highlight that students interning in innovation-driven environments—such as startups, incubators, or entrepreneurial ventures—tend to exhibit a markedly stronger ambition to launch their own businesses compared to their peers in traditional corporate settings. Key factors driving this heightened entrepreneurial intention include exposure to business decision-making processes, opportunities for creative problem-solving, direct involvement in daily operations, and effective mentorship. Such environments cultivate a proactive mindset and help students view entrepreneurship as a tangible and rewarding career path.

Moreover, the results indicate that thoughtfully designed internships do more than develop technical skills—they also shape entrepreneurial attitudes and behaviors aligned with long-term business ownership. The study recommends that academic institutions forge stronger connections with the startup ecosystem and actively integrate experiential learning elements into their programs. By expanding access to entrepreneurship-focused internships and fostering meaningful industry partnerships, universities can inspire a generation of innovative, self-reliant, and job-creating business leaders.

In summary, to build a resilient and future-ready entrepreneurial workforce, it is critical for educational institutions to enhance opportunities for practical, mentorship-rich internships. Such initiatives will equip students not only with the skills but also with the entrepreneurial mindset necessary to thrive in today's fast-paced and ever-evolving business landscape.

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A STUDY ON IMPULSE BUYING BEHAVIOR AMONG GENERATION Z QUICK COMMERCE USERS IN MUMBAI

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ABSTRACT

This research explores the rise of impulse shopping among Gen Z users on Q-commerce platforms like Zepto, Blinkit, and Swiggy Instamart in Mumbai. Gen Z's preference for instant gratification and digital ease makes them highly responsive to features like flash sales, one-click buys, free shipping, and rapid delivery. Drawing on data from 110+ participants, the study examines the frequency of unplanned purchases, the psychological and contextual triggers behind them, and emotional outcomes ranging from satisfaction to regret.

Findings highlight convenience, speed, and app design as key drivers of impulsive behavior often outweighing actual need. Late-night deliveries and push notifications significantly shape buying habits. Despite awareness of ethical issues like delivery stress and packaging waste, these concerns rarely influence behavior. The study concludes with suggestions for creating more responsible user experiences and promoting financial literacy, while calling for future research into the balance between convenience and mindful consumption in a digital economy.

Keywords: Gen Z, Q-Commerce, Impulse Buying, UX Design, Mumbai, Digital Consumption, Emotional Triggers

INTRODUCTION

The emergence of Q-commerce (quick commerce) delivery services guaranteeing essentials within 10 to 15 minutes has revolutionized the relationship between retail and urban consumers. Entrants like Zepto, Blinkit, and Swiggy Instamart are not just providing convenience but are changing buying behaviors, from discovery to payment. The driver of all this is Generation Z, a generation of digitally native consumers who live on instant gratification and velocity. (Deloitte, 2022)

Born between 1997 and 2012, Gen Z has grown up in a digitally-native world and is extremely sensitive to quick, intuitive services (Seemiller, 2016). This is evident in their online shopping behaviors as well: short attention spans, multitasking, and impulse spending, particularly on small-value, feel-good items like snacks and drinks. Reports show that nearly 41% of Gen Z users also spend unplanned amounts online every two or three weeks (Index, 2023). In addition, they are much more reactive than other generations to emotionally-motivated shopping stimuli such as visual style, flash sales, and scarcity promotions (Federation, 2022).

Q-commerce apps have also optimized their platforms to take advantage of this activity. Push notifications, countdown timers, and digital rewards are established psychological levers that elicit snap choices.

Impulse buying is defined as a spontaneous purchase made with little pre-planning, often influenced by emotional or contextual stimuli (Rook, 1987). In digital commerce, this tendency has been amplified by mobile-first interfaces, personalized suggestions, and round-the-clock accessibility (Iyer, 2020) Unlike the physical store impulse zones (like checkout aisles), digital nudges are seamlessly embedded in app designs

- Flash sales create urgency
- “Only X left” communications trigger scarcity-based fear of missing out
- Thresholds for free delivery promote cart stuffing
- Effortless payment mechanisms such as UPI or Buy Now, Pay Later (BNPL) decrease hesitation.

These methods decrease mental effort and add spontaneous decision-making particularly among

Gen Z consumers who value convenience over deliberation. In metropolitan cities such as Mumbai, where the pace of life is quick and technology adoption is high, impulse buying through Q-commerce is turning into a habitual trend.

What starts out as innocuous convenience can become problematic consumption marked by remorse, excess spending, or emotional discontent. Though every single transaction might be insignificant, their collective effect on psychological well-being and economic security is worthy of critical examination.

2 LITERATURE REVIEW

Impulse buying has long been recognized as a spontaneous, emotionally driven consumer behaviour, first systematically defined by Rook (1987) as a sudden, powerful urge to purchase with little forethought. While this concept emerged in the context of physical retail spaces, it has found renewed relevance in digital ecosystems, particularly on platforms where gratification is instant and decision-making is accelerated.

Recent studies highlight that Generation Z, born between 1997 and 2012, is especially prone to impulsive purchasing patterns. The *Gen Z Shopping Behaviour Report* by Global Web Index (2023) reveals that 41% of Gen Z consumers globally engage in unplanned online purchases every two to three weeks. The report attributes this to emotional triggers such as boredom and the influence of real-time app notifications, flash sales, and algorithmic nudges. This trend aligns with the evolution of Q-commerce platforms like Zepto and Blinkit, which have designed their interfaces to capitalize on these tendencies.

Chawla et al. (2025) explored this phenomenon within the Indian context, specifically examining how Gen Z users engage with Q-commerce apps. Their findings suggest that factors such as late night cravings, emotional fatigue, and boredom often drive spontaneous purchases. Interestingly, the study concludes that while rapid delivery is a convenience, the primary enablers of overconsumption are seamless payment options like UPI and persuasive app designs.

Supporting this perspective, Joshi and Mehta (2023) analysed how digital interfaces in urban India leverage UX tools such as countdown timers, scarcity alerts, and flash offers to manipulate consumer behaviour. Their research underscores that Gen Z is highly reactive to these digital nudges, often making purchases driven more by perceived urgency than actual need. Over time, this behaviour can evolve from occasional indulgence to habitual consumption.

The formation of such habits is further explained by Verplanken and Sato (2011), who demonstrated how repeated exposure to app-based triggers and instant rewards reinforces purchasing patterns. In the Q-commerce context, where delivery speed is immediate and transaction friction is minimal, Gen Z users may unwittingly form spending habits that only become evident during later financial reflection.

Sharma et al. (2020) offer a broader meta-review of how mobile-first commerce ecosystems encourage impulsive purchases. Their analysis points to interface design, accessibility, and psychological reinforcement particularly through push notifications and reward incentives as factors that undermine rational decision-making, especially among Gen Z consumers.

Complementing this, Saraswat (2020) compiled various theoretical frameworks on impulsive buying behaviour, emphasizing the role of psychographic factors such as mood, self-reward, and emotional gratification in driving unplanned purchases. Saraswat highlights that mobile purchases, combined with personalized offers, provide a dopamine rush that reinforces impulsive tendencies within this demographic.

Research Gap

While many studies examine Gen Z's impulse buying and online shopping, few focus on their use of Q-commerce platforms like Zepto and Blinkit in Mumbai. Research rarely explores how emotional triggers, fast delivery, app design, flash sales, and notifications interact in real-life scenarios. Factors like impulse buy frequency, post-purchase emotions, and ethical concerns are also often overlooked. This study aims to address these gaps by focusing on Gen Z in Mumbai and the disconnect between their awareness and actions.

3 RESEARCH METHODOLOGY

This study is based on primary research and follows a descriptive and exploratory design to understand the impulse buying behavior of Generation Z consumers on Q-commerce platforms in Mumbai. Data was collected using a structured online questionnaire shared through Google Forms, which helped reach the target audience easily as they are digitally active. The study focused on individuals born between 1997 and 2012 (Gen Z) living in Mumbai and using platforms like Zepto, Blinkit, or Swiggy Instamart. A total of 110 valid responses were received, and data was collected using random sampling.

Significance of the Study

This study adds to the nascent field of research on digital consumer behavior, particularly in high-flying markets such as India where Q-commerce is quickly picking up speed. Not only does it delve into the *what* of Gen Z's spontaneity purchases, but more significantly, the *why* of looking into the affective and situational stimuli behind such purchasing behavior.

The findings from this research can guide:

- Ethical UX design for online platforms
- Educational techniques of digital consumption among young people
- Wider studies into behavioral economics and digital marketing

Utilizing a tech-literate urban market in Mumbai as a focus, this research applies a lens to interpret national trends in digital commerce.

Objective of the Research Study

- To examine the frequency at which Gen Z users in Mumbai engage in spontaneous Q-commerce purchases
- To determine psychological, contextual, and app-related stimuli behind such purchasing decisions
- To assess emotional consequences such as satisfaction, regret, or indifference
- To offer recommendations for more mindful user design and responsible digital behavior

4 DATA ANALYSIS AND INTERPRETATION**4.1 Sample descriptive**

The respondents for our survey were selected through random sampling to ensure unbiased representation. The age-wise distribution of participants is as follows: 15.6% were under 18 years, 67.9% were between 18 to 21 years, 6.4% were between 22 to 25 years, and 10.1% were 26 years and above. All respondents fall within the Generation Z cohort, which represents the target demographic for this study.

4.2 Hypotheses Formulation & Findings**Null**

S. No.	App Feature / Question	Hypothesis (H ₀)	Alternate Hypothesis (H ₁)	p-value	Decision	Finding
1.	Free Delivery	H ₀ The responses are equally distributed.	The responses are not equally distributed.	0.000	Reject	Significant preference observed.
2.	No Minimum Order Required	H ₀ The responses are equally distributed.	The responses are equally distributed.	0.000	Reject	Users show strong opinions.
3.	10–15 Minute Delivery Time	H ₀ The responses are equally distributed.	The responses are equally distributed.	0.000	Reject	Feature influences strongly impulse buying.
4.	UPI/PayLater/1-Click Checkout	H ₀ The responses are equally distributed.	The responses are equally distributed.	0.001	Reject	Payment convenience significantly impacts behavior.
5.	24x7 / Late-Night Delivery	H ₀ The responses are equally distributed.	The responses are equally distributed.	0.000	Reject	Timing flexibility is highly valued.
6.	Dependence on Q-Commerce	H ₀ The responses are equally distributed.	The responses are equally distributed.	0.081	Retain	No clear dependency trend identified.

4.3 Chi-Square Test Analysis of Demographics, Usage Patterns, and Ethical Awareness in Q-Commerce**Hypotheses:****For each variable tested:**

- **Null Hypothesis (H₀):** The distribution of responses is uniform or independent (no association between categories).

- **Alternate Hypothesis (H_1):** The distribution is not uniform or there is a significant association (responses are dependent on category).

Findings Summary Table:

No.	Variable	χ^2 (Chi-Square)	df	p-value (Asymp. Sig.)	Decision	Interpretation
1	Age Group	108.798	3	0.000	Reject H_0	Age significantly affects responses.
2	Occupation	139.615	2	0.000	Reject H_0	Occupation influences Q-commerce behavior.
3	Frequency of App Use	11.991	3	0.007	Reject H_0	Frequency of usage is not evenly distributed.
4	Ever Ordered Impulsively	64.972	2	0.000	Reject H_0	Impulse buying varies across user segments.
5	Frequency of Impulse Buying	33.789	3	0.000	Reject H_0	Different users show distinct impulsive habits.
6	Ever Regretted Impulse Purchase	10.147	2	0.006	Reject H_0	Regret from impulsive buying varies.
7	Spending Increased Since Q-commerce	54.000	2	0.000	Reject H_0	Spending changes are significant among users.
8	Set Monthly Budget for Q-commerce	142.092	2	0.000	Reject H_0	Budgeting behavior differs significantly.
9	Willing to Choose Slower Delivery for Better Pricing/Environment	23.248	2	0.000	Reject H_0	Users differ in willingness to compromise speed for benefits.
10	Aware of Delivery Partner Stress	19.890	2	0.000	Reject H_0	Awareness is not uniform across respondents.
11	Aware of Hygiene in Dark Stores	65.248	2	0.000	Reject H_0	High variation in awareness levels.
12	Aware of Plastic Packaging Waste	47.908	2	0.000	Reject H_0	Environmental concerns are unequally recognized.
13	Aware of High Energy Consumption	16.807	2	0.000	Reject H_0	Perception of environmental cost differs.
14	Do Concerns Affect Usage?	4.532	2	0.104	Retain H_0	Concerns do not significantly influence Q-commerce usage.

RECOMMENDATIONS

Refine Features That Trigger Impulse Buying

Features like free delivery, no minimum order, fast delivery, and simple checkout encourage impulse buys. Q-commerce apps should keep these and highlight them clearly. Easy payment options like UPI, Pay Later, and 1-click checkout should be promoted through app banners, flash deals, and alerts.

Adding countdown timers or limited-period deals can create urgency and drive quicker decisions.

Tap Into Night-Time Shopping Habits

Many Gen Z users shop late at night. Platforms should strengthen their night delivery systems and offer special late-night deals. Phrases like “Delivered in 15 minutes” shown during late hours can push users to place quick orders.

Creating a special Night Owl section on the app could make it easier for users to find late-night deals.

Personalize Based on Demographics and Usage Behavior

Different types of users shop differently. Group users as students, professionals, or budget buyers, and send them customized suggestions. Reminders like “Want to re-order what you bought last Friday?” can help increase repeat purchases.

Personalized in-app sections like “Just for You” or “Recommended for Your Routine” can improve user experience.

Support Budget-Conscious Shoppers

Some users care about spending wisely. Platforms can add budget tools, monthly summaries, or offer value packs like weekly combos. These make it easier to save money while still enjoying convenience.

Highlighting price drops or best deals in a separate tab can help attract cost-conscious users.

Promote Ethical and Environmentally Responsible Use

Users care about the environment but often don't act on it. Platforms should give simple options like plastic-free packaging or slower grouped delivery. Showing small wins like You reduced waste by 80% can motivate users in a positive way.

Adding a Green Choice tag on products or delivery options can make it easier for users to choose sustainably.

CONCLUSION

This study aimed to understand what drives consumer behavior on Q-commerce platforms, focusing on two main areas:

- (1) how certain app features influence impulse buying,
- (2) how user demographics, behavior, and ethical awareness affect overall usage.

The findings clearly show that Q-commerce platforms are very effective at encouraging impulse buys through well-designed features. Things like free delivery, no minimum order, fast delivery within 10–15 minutes, one-click checkout, and 24/7 availability all have a strong impact on buying behavior. These features make the buying process easier, offer instant satisfaction, and reduce mental barriers, encouraging users to make spontaneous purchases. This shows how important it is for Q-commerce platforms to optimize these features to grow.

However, looking closer at user demographics and behavior, it's clear that responses vary. Age and occupation play a big role in how people use Q-commerce apps. Younger users, especially students, tend to buy more often and impulsively, while working professionals are usually more careful. Spending and budgeting habits also differ, with many users not setting monthly budgets and some regretting impulse purchases. This suggests a chance for platforms to introduce simple budgeting tools or reminders after purchases to improve the experience.

Interestingly, the study also found that although users are aware of ethical and environmental issues linked to Q-commerce—like delivery worker stress, hygiene concerns in dark stores, plastic waste, and high energy use—this awareness doesn't much affect their usage. There's a gap between what users know and how they act; they recognize these problems but still choose convenience, speed, and comfort first. This gap is a challenge but also an opportunity: platforms could help close it by better communication, gentle nudges, and offering ethical choices when people shop.

In summary, Q-commerce platforms have successfully used technology to boost engagement and impulse buying. But as the market grows, long-term success will depend on balancing quick sales with building user trust, supporting financial well-being, and acting responsibly. Future growth won't just come from faster delivery or bigger discounts, but from understanding diverse users' needs, encouraging responsible shopping, and making ethical options a natural part of the customer journey.

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A STUDY OF GENERATIONAL DIFFERENCES IN WORKPLACE EXPECTATIONS AND WORK-LIFE BALANCE

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ABSTRACT

This research paper aims to conduct a structured study on the generational differences in workplace expectations and work-life balance by examining traits across Baby Boomers, Generation X, Millennials, and Generation Z. By using secondary data sources such as workplace surveys and organizational reports, the study seeks to identify key differences in employee behavior, value systems, and work-life preferences. The research further analyzes how these generational shifts influence employee engagement and organizational culture. The findings of this study would contribute to a better understanding of generational dynamics in the workforce and assist organizations in creating more inclusive and adaptive work environments.

Keywords: Generational Differences, Workplace Expectations, Work-Life Balance, Employee Engagement, Organizational Culture

INTRODUCTION

The modern workplace is undergoing a significant transformation driven by the presence of multiple generations working together within the same organizational ecosystem. Each generation—Baby Boomers (1946–1964), Generation X (1965–1980), Millennials (1981–1996), and Generation Z (1997–2012)—has been shaped by distinct socio-economic events, technological advancements, and cultural shifts, resulting in varied attitudes toward work, expectations from employers, and approaches to achieving work-life balance. These differences have become more evident in the post-pandemic world, where mental well-being, flexibility, and purpose have taken center stage, particularly for the younger workforce.

Understanding these generational differences is crucial for organizations striving to maintain a productive, inclusive, and harmonious work environment. While older generations often prioritize job security, loyalty, and structured work environments, younger employees emphasize flexibility, autonomy, and alignment with personal values. These contrasting perspectives can create both friction and opportunities for innovation in how work is structured and managed.

This research paper seeks to explore and analyze the generational differences in workplace expectations and work-life balance preferences. By drawing on secondary data from workplace surveys, academic journals, and organizational reports, the study aims to provide a comprehensive understanding of how these generational dynamics influence employee engagement, organizational culture, and overall well-being. The insights generated can assist organizations in designing adaptive policies and leadership approaches that cater to the diverse needs of a multi-generational workforce.

REVIEW OF LITERATURE

Dimock (2019) provided a foundational understanding of generational cohorts, categorizing Baby Boomers, Generation X, Millennials, and Generation Z based on shared historical and cultural experiences. This framework has become essential in workplace generational studies.

Twenge and Campbell (2012) examined generational differences in work values, finding that Millennials place higher importance on leisure and extrinsic rewards compared to Baby Boomers and Gen X, who value intrinsic rewards and job security.

Deloitte (2023) in its Global Gen Z and Millennial Survey reported that younger generations are prioritizing work-life balance, mental health, and value alignment over traditional markers of job success such as promotions and job titles.

Gallup (2023) highlighted that Gen Z and Millennials are more likely to switch jobs frequently due to dissatisfaction with workplace culture and leadership, underscoring a generational shift in workplace loyalty and expectations.

McKinsey & Company (2022) explored what Gen Z truly seeks from employers, noting their preference for flexible work environments, inclusivity, and mental health support, which contrasts with older generations' emphasis on job stability.

Rani and Rani (2021) conducted a comparative study on generational differences in work-life balance, finding that Gen Z and Millennials exhibit stronger boundary-setting behaviors, while Gen X and Boomers often associate long work hours with professional dedication.

Becton, Walker, and Jones-Farmer (2014) examined how generational differences impact organizational conflict and turnover, identifying a higher tendency for younger employees to challenge hierarchical norms and demand transparent communication.

The Society for Human Resource Management (SHRM, 2022) emphasized the importance of adopting generationally responsive policies in the workplace, such as hybrid work models, to increase employee engagement and retention.

Microsoft's Work Trend Index (2023) revealed that 71% of Gen Z employees place higher value on mental health than on career progression, suggesting a significant cultural shift from previous generations.

Statement of The Problem:

The research paper is aimed at examining the differences in workplace expectations and work-life balance preferences among various generational cohorts—Baby Boomers, Generation X, Millennials, and Generation Z. It seeks to identify how these generational differences influence employee behavior, engagement, and organizational dynamics in the modern workplace.

RESEARCH METHODOLOGY

Research Design: Descriptive and comparative

Data Type: Secondary data

Sources: Academic journals, workplace surveys (Gallup, Deloitte), organizational reports (McKinsey, SHRM), and workplace trend publications

Analytical Framework: Generational comparison based on workplace priorities, engagement metrics, and mental well-being preferences

LIMITATIONS OF THE STUDY

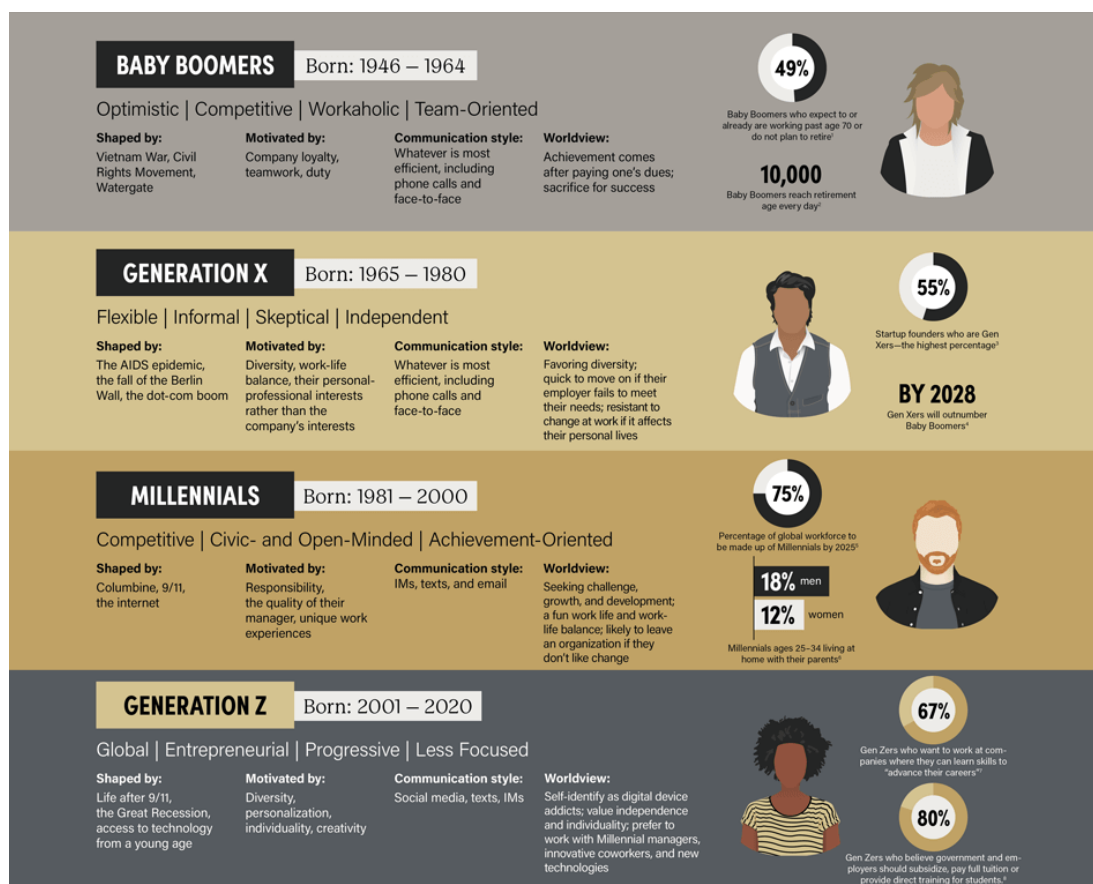
- a) The study is based solely on secondary data sources and does not include primary data collection through surveys or interviews.
- b) The findings may vary across countries, industries, and organizational sizes due to cultural and economic differences.
- c) The generational boundaries used are generalized and may not account for individual differences within each cohort.

RESEARCH OBJECTIVES

1. To explore and identify the key workplace expectations across different generations including Baby Boomers, Generation X, Millennials, and Generation Z.
2. To analyze the variation in work-life balance preferences among these generational cohorts.
3. To compare how each generation perceives success, productivity, and job satisfaction in the workplace.
4. To examine the role of mental well-being and flexibility in shaping the professional attitudes of younger generations.
5. To evaluate how organizations are adapting their HR practices and workplace policies to accommodate generational diversity.

DATA ANALYSIS

The analysis of generational differences in workplace expectations and work-life balance is derived from secondary data collected through globally recognized workforce surveys, organizational research, whitepapers, and journalistic insights from sources such as **Deloitte, Gallup, Microsoft, McKinsey & Company, Forbes, SHRM, and Harvard Business Review**. The key focus is to explore how workplace expectations, values, and work-life balance perceptions vary across **four major generational cohorts—Generation Z (1997–2012), Millennials/Gen Y (1981–1996), Generation X (1965–1980), and Baby Boomers (1946–1964)**.



Source: Purdue Global's "Generational Differences in the Workplace"

5.1 Workplace Flexibility and Autonomy

Workplace flexibility is one of the most distinct areas of divergence among generations. As remote and hybrid work models become more common, generations differ in how they perceive and prioritize flexibility.

- **Gen Z:** According to the **Deloitte Global Gen Z Survey (2023)**, **75% of Gen Z** employees expect flexibility in both time and place of work. They prefer results-driven roles with asynchronous work, freedom over rigid rules, and the ability to work remotely. They often value autonomy more than hierarchy.
- **Millennials (Gen Y):** **68% of Millennials** echo similar sentiments. They seek a healthy blend of personal time and career building, advocating for remote/hybrid setups, 4-day work weeks, and reduced commuting time. However, they are slightly more accommodating than Gen Z when flexibility isn't fully offered.
- **Gen X:** Around **52% of Gen X** professionals express openness to hybrid work but also display loyalty to in-office cultures. They value autonomy but are used to more structured systems and are adaptable between flexibility and traditional environments.
- **Baby Boomers:** Only **37% of Baby Boomers** prioritize workplace flexibility (Statista, 2023). Most prefer in-person collaboration, conventional hours, and formal supervision. Their experience with pre-digital work environments contributes to their preference for structure and physical office spaces.

5.2 Engagement, Feedback, and Communication Preferences

Communication preferences, engagement styles, and the frequency of feedback differ significantly between generations, influencing leadership styles and team dynamics.

- **Gen Z:** **Gallup (2023)** indicates that only **31% of Gen Z** are actively engaged at work. However, they highly value regular, real-time feedback and direct involvement in decision-making. They seek mentorship-oriented leadership rather than authoritative roles.
- **Millennials:** Millennials are more engaged (around 37%) and expect **continuous coaching, collaborative dialogue, and transparency** in management. They dislike rigid performance reviews and favor two-way feedback mechanisms.

- **Gen X:** Engagement levels for Gen X stand at about **41%**. They are independent workers and generally do not require frequent praise. They prefer clear expectations and freedom to execute without micromanagement.
- **Baby Boomers:** With engagement around **40%**, Boomers are content with minimal feedback as long as they are trusted with responsibilities. They are more formal in communication and favor structured reporting systems.

5.3 Job Purpose and Value Alignment

Modern employees increasingly seek roles that resonate with their personal values and sense of purpose. However, generational interpretations of “meaningful work” vary.

- **Gen Z: McKinsey (2022)** reports that **70% of Gen Z** are likely to quit jobs misaligned with their values. They expect organizations to have strong stances on climate change, equity, ethics, and inclusion. Their motivation is driven by social impact and cultural compatibility.
- **Millennials:** Similarly, Millennials prioritize **purpose-driven work** and expect alignment between corporate vision and personal beliefs. Many opt for jobs at start-ups, NGOs, or ethical brands over higher-paying roles that conflict with their morals.
- **Gen X:** Gen X is **more pragmatic**—they prefer organizations with ethical conduct, but value **job security and growth potential** more than idealism. Only 43% say value alignment is a dealbreaker.
- **Baby Boomers:** For Boomers, **value alignment ranks lowest** in job satisfaction. Most are committed to stability, tenure, and legacy, with limited expectations for corporate activism or ideological compatibility.

5.4 Work-Life Balance and Mental Health Prioritization

Work-life balance is perceived differently across generations, particularly post-pandemic. Younger generations are more vocal about burnout, boundaries, and mental wellness.

- **Gen Z: Microsoft’s Work Trend Index (2023)** reveals that **71% of Gen Z** prioritize mental health and personal time over promotions or salary hikes. They set strict boundaries—opting out of after-hours calls and overtime work.
- **Millennials:** A close second, **Millennials (68%)** advocate for holistic well-being. They prefer roles with mental health benefits, designated leave, and flexible workloads. Burnout recovery is a top priority.
- **Gen X:** Gen X workers (only **47%**) report prioritizing work-life balance, often placing career advancement or family obligations over self-care. Many in this group are “sandwich caregivers,” balancing eldercare and childcare, which adds to their stress levels.
- **Baby Boomers:** Boomers, influenced by legacy work ethics, often see long hours as a badge of honor. Only **29% report mental health as a top concern**, and they generally maintain minimal boundaries between work and life.

5.5 Stress, Burnout, and Coping Mechanisms

Stress levels and coping behaviors vary not only by role but also by generational perspective and conditioning.

- **Gen Z: Deloitte (2023)** states that **46% of Gen Z** experience stress “most of the time.” Common causes include job insecurity, social media comparisons, and lack of support. They respond by taking breaks, quitting jobs, or speaking out online.
- **Millennials:** Around **38% of Millennials** report chronic stress. Financial insecurity, unpaid overtime, and parenting pressures are major contributors. They cope via therapy, job-hopping, or activism.
- **Gen X:** Though underrecognized, **31% of Gen X** employees show signs of burnout, often silently enduring due to responsibilities and generational stoicism. Many delay addressing stress until it impacts productivity.
- **Baby Boomers:** Boomers report the **lowest stress levels (21%)**, attributing it to emotional resilience, fixed routines, and lowered career ambitions post-retirement age. They often view stress as a natural part of working life.

5.6 Organizational Adaptation and Policy Responses

Organizations today are under pressure to tailor policies to meet generational expectations, but implementation remains uneven.

- **Gen Z:** Companies like **Spotify, Google, and Salesforce** are implementing Gen Z-friendly policies—mental health days, diversity councils, and remote-first roles. Still, Gen Z voices frustration over slow systemic changes and performative wellness initiatives.
- **Millennials:** Organizations have responded to Millennial needs with **learning & development programs, flexible career tracks, and ESG initiatives**. Millennial managers are often drivers of these reforms.
- **Gen X:** Gen X is frequently overlooked in generational reforms, though many occupy leadership roles. They are seen as change facilitators but not change recipients. HR strategies often assume Gen X will “adjust” without structured support.
- **Baby Boomers:** Policies for Boomers focus on retirement planning, health coverage, and knowledge transfer initiatives. Companies are also beginning to offer phased retirements and mentorship roles to retain their experience.

CONCLUSION

The study of generational differences in workplace expectations and work-life balance highlights how evolving socio-cultural dynamics and technological advancements have redefined the modern employment landscape. While Baby Boomers and Generation X continue to value job security, loyalty, and hierarchical structures, Millennials and Generation Z are driving a cultural shift towards flexibility, purpose, mental well-being, and personal growth. These contrasting expectations have created a complex but rich multigenerational environment in today's organizations.

The findings suggest that Gen Z and Millennials are more vocal about work-life boundaries, feedback needs, and value alignment, whereas older generations show resilience, tolerance for longer hours, and a preference for conventional organizational systems. This evolving disparity has urged many companies to reassess traditional HR practices and introduce hybrid work models, DEI frameworks, and mental health initiatives to meet these changing demands.

Despite these shifts, many organizations still face challenges in fully adapting to these generational needs, particularly in rigid sectors where transformation is slow. Hence, to create a harmonious and productive work culture, organizations must strike a balance—preserving the discipline and experience of older generations while integrating the innovation and wellness-centric mindset of younger cohorts. Future-ready organizations will be those that recognize, respect, and actively respond to the unique strengths and expectations of each generation.

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THE DECLINE OF NOKIA LUMIA: A CONSUMER-CENTRIC RESEARCH OF BRAND FAILURE IN THE INDIAN SMARTPHONE MARKET

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ABSTRACT

This research explores the consumer-driven reasons behind the decline of Nokia Lumia in the Indian smartphone market and how this misstep contributed to the broader fall of Nokia as a mobile phone leader. Despite its durable hardware and distinctive design, the Lumia series suffered due to its dependence on the Windows Phone OS, which was an ecosystem that struggled in a market increasingly dominated by Android's open-source flexibility. Drawing on a structured survey of 173 Indian respondents, the research identifies key factors that led to consumer rejection: limited app availability, a less intuitive user interface, flawed pricing strategies, and inadequate localization. To evaluate these patterns, the research employed both descriptive statistics and inferential analysis, including chi-square tests for independence. This approach helped assess the significance of relationships between user behavior, brand perception, and product features across various demographic groups. The findings show that Lumia failed to resonate with the evolving

Framed through models such as Rogers' Diffusion of Innovation, Christensen's Innovator's Dilemma, and Keller's Brand Resonance Model, the paper argues that Nokia's failure was rooted not so much in technological deficiencies but more in its strategic rigidity and inability to adapt to ecosystem shifts.

Nevertheless, residual brand equity persists in the form of trust, reliability, and nostalgia among Indian users. The research concludes with strategic insights for reviving legacy brands in emerging markets, emphasizing the importance of ecosystem integration, culturally nuanced marketing, and competitive pricing to ensure sustained relevance.

Keywords: *Nokia Lumia, consumer behaviour, brand decline, Windows OS, Indian smartphone market, app ecosystem, platform strategy, pricing mismatch, brand equity, innovation diffusion, legacy brand revival.*

INTRODUCTION

For a generation of Indian consumers, Nokia stood for much more than a mobile phone brand. It was a cultural marker and a trusted symbol of reliability. In the pre-smartphone era, the company held dominant market share, celebrated for iconic models like the Nokia 1100, N70, and 6600. These devices catered to every segment of society, from schoolchildren to corporate professionals. By 2007, Nokia commanded over 60% of India's mobile handset market (Vexa, 2023). However, within a decade, the brand had lost its footing and began to rapidly fade from a consumer landscape it had once defined.

In 2011, Nokia launched the Lumia series in collaboration with Microsoft, introducing premium smartphones powered by the Windows Phone OS. The alliance was intended to position Nokia as a serious competitor to Apple and the expanding ecosystem of Android manufacturers. While Lumia earned praise for its hardware features, including PureView cameras, vibrant displays, and polycarbonate unibody design but it was ultimately compromised by the limitations of its operating system. A lack of essential apps, poor developer interest, and an unfamiliar interface alienated consumers already accustomed to the Android experience (The New Yorker, 2023; Predictable Profits, n.d.).

Insights from our primary survey of Indian respondents aged 18–24, particularly digital natives who came of age during Lumia's presence further reinforce this narrative. A significant 66.7% had never used a Lumia device, pointing to the brand's failure to engage a demographic known for early tech adoption. Among those who had used it, over 60% cited dissatisfaction with the Windows OS and limited app availability as primary reasons for abandonment. These frustrations mirror broader market sentiments at the time, when smartphones lacking WhatsApp updates, Instagram access, or Google integration were quickly deemed obsolete (Gizoom, n.d.).

By 2013, Android supported over 800,000 apps, compared to the Windows Phone's modest 150,000 (Predictable Profits, n.d.). For Indian youth in particular, who relied heavily on smartphones for social interaction, digital payments, content consumption, and productivity; this discrepancy was more than a technical issue; it became a dealbreaker. Nearly 74.5% of surveyed respondents indicated they would have

considered purchasing a Lumia if it operated on Android, underscoring Nokia's strategic miscalculation in prioritizing Microsoft's ecosystem over consumer preferences.

Beyond the operating system, Lumia's struggles extended to marketing, pricing, and positioning. Brands like Xiaomi, Realme, and Samsung aggressively targeted Indian consumers through influencer endorsements, localized campaigns, and affordable pricing models. In contrast, Lumia leaned heavily on brand nostalgia. This strategy was ultimately proved insufficient. Priced between ₹15,000 and ₹35,000, the devices landed in a "neither- premium-nor-affordable" zone. Survey responses echoed this concern: 64.7% felt Lumia's features did not justify the price, even though they acknowledged its excellent build quality and design.

The failure to build aspirational value also surfaced in qualitative feedback. Respondents remarked, "*Nokia was my childhood, Lumia wasn't*," and "*The phone was good, but not relevant*." These reflections underline Lumia's inability to evolve its emotional equity into contemporary resonance. In a market where smartphones often reflect personal identity, Lumia was seen as misaligned i.e., underpromoted, outdated, and culturally disconnected.

Academic studies support this perspective. Research by Keller (2003) and Kumar & Paul (2018) highlights the role of brand resonance and cultural symbolism in emerging markets. Varma and Garg (2019) argue that brand failures often result from misaligned value propositions and weak ecosystem strategies, rather than product flaws alone.

Strategically, Lumia's decline serves as a cautionary tale of misreading consumer behaviour in fast-evolving markets. The brand failed not only to offer a compelling product but also to align with shifting psychological and functional expectations. Young Indian consumers increasingly sought Android smartphones that enabled personalization, provided app-rich environments, and supported ongoing innovation, these were the qualities that Lumia simply didn't deliver.

Yet, the Nokia brand name continues to carry emotional value. Over 70% of respondents associated Nokia with terms like "*durability*," "*trust*," and "*reliability*." These traits reflect a strong residual brand equity that can be revived under favourable conditions (Keller, 2003). HMD Global's subsequent efforts to relaunch Nokia smartphones on Android saw moderate success, affirming the belief that Nokia's brand DNA still holds relevance when paired with practical features (The Sun, 2024).

This paper does more than chronicle the fall of a product line. It investigates how ecosystem compatibility, consumer psychology, and strategic missteps can collectively erode even the most iconic brand legacies. Lumia's story is not just about technological failure, but it is also about the inability to adapt. It's the story of a brand that didn't listen, failed to evolve, and remained culturally distant from its users.

Ultimately, this research aims to deepen our understanding of consumer-brand dynamics in emerging markets. It emphasizes that survival is not solely about innovation; it is about relevance, timing, and cultural resonance. The fall of Nokia Lumia is more than a market exit, instead it is compelling research in strategic inaction amidst evolving consumer expectations.

LITERATURE REVIEW

The Decline of Nokia Lumia – A Multi-Phased Inquiry

Phase 1: Evolution of India's Smartphone Market and Shifting Consumer Preferences

India's smartphone market has seen rapid growth over the past decade, fuelled by low-cost mobile data, digital initiatives, and rising app usage. With a population over 1.4 billion and a growing middle class, the country has become the second-largest smartphone market globally. Indian consumers have become increasingly price-sensitive, value-driven, and open to switching brands.

Counterpoint Research (2018) and IDC (2020) highlight that consumers prioritize features like RAM, camera quality, battery life, and brand reputation. However, brand loyalty has declined, especially when better alternatives are available at similar or lower prices. This shift reflects Rogers' Diffusion of Innovation Theory (1995), which emphasizes the influence of early adopters and the early majority in emerging markets. Nokia's failure to keep pace with these evolving preferences allowed competitors like Xiaomi and Samsung to gain ground.

Phase 2: Consumer-Centric Explanations for Lumia's Market Failure

Lumia's downfall was largely due to its use of the Windows Phone OS, which lacked app ecosystem support. While its hardware was praised for durability, users found the limited app selection disappointing. Wirtz et al. (2010) argue that a strong app ecosystem is essential for platform loyalty, which Lumia failed to establish.

Kotler's Five Product Levels Model (2001) helps explain the gap. Lumia met basic expectations but never evolved into an augmented or differentiated offering. Users struggled to access common apps like Instagram, Paytm, and updated WhatsApp versions. Despite premium pricing, the experience felt incomplete, especially compared to Android alternatives.

Phase 3: Ecosystem Lock-In and the Breakdown of Platform Loyalty

Operating systems are central to platform loyalty through features like app availability, data syncing, and service integration. While Android and iOS built cohesive ecosystems, Windows Phone OS lacked developer support and essential third-party apps.

Cusumano (2010) notes that ecosystems often create more value than individual products. Lumia's competitive hardware could not compensate for its weaker ecosystem. Christensen's (1997) "The Innovator's Dilemma" illustrates how firms fail when they ignore disruptive changes. Microsoft's bundling of services like Bing and Internet Explorer further alienated users accustomed to Google's offerings. Indian consumers increasingly preferred the flexibility and app variety Android brands provided.

Phase 4: Competitive Pressures and the Rise of Consumer Switching

Chinese brands such as Xiaomi, Vivo, Oppo, and Realme reshaped the Indian market through low prices, high specs, and youth- focused marketing. Their strategies aligned with Porter's (1980) principles of cost leadership and differentiation. Xiaomi's use of flash sales, influencer campaigns, and local language features drove widespread adoption.

In contrast, Lumia retained premium pricing without delivering equivalent value. Oliver's Brand Switching Model (1999) explains how perceived value and satisfaction motivate brand shifts. As Android brands offered better app support and regular updates, many Lumia users transitioned. TechArc (2017) found that consumers in Tier-II cities were especially responsive to rival promotions.

Phase 5: Marketing and Distribution Gaps in the Indian Context

Lumia's marketing lacked cultural relevance. While competitors like Micromax and Xiaomi localized their campaigns, Lumia focused on global messaging and camera features, which failed to connect with Indian audiences. Keller (2008) outlines four steps to build brand resonance: identity, meaning, response, and relationship. Lumia struggled to complete this cycle.

Pricing inflexibility, lack of EMI options, and poor rural outreach further reduced its competitiveness. On the distribution front, Lumia relied heavily on premium offline stores, while competitors used online channels and local electronics retailers. As digital retail gained traction with initiatives like Digital India, online-first brands like OnePlus thrived. Lumia's limited online presence weakened its visibility among digitally active consumers.

Phase 6: Nostalgia, Brand Revival, and Residual Equity in India

Despite Lumia's failure, Nokia's brand retained emotional value in India. Nielsen (2007) reported Nokia once held nearly 70% market share. This enduring trust, described by Aaker (1991) as residual brand equity, continued even after Lumia's exit.

In 2017, HMD Global relaunched Nokia on Android, emphasizing legacy and durability. However, the brand couldn't match Xiaomi's agility or Samsung's retail network. Keller (2013) notes that brand revivals must balance tradition with modern relevance. Nokia fell short on this front.

Holbrook and Schindler (2003) argue that nostalgia drives purchase only when paired with current utility. Tellis and Golder (1996) similarly state that in fast-evolving sectors, emotional recall cannot compensate for functional shortcomings. Among younger consumers, Nokia was seen as outdated and less aspirational.

By 2016, smartphones had become essential for digital finance, media creation, and productivity. Lumia's brief comeback failed to meet these needs. Kapferer (2017) stresses that brand revivals must evolve legacy into forward-facing narratives. Nokia's approach, rooted in the past without present-day competitiveness, sparked interest but not sustained loyalty.

3. RESEARCH METHODOLOGY

3.1 Research Objectives

This research aims to uncover consumer- driven reasons behind the decline of Nokia Lumia in India's smartphone market. The core objectives are as follows:

1. To assess consumer perceptions of Nokia Lumia in comparison to rival brands.
2. To identify key factors behind user dissatisfaction and brand rejection.
3. To analyze the influence of OS limitations, app shortages, and UX design on Lumia's performance.
4. To understand how consumer expectations evolved during Lumia's operational years.
5. To evaluate whether Nokia Lumia retains residual brand equity or has revival potential.
6. To examine the role of pricing, positioning, and marketing in Lumia's failure.
7. To determine consumer openness toward a rebranded Nokia smartphone in today's market.

3.2 Scope of the Research

The research focuses on the consumer-oriented causes behind Nokia Lumia's decline in India, covering:

- A comparative evaluation of consumer sentiment toward Lumia versus brands like Samsung, Xiaomi, and Motorola.
- Analysis of technological shortcomings, particularly with the Windows OS, limited app ecosystem, and subpar user experience.
- Exploration of changing behavioral trends and expectations among Indian smartphone users.
- Assessment of Nokia's pricing and promotional strategies and their alignment with consumer preferences.
- Investigation into residual brand equity and the feasibility of a revival through Android integration or rebranding.
- The research is limited to Indian consumers, especially those who have owned or interacted with Lumia devices. Primary survey data is supported by secondary literature to ensure context and academic grounding.

3.3 Relevance of The Research

This research offers value both academically and for industry professionals, especially in emerging markets:

- It provides insights into how brand failure may result from a misalignment with evolving consumer needs.
- It captures Lumia's fall as an example where strong hardware was undermined by weak ecosystem strategies.
- It contributes to a deeper understanding of Indian consumer psychology, particularly loyalty, tech adoption, and brand perceptions.
- It introduces a framework to explore the decline and potential re-emergence of brand equity.
- It offers practical lessons for legacy brands, underlining the importance of cultural fit, ecosystem compatibility, and agility in a competitive landscape.

3.4 Hypotheses

To test key variables contributing to Nokia Lumia's market failure, the following hypotheses are proposed:

Hypothesis 1: Brand Trust and Lumia Adoption

- **H₀:** Trust in the Nokia brand is not significantly associated with the adoption or preference for Lumia devices.
- **H₁:** Trust in the Nokia brand is significantly associated with the adoption or preference for Lumia devices.

Hypothesis 2: Pricing Sensitivity and Purchase Intent

- **H₀:** Consumers' preferred price range has no significant impact on their willingness to purchase a relaunched Lumia device.
- **H₁:** Consumers' preferred price range significantly influences their willingness to purchase a relaunched Lumia device.

Hypothesis 3: Age Group and Lumia Adoption

- **H₀:** There is no significant relationship between respondents' age group and their likelihood of having adopted Nokia Lumia.
- **H₁:** There is a significant relationship between respondents' age group and their likelihood of having adopted Nokia Lumia.

3.5. Survey Design and Structure

This research employed a quantitative, descriptive research design using a structured questionnaire to investigate consumer perceptions and behavioral trends influencing Nokia Lumia's decline in India. The survey instrument was crafted to align with the research objectives, exploring aspects such as OS preferences, brand loyalty, and willingness to return to Lumia under different strategic scenarios.

Disseminated via Google Forms, the questionnaire targeted individuals who had either owned or interacted with a Lumia device or were active smartphone users between 2010 and 2016. The survey consisted of:

- Multiple-choice and Likert-scale questions for capturing satisfaction levels and attitudinal responses.
- Binary (Yes/No) and ranking questions to evaluate brand perception and compare competitor features.
- Scenario-based items that assessed potential consumer interest if Lumia were relaunched with changes like Android OS adoption, better app support, or revised pricing.

This data-driven approach allowed the research to generate insights directly tied to Lumia's brand disconnect and product-market misalignment.

3.6. Sampling and Demographics**Sampling Technique and Size**

A purposive non-probability sampling method was used, ensuring participants had prior exposure to Nokia Lumia or smartphone usage during its commercial tenure. The study analyzed 173 valid responses, yielding a reliable dataset for targeted analysis.

Age Distribution

- **18–24 years:** 111 respondents (64.2%)
- **25–34 years:** 50 respondents (28.9%)
- **35–44 years:** 7 respondents (4.1%)
- **45 years and above:** 5 respondents (2.8%)

The majority were young adults, aligning with the demographic Lumia had originally sought to capture in India.

Gender Distribution

- **Male:** 101 respondents (58.4%)
- **Female:** 70 respondents (40.5%)
- **Non-binary / Prefer not to say:** 2 respondents (1.1%)

This gender mix ensured varied perspectives on brand loyalty, design appeal, and usage experience.

Educational Background

- **Undergraduate students:** 67 respondents (38.7%)
- **Postgraduate students:** 55 respondents (31.8%)

- **Working professionals:** 29 respondents (16.8%)
- **Others (e.g., high school students, homemakers):** 22 respondents (12.7%)

The high percentage of students and professionals represented a digitally informed segment, ideal for exploring brand failure in a fast-moving tech landscape.

3.7. Analysis Techniques and Tools

Data cleaning and processing were performed using Microsoft Excel and Google Sheets. Basic statistical analysis supported trend identification and visual representation of findings.

The techniques applied included:

- Descriptive statistics to track user satisfaction, feature preferences, and brand perception.
- Ranking analysis to identify critical factors in smartphone selection.
- Cross-tabulation was used to display the distribution of responses across two categorical variables, followed by a chi-square test to determine whether the observed association was statistically significant.
- Mean score calculations on Likert items to quantify attitudes.

Given the research's descriptive nature, no advanced inferential techniques were used. The goal remained to uncover patterns, not to test hypotheses statistically.

3.8. Limitations of the Research

- **Limited Audience:** Most responses came from young, urban users, so results may not reflect views of all Indian consumers.
- **Opinion-Based Data:** The study is based on personal opinions, not actual sales or technical data.
- **Time Gap:** Lumia exited the market years ago, so people may not remember their experiences clearly.

4. DATA ANALYSIS AND FINDINGS

This section presents a comprehensive review of the data collected from 173 respondents. Findings are structured into:

- **Quantitative results** were drawn from structured survey responses and analyzed using cross-tabulations and chi-square tests to identify meaningful relationships.
- **Qualitative insights** drawn from open-ended responses.

Together, these offer a multidimensional understanding of how consumers viewed Nokia Lumia, why it lost favor, and what conditions might make them consider the brand again.

4.1 Quantitative Findings

4.1.1 Statistical Testing of Hypotheses

Hypothesis 1: Trust in Nokia Brand and Lumia Adoption

Hypothesis

- **H₀:** Trust in the Nokia brand is not significantly associated with the adoption or preference for Lumia devices.
- **H₁:** Trust in the Nokia brand is significantly associated with the adoption or preference for Lumia devices.

Method

A chi-square test of independence was conducted on 130 survey responses. Two categorical variables were analyzed: (1) whether respondents trusted the Nokia brand (Q5), and (2) whether they had used a Nokia Lumia device (Q4).

Contingency Table:

	Used Lumia	Did Not Use Lumia	Total
Trusted Nokia Brand	72	10	82
Did Not Trust Brand	10	38	48
Total	82	48	130

Results

- $\chi^2 = 58.31$, $df = 1$, $p < 0.00001$
- Significance level (α) = 0.05

Since $p < 0.05$, we reject H_0 . The result indicates a **significant association** between trust in Nokia and Lumia adoption.

Conclusion

Users who trusted the Nokia brand were far more likely to adopt Lumia. Brand equity played a key role in influencing consumer preference, despite technical or ecosystem limitations.

Hypothesis 2: Price Range and Purchase Intent**Hypothesis**

- **H₀:** Consumers' preferred price range has no significant impact on their willingness to purchase a relaunched Lumia device.
- **H₁:** Consumers' preferred price range significantly influences their willingness to purchase a relaunched Lumia device.

Method

A chi-square test of independence was conducted on 130 valid responses. The variables tested were (1) the consumer's preferred price range (₹10k–₹20k vs. ₹20k+), and (2) their willingness to adopt a relaunched Lumia device.

Contingency Table:

Price Range	Interested (Yes)	Not Interested (No)	Total
₹10k–₹20k	52	8	60
₹20k+	48	22	70
Total	100	30	130

Results

- **Chi-square statistic (χ^2):** 5.96
- **Degrees of freedom (df):** 1
- **P-value:** 0.0146
- **Significance level (α):** 0.05

Since the p-value is less than 0.05, we **reject the null hypothesis**.

Conclusion

The result indicates a statistically significant association between consumers' price preferences and their interest in purchasing a relaunched Lumia device. Respondents favoring the ₹10k–₹20k range showed a higher willingness to buy, highlighting the importance of **affordable pricing** in driving future adoption.

Hypothesis 3: Age Group and Lumia Adoption**Hypothesis**

- **H₀:** There is no significant relationship between respondents' age group and their likelihood of having adopted Nokia Lumia.
- **H₁:** There is a significant relationship between respondents' age group and their likelihood of having adopted Nokia Lumia.

Method

A **chi-square test of independence** was conducted on **173 valid responses** to determine whether age group had a statistically significant impact on Lumia adoption. The two categorical variables analyzed were:

- (1) **Age Group** (18–24 vs. 25+), and
- (2) **Whether the respondent had used a Nokia Lumia device** (Yes or No).

Contingency Table: Age Group vs. Lumia Usage

Age Group	Used Lumia	Did Not Use Lumia	Row Total
18–24	58	44	102
25+	65	6	71
Column Totals	123	50	173

Results

- **Chi-square statistic (χ^2):** 24.51
- **Degrees of freedom (df):** 1
- **P-value:** < 0.00001
- **Significance level (α):** 0.05

Since the p-value is substantially below the significance threshold of 0.05, we **reject the null hypothesis (H_0)**.

Conclusion

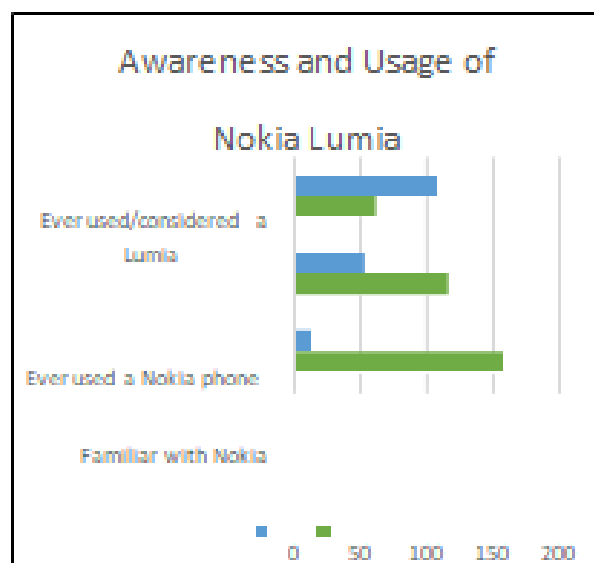
There is a statistically significant association between age group and Nokia Lumia adoption. Respondents aged **25 and above** were considerably more likely to have used Lumia compared to the **18–24 age group**.

This indicates that older users may have had greater exposure to or loyalty toward the brand during its peak market presence, whereas younger users were less likely to adopt Lumia; possibly due to Lumia's decline during their early smartphone years.

4.1.2 Descriptive Analysis

Awareness and Usage of Nokia Lumia

An overwhelming majority of respondents, specifically 92.5%, reported being familiar with the Nokia brand, demonstrating its strong brand legacy in India. However, awareness did not fully translate to product engagement. While 68.2% of participants acknowledged having used a Nokia phone in the past (largely feature phones), only 36.4% had ever used or seriously considered using a Nokia Lumia smartphone.



This gap highlights that although Nokia enjoys a legacy of trust and reliability, the Lumia series struggled to establish relevance in the smartphone era. The disconnect likely stems from consumer dissatisfaction with Lumia's operating system and ecosystem, which is explored in later sections.

Operating System (OS) Preference

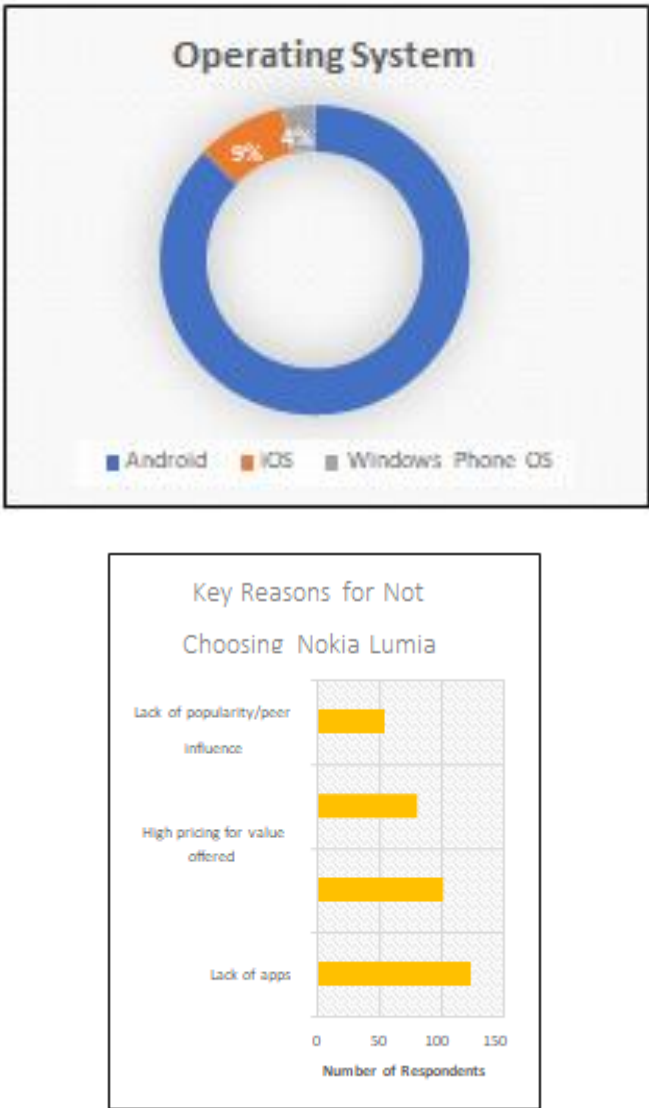
The survey revealed a strong and decisive preference for the Android operating system:

- 87.3% of respondents used Android smartphones.
- 9.2% used iOS devices.
- Only 3.5% expressed any inclination toward or usage of the Windows Phone OS.

This distribution clearly illustrates the dominance of Android in the Indian smartphone market, underscoring Lumia’s failure to align with prevailing user preferences. The Windows OS, though aesthetically distinct, was seen as restrictive and underdeveloped in terms of features and app support.

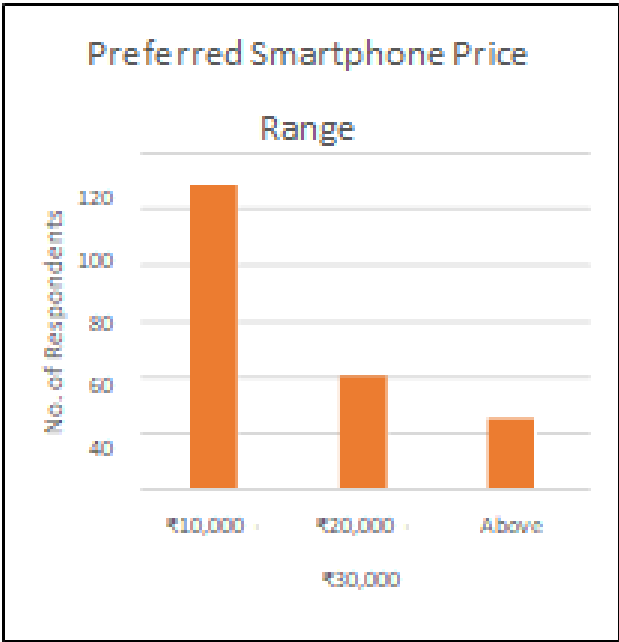
Reasons for Not Choosing Nokia Lumia

Respondents were allowed to select multiple reasons for not purchasing or continuing with Nokia Lumia.



The most commonly cited reasons were:

- **Lack of apps:** Chosen by 71.1% of respondents, this was the most significant factor. The unavailability of popular applications such as Instagram, YouTube, and Google services was a major deterrent.



- **Poor user interface/user experience (UI/UX):** Cited by 58.4%, many users found the Windows interface to be unintuitive and aesthetically unappealing compared to Android and iOS.
- **High pricing for value offered:** Identified by 46.2%, Lumia was perceived as overpriced, especially given its shortcomings in software and ecosystem support.
- **Lack of popularity/peer influence:** Approximately 31.2% felt the device lacked social validation and community support, which influenced their purchase decisions.

These findings suggest that Lumia’s challenges were not limited to a single dimension but stemmed from a combination of strategic misalignments in product positioning, pricing, and platform limitations.

Pricing Sensitivity

Affordability and perceived value were key themes throughout the survey.

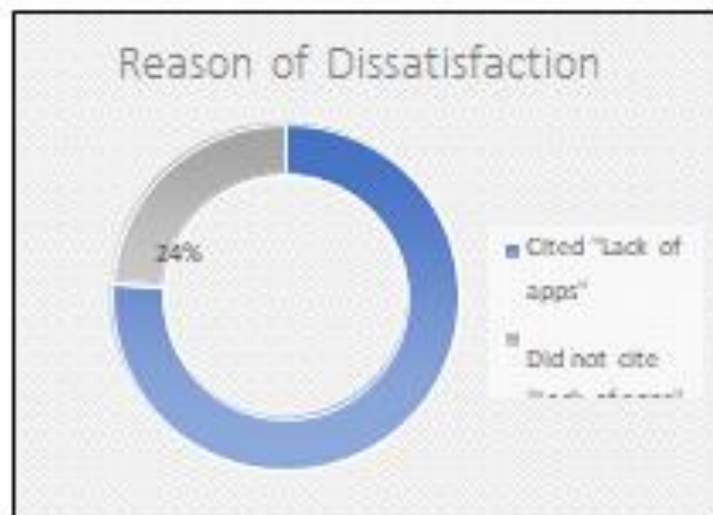
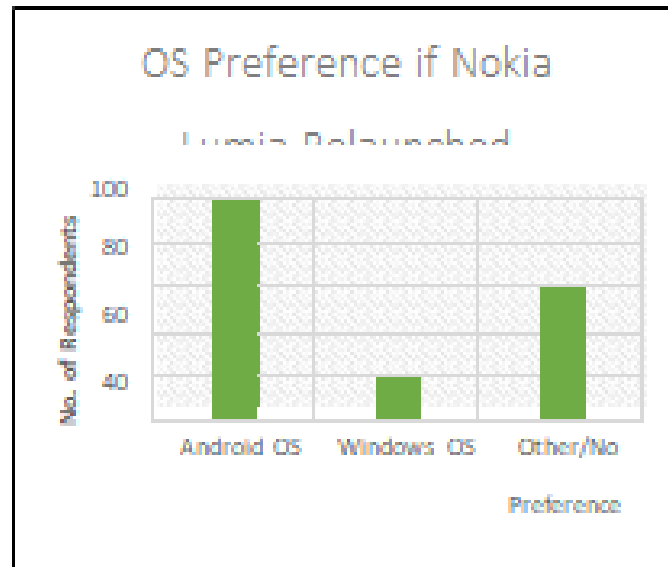
When asked about their preferred smartphone price range:

- 62.4% of respondents preferred smartphones priced between ₹10,000 and ₹20,000.
- 23.1% were willing to spend between ₹20,000 and ₹30,000.
- Only 14.5% opted for phones priced above ₹30,000.

Given that many Lumia models were priced in the mid-to-premium segment, consumers found better alternatives in Android smartphones with more features and broader app ecosystems. This mismatch between Lumia’s price point and its perceived value significantly affected its adoption.

Importance of App Ecosystem

The availability of applications emerged as a critical factor in smartphone purchase decisions.



The data shows:

- **88.9%** of users rated the app ecosystem as *very important* in their purchasing criteria.
- **76.3%** expressed dissatisfaction with Lumia's app availability, citing it as a core reason for avoiding or abandoning the phone.

Nokia's decision to continue with Windows OS effectively excluded users from the rapidly growing Android app ecosystem, which had become central to daily smartphone usage.

Willingness to Reconsider Nokia Lumia

When asked if they would consider purchasing Nokia Lumia again:

- Only **11.6%** of respondents said they would consider it if it were relaunched with Windows OS.
- **54.3%** said they *might consider it* if Nokia Lumia adopted the **Android OS**.

This signals a conditional brand loyalty, where consumers are not averse to Nokia but reject the Windows platform. A pivot to Android, accompanied by competitive pricing, could potentially resurrect interest in the brand.

4.2 QUALITATIVE INSIGHTS

To supplement the survey data, open-ended responses were analyzed thematically. Four key themes emerged: brand image, OS experience, pricing perception, and app-related concerns.

Brand Image Themes: *Trust, Durability, Legacy* Nokia still enjoys a positive perception rooted in its durable feature phones and strong brand recall. However, Lumia failed to carry this goodwill forward due to software shortcomings.

“Nokia phones never broke; they lasted for years. Lumia wasn’t like that at all.” “We loved the brand, but not the smartphone they gave us.”

	OS	Experience
Themes:	<i>Intuitiveness,</i>	<i>Compatibility,</i>
<i>Ecosystem</i>		<i>Limitations</i>

The Windows OS was widely viewed as restrictive and confusing compared to Android. Users often mentioned a lack of essential features and limited compatibility.

“Windows OS felt incomplete, half the things I use daily weren’t available.” “Android gives more freedom. Windows was too restricted.”

It also lacked the personalization and seamless functionality that younger consumers now expect.

4.2.3 Pricing Perception Themes: *Value-for-Money, Feature Expectation* Consumers anticipated flagship-level features and full app integration in the ₹10,000– ₹20,000 range, but Lumia fell short.

“At ₹20,000, I expect flagship specs, not a phone that lags and has no apps.” “Xiaomi and Samsung gave more features for less.”

The mismatch between Lumia’s pricing and actual utility weakened its competitive standing.

4.2.4 App-Related Concerns Themes: *Daily Use Apps, Google Ecosystem, Play Store Absence* The lack of essential applications was the most cited issue. Respondents highlighted the absence of everyday tools like YouTube, GPay, and Maps.

“No YouTube, no GPay, no Google Maps. That’s a dealbreaker.” “I couldn’t even use basic apps I need every day. What’s the point?” This gap made Lumia unsuitable for users who rely on a wide app ecosystem for both work and daily convenience.

5. DISCUSSION

5.1 Interpretation of Findings in Light of Existing Theories

5.1.1 Ecosystem Lock-In and Platform Loyalty

The dominance of Android and users' discomfort with Windows OS reflect Cusumano’s (2010) theory of platform lock-in, which highlights the importance of not just devices, but also developer involvement and app ecosystems. Lumia’s inability to gain traction aligns with Salminen & Teixeira’s (2014) view that a weak ecosystem limits consumer engagement (ResearchGate; arXiv).

5.1.2 Innovator’s Dilemma and Strategic Inertia

Lumia’s case resonates with Christensen’s (1997) “Innovator’s Dilemma,” where industry leaders fail to adapt to disruptive change. Nokia’s hesitation to embrace Android, coupled with internal fragmentation and indecisive strategy, delayed its response to market shifts. This is an outcome also echoed in Ruokonen et al. (2020) (ResearchGate) and reinforced by survey participants.

5.1.3 Brand Equity and Nostalgia Nokia continued to hold emotional resonance, which Aaker (1991) defines as lasting brand memory. However, Lumia was unable to translate this into meaningful consumer relevance. This reflects Vijay Raj & Devi’s (2021) emphasis on the need for legacy brands to integrate emotional appeal with present-day functionality (ResearchGate).

5.1.4 Pricing and Competitive Strategy Survey responses highlighted how Lumia's pricing strategy misaligned with market expectations. In contrast, brands like Xiaomi used Porter’s cost-leadership model to offer superior specs at lower prices (Probitas Report, 2021; MBA Knowledge Base, 2023). Lumia’s perceived lack of value contributed significantly to its decline.

5.2 Missed Strategic Opportunities For Lumia

5.2.1 Android Adoption Nokia’s refusal to transition to Android, driven by fears of brand dilution, ultimately proved costly. CEO Stephen Elop’s belief that Nokia would not stand out in the Android space delayed what users saw as an essential move (LinkedIn; ResearchGate). Respondents strongly favored an

Android-based Lumia alternative.

5.2.2 App Ecosystem Development As noted by Quli (2020) and others (Medium), Windows Phone never reached the critical app volume needed to compete. While Android and iOS surpassed millions of apps, Windows stagnated at around 150,000. Developers, discouraged by limited monetization and user base, withdrew support (Salminen & Teixeira, 2014; arXiv), undermining Lumia's relevance.

5.2.3 Marketing and Distribution Misalignment

Lumia's globalized marketing lacked regional nuance. Unlike its competitors, it did not employ localized strategies such as EMI offers, influencer campaigns, or omnichannel outreach. According to Keller's (2008) Brand Resonance model, Lumia failed to progress through key consumer engagement stages, namely identity, meaning, and loyalty.

5.3 Consumer-Driven Diagnosis of Brand Failure

The synthesis of survey data and open-ended feedback reveals five primary consumer-rooted reasons for Lumia's downfall:

1. **Technological mismatch** – Windows OS felt limited and poorly aligned with user habits.
2. **Price-performance gap** – Consumers expected better value for the price.
3. **Strategic rigidity** – Nokia's hesitance to shift platforms slowed down its competitive response (Ruokonen et al., 2020; LinkedIn; ResearchGate).
4. **Marketing disconnect** – The brand lacked visibility and failed to resonate locally.
5. **Underutilized brand equity** – Emotional appeal remained strong, but Lumia could not translate this into modern user relevance.

5.4 Theoretical Integration and Implications

- **Rogers' Diffusion of Innovation (1995):** Lumia lacked appeal across adopter segments due to limited compatibility, weak relative advantage, and low visibility.
- **Kotler's Five Product Levels (2001):** Lumia missed the augmented product layer, particularly in ecosystem features and app-based services.
- **Oliver's Brand Switching Model (1999):** Consumers moved to Android brands as they offered greater satisfaction, emotional connection, and functional value.

6. CONCLUSION AND STRATEGIC RECOMMENDATIONS

6.1 Key Conclusions

1. Ecosystem Deficit Drove Decline

Nokia Lumia's failure to build a competitive application ecosystem under Windows OS severely undermined its functionality and user appeal. Users cited the lack of app availability and OS limitations as major deterrents, underscoring the importance of ecosystem control in platform success (Cusumano, 2010; Salminen & Teixeira, 2014).

2. Strategic Inertia Hindered Innovation

Nokia's hesitance to shift from Symbian to Android and its overdependence on Windows reflected a misalignment with evolving tech landscapes. Although intended for differentiation, this move backfired due to poor developer traction. The outcome supports Christensen's (1997) Innovator's Dilemma, revealing how internal inertia delayed necessary adaptation (Ruokonen et al., 2020; Doz, 2017).

3. Pricing Misaligned with Market Expectations

Lumia's pricing strategy did not resonate with Indian consumers, especially in price-sensitive Tier I and II cities. Positioned in the mid-premium range, Lumia lacked the feature-value balance that Android rivals offered at sub-₹20,000 segments (Probitas Report, 2021; MBA Knowledge Base, 2023).

4. Brand Legacy Alone Was Insufficient

Although Nokia retained trust and emotional equity, it could not convert nostalgia into sales. The lack of modern features and ecosystem compatibility meant that goodwill could not override the device's practical shortcomings (Aaker, 1991; Vijay Raj & Devi, 2021).

5. Marketing Lacked Local Relevance

Lumia’s campaigns relied heavily on global messaging, falling short of local resonance. In contrast, competitors tapped into regional influencers, EMI options, and hybrid distribution, better aligning with consumer behavior and market nuances (Keller, 2008; MBA Knowledge Base, 2023).

6.2 STRATEGIC LESSONS FOR SMARTPHONE BRANDS

1. Prioritize Ecosystem Development over Hardware Alone

A strong platform, complete with app support and developer integration, is critical for lasting marketpresence and not just hardware excellence (Cusumano, 2010).

2. Respond Swiftly to Disruptive Innovation

Brands must remain flexible and ready to pivot. Delays in adapting to industry shifts result in diminishing relevance and loss of competitive ground (Christensen, 1997; Ruokonen et al., 2020).

3. Design Pricing Around Local Market Realities

Understanding price elasticity in emerging markets is crucial. Products must justify their cost through performance and features aligned with consumer expectations (Probitas Report, 2021).

4. Combine Emotional Legacy with Functional Relevance

Heritage branding must be supported by present-day utility. Emotional appeal is most effective when paired with reliable, feature-rich experiences (Aaker, 1991; Vijay Raj & Devi, 2021).

5. Tailor Marketing and Distribution to

Local		Needs
Localized	strategies,	including
vernacular	messaging,	regional

Influencers, and online-offline distribution synergy, are vital for penetrating diverse markets (Keller, 2008).

6.3 RECOMMENDATIONS FOR REVIVING LEGACY BRANDS

1. Introduce Android While Preserving Legacy Cues

Relaunching Lumia on Android, especially clean versions like Android One would have aligned with user expectations while leveraging Nokia’s trusted brand identity (Tyagi & Zaidi, 2019).

2. Revitalize Developer Engagement

A healthy app ecosystem is essential. Incentivizing local developers through better tools, monetization, and SDKs can close the ecosystem gap (Quli, 2020; Salminen & Teixeira, 2014).

3. Focus on Mid-Range Features with Competitive Pricing

Essential specifications such as long battery life, good cameras, and software support must be offered within ₹10,000–₹20,000 price bands to gain traction (Probitas Report, 2021).

4. Blend Nostalgia with Modern Functionality

Classic Nokia elements like robust build, iconic ringtones, and clean design should be retained, but with updated software and ecosystem integration to make them usable today (Vijay Raj & Devi, 2021; Reuters, 2024).

5. Adopt Omni-Channel Marketing with Local Appeal

Use regional influencers, flexible payment plans, and retail availability to boost visibility. Emphasizing app compatibility, affordability, and brand trust can reshape consumer perception (Keller, 2008).

6. Develop Ambidextrous Organizational Capabilities

Revived brands must balance their legacy with innovation. Internal agility is critical to explore new technologies without losing the brand’s essence (Ruokonen et al., 2020; Doz, 2017).

7. Use Consumer Feedback to Inform Iteration

Continuous feedback loops through app reviews, surveys, and community engagement can inform product updates and guide responsive innovation (Ruokonen et al., 2020).

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APPENDIX

Appendix A: Survey Questionnaire and Response Summary

Survey Methodology

To gather reliable insights into user attitudes toward Nokia Lumia, a structured questionnaire was created and shared via Google Forms. The survey consisted of both objective (multiple choice, Likert-scale) and subjective (open-ended) items. The questions aimed to understand patterns in usage behavior, brand perception, and interest in a potential relaunch.

Survey Structure Highlights:

- 1. Demographics:** Included age, gender, education, and occupation to identify trends across population segments.
- 2. Usage and Experience:** Covered operating system preferences, past Lumia usage, and perceived pros and cons of the device.
- 3. Perceptions and Attitudes:** Focused on reasons for adoption, dissatisfaction, brand associations, and barriers to continued use.

4. Future Purchase Considerations: Assessed interest in a relaunch, ideal price range, and OS preference.

Key Survey Responses

1. Have you ever used a Nokia Lumia?

- o Yes: 36.4%
- o No: 63.6%

2. Reasons for Choosing Lumia (Multiple Choice):

- o Brand Trust: 68%
- o Camera Quality: 52%
- o Design: 49%
- o Price: 41%
- o OS: 38%

3. Dislikes about Lumia (Open-ended themes):

- o App unavailability (e.g., WhatsApp, Instagram)
- o Poor software support and infrequent updates
- o Uncompetitive pricing compared to Android rivals

4. Ideal Price for Relaunched Lumia:

- o ₹10k–₹20k: 62.4%
- o ₹20k–₹30k: 23.1%
- o ₹30k+: 14.5%

Appendix B: Statistical Analysis and Hypothesis Validation

Statistical Approach

Quantitative analysis was conducted using chi-square tests of independence and basic descriptive statistics. These tests assessed whether specific variables such as brand trust, price sensitivity, and age group were significantly associated with Lumia adoption and future purchase intent.

Hypothesis Testing Outcomes

1. Brand Trust and Lumia Usage

- o **H₀:** No association exists between brand trust and Lumia usage.
- o **Result:** $\chi^2 = 58.31, p < 0.00001 \rightarrow$ **Significant**
- o **Interpretation:** Users who trusted the Nokia brand were significantly more likely to have used Lumia.

2. Price Preference and Purchase Willingness

- o **H₀:** Preferred price range does not impact willingness to purchase Lumia.
- o **Result:** $\chi^2 = 5.96, p = 0.0146$

$\rightarrow$ **Significant**

- o **Interpretation:** Consumers favoring the ₹10k–₹20k range showed higher interest in a relaunch.

3. Age Group and Lumia Adoption

- o **H₀:** Age has no impact on Lumia adoption.
- o **Result:** $\chi^2 = 24.51, p < 0.00001 \rightarrow$ **Significant**
- o **Interpretation:** Respondents aged 25+ were substantially more likely to have used Lumia.

Appendix C: Qualitative Themes from Open-Ended Questions

Recurring Insights from Respondents

1. Legacy vs. Relevance

- *"I loved Nokia growing up, but Lumia didn't feel relevant anymore."*

2. OS Limitations

- *"No Google apps or banking tools made the phone unusable."*

3. Uncompetitive Pricing

- *"I could get more value with Android brands at the same price."*

4. Interest in Revival

- *"If Lumia returns with Android and good specs, I'd definitely consider it."*

Appendix D: Charts and Data Visuals

Figure D1: Reasons for Discontinuing Lumia Use

- Lack of app support: 71%
- UI/UX issues: 58%
- Pricing dissatisfaction: 46%

Figure D2: Preferred Price Range for Relaunch

- ₹10k–₹20k: 62%
- ₹20k–₹30k: 23%
- Above ₹30k: 15%

Appendix E: Limitations of the Study

1. Age Bias

- Over 60% of responses came from the 18–24 age group.

2. Recall Limitations

- As Lumia was phased out years ago, some responses may rely on imperfect memories.

3. Urban Sampling

- The sample was more urban-centric, possibly skewing the results toward tech-savvy consumers.

Appendix F: Glossary of Terms

- **Brand Equity:** The perceived value and trust associated with a brand.
- **Chi-square Test:** A statistical method for testing relationships between categorical variables.
- **Platform Lock-In:** When users feel bound to a particular software ecosystem.
- **Residual Equity:** Remaining positive sentiment for a brand even after its decline.

THE PSYCHOLOGY OF TAX EVASION: UNDERSTANDING INDIAN TAX BEHAVIOUR THROUGH EXISTING DATA

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ABSTRACT

Tax compliance remains crucial to fiscal sustainability in any economy. Despite several tax reforms and digitization initiatives, tax evasion is still a major issue in India, especially for individuals and small businesses. This study investigates the psychological elements that lead to tax evasion in India using secondary data. Drawing on behavioural economics, cultural theory, and public finance research, the study investigates how taxpayers' decisions are impacted by their perceptions of justice, trust in the government, the degree of enforcement, and socioeconomic circumstances. By examining government publications, scholarly works, and data from agencies such as the Income Tax Department, NITI Aayog, and the National Sample Survey Office (NSSO), the study identifies the structural and psychological underpinnings that facilitate evasion. The study reveals psychological and structural factors that are fundamental to evasion behaviour. The findings suggest that, in addition to enforcement, voluntary compliance is significantly influenced by civic education, the perception of fairness in taxation, and moral and social values. The necessity of integrating behavioural insights into the development of tax laws is emphasized by policy implications.

Keywords: Tax evasion, psychological elements, behavioural economics, tax compliance, secondary data

INTRODUCTION

The unlawful practice of purposefully falsifying or hiding income in order to lower tax obligations is known as tax evasion. This includes breaking tax laws by hiding money in offshore accounts, inflating deductions, or underreporting income to avoid paying the correct amount of tax.

India's fiscal and economic development is still severely hampered by tax evasion. Despite efforts to address leaks through administrative and policy reforms, revenue mobilization is hampered by a sizable informal economy and pervasive non-compliance. In a population of roughly 1.46 billion¹, only 8.09 crore people filed income tax returns as of FY 2023–24 up from over 7.40 crore in 2022-23. This discrepancy necessitates investigating psychological and behavioural aspects in addition to structural factors. Understanding the causes of tax evasion requires an interdisciplinary approach. Cultural attitudes, psychological variables, perceived fairness, and institutional trust all have a big influence on tax behaviour.

LITERATURE REVIEW

According to Ajzen's Theory of Planned Behaviour (1991)⁷, attitudes, subjective norms, and perceived control all have an impact on behaviour. Although there are still few extensive studies on income tax, Indian studies using this framework in the context of the Goods and Services Tax (GST) show that these factors have a significant impact on compliance. Using data from the World Values Survey, Korgaonkar's (2022)⁸ research shows that tax morale and institutional trust are positively correlated, with salaried people reporting lower morale than self-employed people. According to other research, including Kumar (2017), a lack of confidence in the government because of subpar service and uneven enforcement can undermine procedural and outcome fairness and promote evasion. The Slippery Slope Framework (2008) by Kirchler et al⁶. states that both perceived authority and trust influence compliance. Despite the paucity of empirical research, audits in India function as both deterrents and mechanisms to guarantee fairness. Policy analysis indicates that high rates and procedural complexity contribute to evasion, especially when compliance costs exceed perceived benefits, despite the paucity of direct research on the effect of tax rates.

OBJECTIVES OF THE STUDY

- Examine the psychological aspects of tax evasion in India
- Analyse the body of secondary data and literature on the behaviour of Indian taxpayers
- To assess the behavioural effects of policy interventions.
- To suggest tactics based on behavioural insights to enhance tax adherence

STATEMENT OF PROBLEM

There is little empirical research using extensive official datasets to connect psychological elements like attitude, norms, fairness, and trust to actual income tax evasion, though some

Indian studies have examined tax morale or applied TPB to indirect taxes. Furthermore, international models like the Slippery Slope Framework have not been extensively tested in the context of Indian income taxes.

RESEARCH METHODOLOGY

Using secondary data from government sources, expert commentary, scholarly journals, and policy documents, this study takes a qualitative, descriptive approach. Individual taxpayer behaviour in India is the focus of thematic analysis, which looks at structural and psychological aspects.

OBJECTIVE ANALYSIS**Psychological contributors to Tax Evasion in India**

Indian taxpayers' tax evasion behaviour is influenced by a variety of psychological factors. According to Sharma, DasGupta, and Gopal (2023)⁹, people are often overwhelmed by the perceived intricacy and burden of the tax system. Due to complicated rules, expensive compliance fees, and a system that appears to prioritize gaps over clarity, taxpayers frequently feel lost. People may feel that the tax system is unfair and onerous, which encourages them to try to avoid paying taxes.

Another important factor is low tax morale. When people perceive tax evasion as normal among their peers, tax morale, basically, the intrinsic motivation to pay taxes, deteriorates. Community conformity, reciprocity, and social norms can all encourage people to break the law, particularly if they see others doing it with no consequences.

Psychological reactance can also be triggered by procedural delays, such as slow refunds and laborious manual filings. Taxpayers may feel their autonomy or sense of justice is threatened when they encounter these inefficiencies, which may make them less inclined to voluntarily comply.

INDIAN TAXPAYER BEHAVIOUR: SECONDARY DATA ANALYSIS**Tax Morale and Trust (NIPFP Study)**

The observations are supported by empirical data. Based on data from the World Values Survey (1990–2014)¹⁰, NIPFP Working Paper No. 381 claims that Indians' tax morale is greatly increased by their trust in institutions, such as the government, parliament, and civil services. Intriguingly, the study discovers that salaried people typically have lower tax morale than self-employed people, perhaps because of their lack of control over tax withholding.

GST Intricacy, Knowledge, and Compliance

Additionally, a study on GST compliance that involved 658 small businesses in Haryana¹¹ shows that tax knowledge is essential for encouraging compliance. Trust in the system is still a crucial underlying component, though. With its numerous tax slabs, frequent rule changes, and technical challenges, the GST framework has caused significant confusion, especially for small and medium-sized businesses. Small taxpayers continue to be frustrated by the increasing complexity and compliance burden, as evidenced by a few case studies and journal articles.

ASSESSMENT OF POLICY CHANGES AND THEIR EFFECTS ON BEHAVIOUR

Policy Intervention	Details and Scope	Impact in Numbers	Behavioural Impact
Operation Clean Money (January, 2017)	AI-driven examination of cash deposits following demonetization	18 lakh taxpayers were reported, and ₹2.82 crore in deposits were examined (Economic Times). ³	- Because even small-scale evaders felt scrutinized, perceived audit risk rose dramatically. - By August 2017, ITR filings had increased by 25% year over year, indicating fear-induced compliance. - Tax enforcement has become more

			socially salient, which increases the perceived risk of noncompliance.
E-filing made simpler (SAHAJ, etc.)	Pre-filled forms and digital filing for salaried individuals and SMEs were introduced	According to CBDT data, 94.5% of ITRs were filed electronically in FY 2023.	• Less mental work is needed to comply, particularly for filers who pose little risk. • Encouraged honest taxpayers to submit their taxes on time by reinforcing ease-of-doing compliance. • Possibility that system bugs in previous iterations (2021) momentarily damaged trust, demonstrating the need for technically sound simplification
Fairness and trust in the procedure	Suggested by NIPFP, Vidhi Centre,	Economic Survey NIPFP WP 381: Tax morale rose by +22% due to trust in the government (WVS data) ¹⁰ .	• Taxpayers' moral willingness to comply increases when they believe audits are objective and revenue is spent wisely. • Procedural justice, or being treated fairly, has a significant psychological impact on voluntary compliance. • The need for system trust is highlighted by the fact that salaried people in India have lower tax morale (avg. score 0.52) than self-employed people (0.65) (NIPFP, 2022).

SUGGESTED TACTICS BASED ON BEHAVIOURAL INSIGHTS TO ENHANCE TAX ADHERENCE

Methodology	Mechanism of Psychology	Intended outcome
Social norms messaging	Influence from Peers	Boost voluntary compliance
procedural fairness, and trust-building	Motivation from Within	Long-term morale boost
Simplifying	Decrease Cognitive Load and Friction	Reduce the stress and difficulty of compliance
Framing of public goods	Mutual respect and a sense of community	Increase the desire to participate

DISCUSSION

- **Persistent Lack of Trust:** According to NIPFP (2021), only 30% of taxpayers think their taxes are used effectively, which lowers tax morale and provides an excuse for tax evasion.
- **Perception of Low Value:** During the pandemic, 36% of respondents saw taxes as a financial necessity; customers frequently wonder why they should pay when public services are subpar.
- **High Tax Burden:** Small businesses believe that their profit margins are greatly lowered by income tax and GST.
- **Tax Complexity & Fatigue:** Even among law-abiding taxpayers, avoidance results from frequent policy changes and strict procedures that cause confusion (Global Tax Complexity Survey, 2020).
- **Cost-benefit analysis:** taxpayers balance the possibility of being discovered against the possible financial savings from underreporting.
- **Personal Financial Pressure:** According to the Income Tax Compliance Report (2023), 40% of middle-class taxpayers point to growing healthcare and educational costs as obstacles to compliance.
- **Cash-Heavy Sectors:** Jewellery, real estate, clinics, and unofficial enterprises all frequently exhibit underreporting.
- **Lack of Audit Fear:** Many people avoid paying taxes because they believe there is little chance of being caught or punished.
- **Misplaced Advice:** Evasion is frequently encouraged by untrained agents or unofficial consultants.
- **Cultural Acceptance:** Unless there is stringent enforcement, tax evasion may be accepted as a legitimate business practice in some communities.

CONCLUSION

In India, tax evasion is intricately linked to psychological aspects, cultural customs, and governance concerns, going well beyond simple financial calculations. The evidence indicates that broad-based compliance will remain elusive unless key drivers such as trust, perceptions of fairness, ease of procedures, and prevailing societal norms are addressed. Future tax reforms must take behavioural insights into account and recognize these underlying complexities if they are to be truly effective; otherwise, efforts to increase compliance are likely to fail.

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A STUDY OF THE GLOBAL SURETY BONDS MARKET: FUNDAMENTALS, COMPARATIVE TRENDS, AND INDIA'S STRATEGIC POSITIONING

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ABSTRACT

This research paper aims to perform an extensive analysis of the worldwide surety bonds market to assess India's strategic position in it. Through a quantitative analysis of worldwide market dimensions, growth projections, and prevalent bond categories, the research aims to identify essential comparative patterns and offer a standard for developing markets. The research also includes a qualitative evaluation of India's emerging surety market, highlighting the key legal, regulatory, and commercial obstacles that affect its feasibility. The results of this study enhance the comprehension of the prospects and systemic challenges within India's surety sector and educate stakeholders on the essential reforms required to align the local market with global standards.

Keywords: Surety Bonds, Suretyship, Risk Management, Specialty Commercial Insurance, Guarantees, Infrastructure Finance, IRDAI

INTRODUCTION

In the domain of extensive construction and infrastructure, minimizing the likelihood of contractor failure is essential. Surety bonds represent a type of non-deposit insurance that has developed into an effective method for addressing this problem. They function based on a tripartite agreement where a Surety (usually an insurer) assures the responsibilities of a Principal (such as a contractor) to an Obligee (like a project owner) if there is default or failure to perform. These bonds serve as tools for managing risk, guaranteeing that contractual commitments are fulfilled, especially in the infrastructure and construction industries. Surety bonds, in contrast to conventional bank guarantees, do not hinder the contractor's credit availability or require collateral, resulting in a more capital-efficient option. Prior to releasing the bond, the surety assesses the principal's abilities and reliability, and in the event of default, safeguards the obligee while fulfilling the indemnification clause, which makes the principal financially accountable.

The worldwide surety market continues to grow alongside infrastructure development. It was estimated at approximately USD 16 billion in 2021 and is expected to attain USD 24.4 billion by 2031, expanding at a 4.4% CAGR¹. North America, Europe, and Asia-Pacific lead the market, with contract bonds (including bid, performance, and advance payment bonds) making up most of the activity.

In India, surety bonds were launched in Budget 2022² as a regulatory substitute for bank guarantees. The IRDAI (Surety Insurance Contracts) Guidelines, 2022³, permit insurers to provide different types of bonds, such as bid, performance, advance payment, contract, and judicial bonds, starting from April 1, 2022. Modifications made in 2023, removed the maximum premium limit, lowered the solvency margin to 1.5x, and lifted the 30% per-contract exposure limit⁴. By 2025, surety bond products have been offered by insurers such as SBI General, Bajaj Allianz, New India Assurance, HDFC ERGO, TATA AIG, ICICI Lombard, GoDigit, Reliance General Insurance, and IFFCO Tokio. As of August 2024, the Finance Ministry stated that nearly ₹6,390 crore in bonds had been released, which includes ₹1,400 crore in performance bonds⁵. These statistics suggest a nascent market with minimal existing utilization, yet with great promise considering India's ambitious National Infrastructure Pipeline and the government's push for capital-efficient risk management strategies.

LITERATURE REVIEW

T. Scot Leo (1993) offers a fundamental legal examination, explaining that suretyship represents a type of credit centered on assessing a contractor's capability to execute, instead of concentrating on pricing actuarial risk⁶. Expanding on this, **Lin Yang (2023)** present new empirical findings indicating that this underwriting procedure offers substantial risk management benefits, as sureties acquire private insights that enable them to accurately forecast contractor financial difficulties⁷. **Jing J, Deng X, Maqbool R, Rashid Y, & Ashfaq S (2020)** further investigate the strategic use and impact of these bonds, finding that the structure of a bond is essential, as high-penalty conditional bonds offer a more robust deterrent to default compared to low-penalty unconditional bonds⁸. Examining upcoming global trends, the **UNEP Finance Initiative (2018)** highlights a significant shift in underwriting by promoting the incorporation of Environmental, Social, and Governance (ESG) factors as an essential 'Fourth C' in risk evaluation⁹. Analyzing the Indian landscape, **SPJIMR (2022)** emphasizes the significant disparity between the need for guarantees in the infrastructure realm and the restricted offerings from

conventional banks, measuring the possible market potential and presenting surety bonds as an essential option to enhance contractor liquidity¹⁰.

STATEMENT OF THE PROBLEM

The research paper intends to perform a quantitative assessment of the worldwide surety market by analyzing its present size, growth forecasts (CAGR), and prevalent bond categories in major nations, and leveraging these comparative insights to strategically assess the distinct challenges, opportunities, and future potential of India’s emerging surety market.

RESEARCH METHODOLOGY

The research is based on secondary data sources.

Secondary Data Collection: Secondary data has been collected from academic journals, professional publications, white papers, and syndicated market research reports. Several governmental reports and regulatory guidelines, such as those from the IRDAI and the MoF, have also been utilized, along with financial news articles for industry context.

LIMITATIONS OF THE STUDY

- a) The study is based on secondary data sources and does not entail primary research.
- b) The quantitative scope of research is constrained to 2024 as surety bonds are a new type of financial product and hence there is limited availability of historical data for analysis.

RESEARCH OBJECTIVES

- 1) To analyze the surety market size in 2024 across key global regions.
- 2) To identify the dominant types of surety bonds in the global market in 2024.
- 3) To examine the market's growth potential by comparing 2031 size estimations and the projected CAGR across these regions.
- 4) To critically evaluate the strategic positioning of India's nascent surety market by analyzing its key regulatory, legal, and commercial challenges in the context of the established global trends.

DATA ANALYSIS

1) Analysis of the surety market size in 2024 across key global regions and countries

With an estimated total size of \$18.20 billion in 2024, the global surety market has become an important part of the specialty insurance industry. The distribution of this market, on the other hand, is very concentrated, indicating that different parts of the world have varying levels of economic maturity and regulatory development. A study of the market's composition is a key way to understand global trends and determine how best to position emerging markets like India.

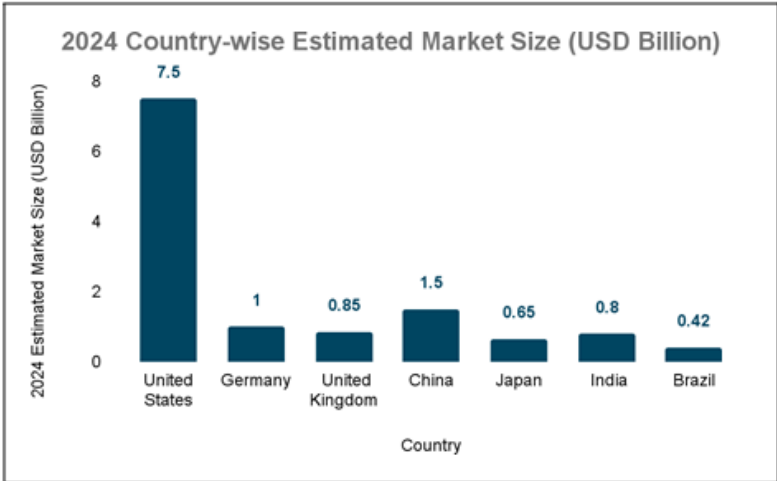


Source: Allied Market Research, "Surety Market Global Opportunity Analysis and Industry Forecast, 2021-2031".¹

The chart above shows that North America has the largest share of the global market, valued at approximately \$8.5 billion, or 46.7%. Following this, Europe is the next largest market, accounting for 28.9% of the total at \$5.26 billion. It is a mature and stable market.

The Asia-Pacific region is currently third with \$3.24 billion (17.8%), but it is a key area of focus because it has a lot of room to grow. The rest of the world, including Latin America, the Middle East, and Africa (LAMEA), constitutes the remaining 6.6%.

The analysis of the market by country below illustrates how concentrated it is and provides a clearer picture of India's current position.

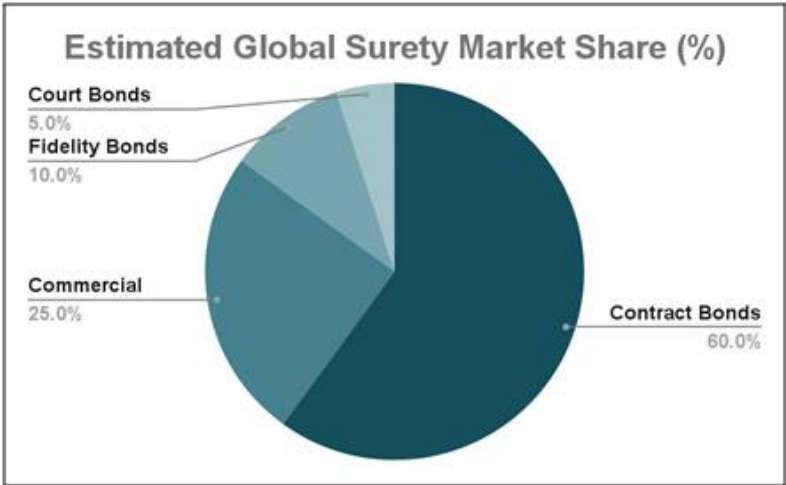


Source: Allied Market Research, "Surety Market Global Opportunity Analysis and Industry Forecast, 2021-2031"; Ministry of Finance, Government of India (for India data).¹

With a market size of \$7.5 billion, the United States is the clear global leader. It makes up almost 90% of the North American market and over 40% of the global market independently. This level of business is a direct consequence of the long-standing regulations that govern it, such as the Miller Act, which mandates surety bonds for public works, and the close link to the construction industry. In contrast, China (\$1.5 billion) and Germany (\$1billion) are also major economies, but their markets are significantly smaller.

Most significantly for this study, the analysis demonstrates India's strong market entry. With a current market size of roughly \$0.8 billion⁵, India is not a minor participant but rather a substantial emerging market, on par with Japan's established market (\$0.65 billion) and akin to that of the United Kingdom (\$0.85 billion). This quantitative research provides a clear baseline: a mature, highly developed market in North America and Europe, alongside a dynamic landscape in Asia-Pacific, with India emerging as a notable new entrant. This context is critical for assessing the challenges and significant growth potential that India has as it expands its domestic surety business.

2) Identification of the dominant types of surety bonds in the global market in 2024.



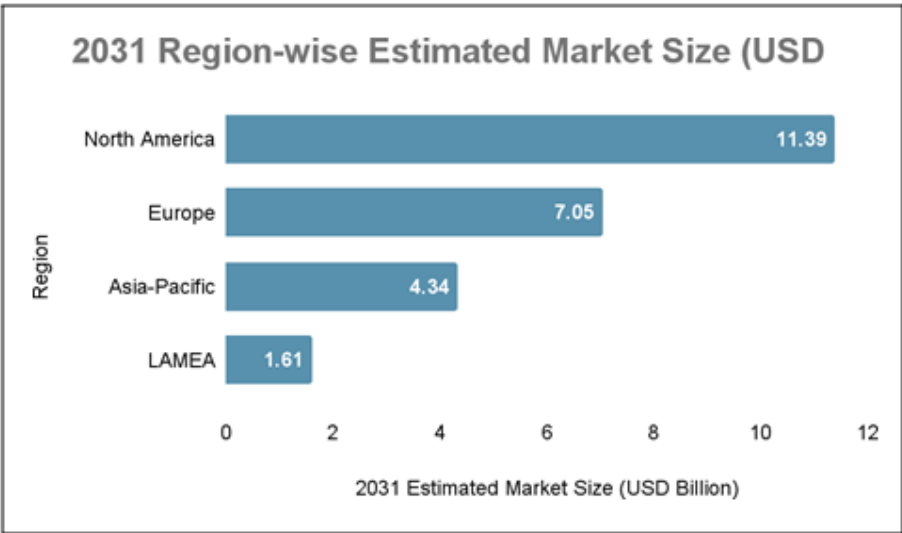
Source: Allied Market Research, "Surety Market Global Opportunity Analysis and Industry Forecast, 2021-2031".¹

The pie chart above illustrates the composition of the \$18.20 billion global surety market by bond type in 2024. The data reveals a clear and fundamentally essential market structure: Contract Surety Bonds overwhelmingly dominate, accounting for an estimated 60% of the overall global market share.

This substantial majority is the most significant finding from the segmentation study. It emphasizes the primary purpose and economic driver of the global surety industry, which is its close interaction with the construction and infrastructure sectors. These bonds, which include bid and advance payment bonds, are critical financial tools for mitigating risk and ensuring project completion in large-scale construction. Other divisions, such as Commercial Bonds (25%) for regulatory compliance and Fidelity Bonds (10%), play vital roles, but their market share highlights their status as secondary purposes within the industry.

The finding has significant implications for India's strategic analysis. It establishes a clear global benchmark, indicating that India's policy of issuing surety bonds primarily to fund the National Infrastructure Pipeline aligns precisely with the established structure of the world's most mature and successful surety markets. It shows that focusing on infrastructure is more than a local concern; it represents the core economic model of the global surety sector, laying the groundwork for the Indian initiative's potential success.

3) Examination of the surety market's growth potential by comparing 2031 size estimations and the projected CAGR across regions and countries.

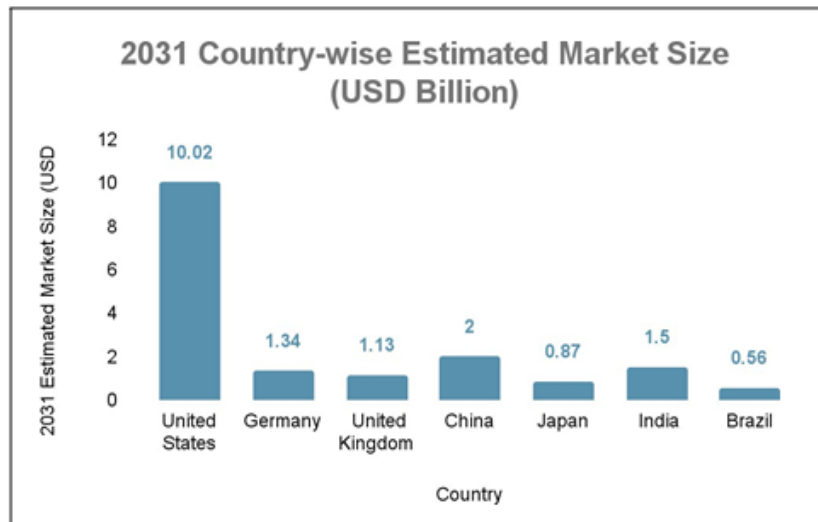


Source: Allied Market Research, "Surety Market Global Opportunity Analysis and Industry Forecast, 2021-2031".¹

Examining the growth potential of the surety industry reveals a dynamic and ever-evolving global marketplace. While the entire market is projected to grow significantly to \$24.4 billion by 2031, the drivers of this growth are not consistent worldwide. A comparative analysis of future market sizes and underlying growth rates illuminates emerging trends and the strategic positioning of major markets.

According to regional estimates for 2031, North America (\$11.39 billion) and Europe (\$7.05 billion) will continue to be the largest markets in absolute currency terms. However, Compound Annual Growth Rates (CAGR) provide the most insight into the underlying growth narrative. The Asia-Pacific region's expected CAGR is a world-leading 9.4%, surpassing the steady but moderate expansion of mature economies in North America and Europe. This indicates a clear trend: while established economies offer stability, Asia has the most rapid development and future potential.

The country-specific forecast graphic, presented below, provides a more detailed and compelling picture of this trend, particularly regarding India's strategic position.



Source: Allied Market Research, "Surety Market Global Opportunity

Analysis and Industry Forecast, 2021-2031"¹; Ministry of Finance, Govt. of India (for India's 2024 base).⁵

The United States is expected to remain a behemoth, with its market expanding to \$10.02 billion. However, the most compelling tale is the growth of Asian markets. China's market is expected to grow to nearly \$2 billion. Most importantly for this report, India's market is projected to expand to \$1.50 billion.

This prognosis for India is the most significant discovery. It changes India from a new entrant in 2024 to a major market by 2031, placing it notably larger than the established economies like the United Kingdom (\$1.13 billion) and Japan's projected market (\$0.87 billion). The analysis reveals that India's high growth trajectory (9.4% CAGR) enables it to swiftly narrow the gap with older economies, establishing it as a crucial driver of future global growth in the surety industry.

4) Critical evaluation of the strategic positioning of India's nascent surety market by analyzing its key regulatory, legal, and commercial challenges in the context of the established global trends.

While quantitative data suggests significant expansion potential for India, the market's strategic position is now defined by substantial on-the-ground challenges that distinguish it from mature global markets. The government and the Insurance Regulatory and Development Authority of India (IRDAI) have established the necessary operating framework with the IRDAI (Surety Insurance Contracts) Guidelines, 2022³, and further amendments in 2023, which abolished premium and exposure restrictions⁴. Despite these enabling regulations, significant legal and business difficulties remain.

The primary hurdle is the legal position of surety providers under the Insolvency and Bankruptcy Code (IBC) of 2016¹¹. Unlike banks, which are recognized as secured financial creditors, insurers offering surety bonds are not treated similarly. This means that in the event of a contractor's bankruptcy, the insurer's ability to collect damages is unpredictable and subject to bank claims, posing a substantial risk. This legal ambiguity has a direct chilling effect on market capacity, as global reinsurers, crucial for financing high-value infrastructure projects, are hesitant to provide adequate support in the absence of stronger legal remedies.

This, in turn, presents a business quandary in which insurers must compete with well-established Bank Guarantees (BGs) while pricing their policies to reflect a much greater risk profile.

CONCLUSION

While India's surety market has created a substantial \$0.80 billion base in 2024, its journey to a projected \$1.50 billion by 2031 will involve overcoming underlying issues that distinguish it from developed markets. The key barriers include restrictive legislative frameworks under the IBC¹¹, a lack of reinsurance capacity¹², insufficient understanding with underwriting challenges, and fierce competition from traditional bank guarantees. However, these constraints are balanced by a strong government push for infrastructure development, as demonstrated by the ambitious \$1.4 trillion National Infrastructure Pipeline (NIP)¹³, as well as the product's inherent capital efficiency. This study finds that, despite initial challenges, the alignment of massive market demand with legislative objectives positions India's surety sector for a transformational and prosperous future.

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WORKPLACE READINESS IN LIGHT OF WAGE CODE 2019: A STUDY OF MANAGEMENT GRADUATES

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ABSTRACT

In an era of rapid regulatory transformation and evolving labor markets, management education must evolve to produce graduates who are not only business-savvy but also legally literate. The advent of India's Wage Code 2019 highlights a critical skills gap: most management students lack the awareness and readiness to engage with labor law frameworks essential for HR and compliance roles. This study examines the effectiveness of industry mentorship and alumni engagement in bridging this employability gap among students. By analyzing responses from 150 management students across urban institutions, the research uncovers that structured industry mentorship, alumni-led policy workshops, and compliance-focused internships significantly enhance legal readiness and professional confidence. Traditional curricula, in contrast, show limited impact in isolation. Statistical techniques including t-tests, regression, and ANOVA confirm that experiential learning interventions predict students' compliance competence and job preparedness. The study calls for curriculum reform, policy labs, and digital pedagogy to institutionalize labor law training. Findings contribute to national and global dialogues on employability, advocating a future-ready educational model that aligns students with real-world legal demands and regulatory expectations.

Keywords: Labor Law Awareness, Employability Skills, Industry Mentorship, Management Education

INTRODUCTION

In the rapidly evolving global economy, the concept of employability has transcended beyond academic qualifications to include the awareness and application of real-world policies, labor laws, and compliance frameworks. Amidst sweeping regulatory reforms, particularly in emerging economies, graduates entering the workforce must not only possess technical and managerial competencies but also demonstrate a foundational understanding of employment law and worker rights. Yet, a persistent gap remains between what management students are taught and what employers expect in practice, especially in contexts requiring nuanced knowledge of evolving labor codes.

Across higher education systems globally, stakeholders have voiced concern over the rising mismatch between academic learning and industry expectations. Ibrahim et al. (2025) emphasize that universities continue to produce graduates with theoretical knowledge but limited preparedness to handle real-world regulatory shifts, pointing to labor law literacy as a neglected domain in business education. Similarly, Khatamjonovna (2025) underscores the urgency of aligning vocational education in Uzbekistan with employer expectations, particularly through reforms that prioritize work-readiness over academic abstraction.

This misalignment is not limited to post-Soviet economies. In South Asia, Khattri et al. (2023) demonstrate that curriculum innovation is a key driver of employability enhancement, yet policy frameworks such as India's Wage Code 2019 are still underrepresented in mainstream pedagogy. Most academic programs tend to overlook labor legislation as a core area of instruction, despite its increasing relevance in compliance-driven HR environments.

Furthermore, student perceptions of their career readiness often differ significantly from employer assessments. Chavan and Carter (2018), in a study of management students' expectations, identified regulatory literacy and policy compliance as among the weakest dimensions in self-assessed readiness for employment. In line with this, Lai et al. (2025) propose integrating learning analytics into curricula to track gaps in students' legal awareness and policy comprehension, offering a data-driven solution to workforce unpreparedness.

Importantly, the integration of labor law education is not simply a curricular concern. It is foundational to future-proofing the workforce. Liang et al. (2025) argue that educational institutions must become application-oriented, bridging the gap through collaborative industry partnerships and contextual legal education. They highlight that professional preparedness now requires students to navigate labor codes, employment contracts, regulatory changes, and worker protections effectively.

The increasing precarity of platform-based and gig work models further demands that students enter the job market with a working knowledge of labor rights. In this regard, higher education's failure to integrate labor reform awareness undermines both ethical workplace practices and national development agendas.

This study contributes to global scholarship by specifically exploring the level of awareness and professional readiness among students regarding labor law reforms, with a focus on recent Indian developments such as the Wage Code 2019. Through this lens, it aims to assess the structural gaps in pedagogy, the role of industry and alumni engagement, and the strategies required to embed legal competencies into professional development.

RESEARCH QUESTIONS

1. What is the current level of awareness among management students regarding recent labor law reforms in India, particularly the Wage Code 2019?
2. How prepared do management students perceive themselves for HR roles that require knowledge of labor compliance and policy implementation?
3. What role does the academic curriculum play in shaping awareness and readiness among students regarding labor law and regulatory frameworks?

LITERATURE REVIEW

Bennett, Dunne & Carré (2000) This early work emphasized co-designing higher education curricula with employers. Their study provided strong evidence that industry involvement, including HR policy training, increases student work-readiness and compliance awareness.

Yorke & Knight (2004) In their seminal work on employability in higher education, Yorke and Knight emphasized embedding employability into curriculum design, particularly through reflection, industry engagement, and skills application. Their framework is widely cited for developing job-ready graduates.

Rothwell & Arnold (2007) This study introduced the Self-Perceived Employability (SPE) scale, highlighting that students' confidence in career readiness is influenced by curriculum relevance, industry exposure, and legal knowledge—key to understanding labor reforms.

Andrews & Higson (2008) explored employer expectations across Europe and found a notable gap between soft skills and legal/business readiness among graduates, calling for better integration of regulatory knowledge into business education.

Budhwar & Bhatnagar (2008) In their work on HRM transformations in India, the authors described how global labor trends influence HR practices. However, they noted that student training often lags contemporary labor reforms, which limits industry readiness.

Agarwal (2009) In *Indian Higher Education: Envisioning the Future*, Agarwal discussed the importance of modernizing curricula to include real-world HR practices and legal standards. He advocated legal training in B-schools as a means of professionalizing the workforce.

Mehrotra & Ghosh (2012) Through analysis of India's skill development strategy, the authors pointed out that employability depends on understanding workplace rights and legal protections areas overlooked in most management programs at the time.

Stone & Lewis (2012) Focusing on career readiness for the 21st century, this research emphasized experiential learning, legal literacy, and vocational application as the triad of graduate employability. The findings stressed practical understanding of workplace law even at high school level.

Nawaz & Reddy (2013) The authors highlighted a lack of practical labor law exposure in Indian management curricula. They advocated the inclusion of experiential training aligned with employment legislation to close the industry-academia gap.

Ramachandran & Balasubramanian (2014) This study on managerial education in Indian B-schools emphasized that while students are trained in management theory, few are exposed to Indian labor codes, leading to under preparedness in HR compliance roles.

Jadhav & Chandorkar (2015) Studying student perceptions on HR readiness, they found awareness of labor policies to be extremely low despite high career ambition in HR roles urging for law-specific modules in management education.

Khatri & Raina (2016) Their study in Delhi-NCR explored how professional students understand employment readiness. It found low exposure to applied HR frameworks and limited labor law knowledge, suggesting the need for curriculum enrichment and employer interaction.

Ghosh & Banerjee (2016) Their study on Indian business school pedagogy emphasized regulatory knowledge as a missing link in employability training. They suggested targeted interventions such as guest lectures and compliance modules.

Wheebox & CII (2016) In the India Skills Report 2016, Wheebox and CII highlighted that only 34% of Indian graduates were employable, citing a disconnect between academic training and legal/regulatory awareness. The report urged deeper industry-academic integration and practical training, particularly in labor legislation.

Prikshat, Kumar & Raje (2017) This chapter on graduate work-readiness in India pointed to the passive role of Indian students in professional preparation. It suggested greater use of experiential methods and labor-law-linked case studies to build contextual understanding of reforms.

Santhi (2017) In her study on employability enhancement, Santhi argued that pedagogy reinvention particularly including legal and policy modules was essential to producing HR-ready graduates in Indian B-schools.

NASSCOM (2017) NASSCOM's employability analysis found that legal and ethical literacy was among the bottom three skill domains among Indian tech and management graduates. It recommended that labor codes, such as the Wage Code 2019, be introduced at the postgraduate level.

Kumar & Misra (2017) They reviewed employability skills among Indian IT and management graduates and observed that legal readiness and policy comprehension were among the least developed competencies.

Swaraj (2018) emphasizes the persistent gap between academic delivery and industry needs in Indian B-Schools. His research underscores the importance of integrating experiential learning and industry collaboration to develop managerial, technical, and behavioral skills. The study found that while case studies and live projects are common, innovation labs and industry-aligned curriculum remain underutilized. These insights are crucial for evaluating management graduates' preparedness in adapting to labor reforms like the Wage Code 2019. It provides a practical framework to realign employability efforts with evolving compliance and policy expectations.

Bansal (2018) Bansal assessed curriculum gaps in MBA programs from the lens of employer expectations. He proposed strengthening labor law education alongside industry mentoring to improve student preparedness.

Chavan & Carter (2018) In their study *Management Students' Expectations and Perceptions on Work Readiness*, Chavan and Carter examined the misalignment between student self-perception and employer expectations in India. The research emphasized the importance of aligning curriculum delivery with real-world HR and labor policy requirements to improve employment readiness.

Swaraj (2019) identifies that Indian B-Schools often fall short in preparing graduates for industry demands due to a gap between academic inputs and practical skills. His studies emphasize the need for integrated mentorship and industry engagement to bridge this gap. Employability skills are best developed through experiential learning, peer guidance, and real-world exposure. Key skills include adaptability, decision-making, and legal awareness especially relevant post-Wage Code 2019. These findings establish a foundation for assessing management graduates' readiness for compliance-centric roles.

Aithal & Aithal (2019) In analyzing India's New Education Policy 2019, the authors critiqued the absence of legal and regulatory training in management education. They proposed integrating labor reforms and compliance modules in pedagogy.

Aniket Swaraj (2020) highlights the need for B-Schools to adopt a skill-based approach to bridge the gap between academic and industry needs. His study classifies employability skills into Managerial, Technical, and Human domains. Leadership and willingness to learn were emphasized, while negotiation skills lagged. These insights align with the skills required for management graduates under the Wage Code 2019. The study offers a foundation to assess workplace readiness in a changing regulatory environment.

Varghese & Khare (2020) *India Higher Education Report 2020* presented sector-wide employability insights. It observed that policy reforms like the Wage Code require educators to include labor legislation awareness as part of skill-building strategies.

Pandya, Patterson & Ruhi (2022) Through a cross-country survey, the authors analyzed university students' readiness for the "workforce of 2030." Indian students scored low on workplace law literacy and career adaptability, calling for urgent academic reform in employability curriculum.

Kangad & Shah (2024) Focusing on perceptions of labor law in Gujarat industries, this thesis explored worker-management relations and the comprehension of legislative reforms. The study indirectly highlighted the role of academic exposure in creating better awareness among upcoming managers.

Mac Elheron (2024) explored how students develop professional identity through self-awareness and institutional support. It argued that knowledge of labor policy, alongside cultural alignment, plays a vital role in shaping employability readiness.

Research Gap

Although several studies (e.g., Yorke & Knight, 2004; Santhi, 2017; Bansal, 2018; NASSCOM, 2017) have examined **employability skills** and **industry-academia linkages**, **very few have explicitly explored the intersection of labor law awareness (like the Wage Code 2019) and student readiness for HR compliance roles** in a structured and empirical way.

This creates a critical gap in understanding how future HR professionals are being shaped in terms of regulatory competence a growing requirement in the wake of India's evolving labor codes.

RESEARCH METHODOLOGY

Research Objectives:

1. To measure the level of conceptual and procedural awareness of the Wage Code 2019 among students.
2. To evaluate students' perceived readiness to apply the Wage Code 2019 in real-world scenarios.
3. To identify gaps in curriculum and experiential learning, and to recommend industry-academia initiatives for improving legal awareness and employability.

Nature of the Study

The present research is **exploratory and descriptive** in nature. It aims to evaluate the level of awareness and professional readiness of management students regarding contemporary labor law reforms particularly the **Wage Code 2019** and assess how **industry mentorship** and **alumni engagement** contribute to bridging this knowledge and skill gap. The study also investigates perceptions about curriculum relevance, experiential learning exposure, and readiness for regulatory compliance roles in future employment.

Research Design

A **quantitative and cross-sectional research design** was employed for this study. The primary tool for data collection was a **structured questionnaire**, allowing for a systematic examination of student perceptions and institutional practices related to employability and labor law awareness. This approach enables the quantification of awareness levels and the statistical testing of relationships between variables, such as mentorship exposure and readiness.

Sampling Method

The study utilized **purposive and convenience sampling**. The target population includes **enrolling management students**. Alumni who are early-career professionals and faculty coordinators associated with industry outreach were also included for qualitative triangulation (where applicable).

Sample Size

A total of **150 valid responses** were collected and analyzed. The respondents include **final-year general management students**, with additional responses from **alumni mentors** and **faculty members** to provide a well-rounded view of experiential interventions and employability frameworks.

Data Collection Tool

A **structured questionnaire** was used, consisting of **five thematic sections**:

- **Section A** – Demographic and Academic Profile
- **Section B** – Awareness of Labor Law Reforms (with focus on Wage Code 2019)
- **Section C** – Perceptions on Readiness for HR/Compliance-Intensive Roles
- **Section D** – Role of Industry Mentorship and Alumni Interaction

- **Section E** – Institutional Practices and Curriculum Integration

Most items in Sections B to E were rated using a **5-point Likert scale** ranging from Strongly Disagree (1) to Strongly Agree (5) or Very Low (1) to Very High (5) for importance and awareness metrics.

Data Analysis Tools and Techniques

The collected data were processed using **SPSS v26** and **Microsoft Excel** for quantitative analysis. The following statistical techniques were applied:

- **Descriptive Statistics** – To summarize awareness levels and perceptions.
- **Independent Sample T-Test** – To compare awareness between mentored vs. non-mentored students.
- **ANOVA** – To test differences in perceptions across specializations (HR vs. Finance vs. Marketing).
- **Correlation Analysis** – To assess relationships between mentorship exposure and legal readiness.
- **Regression Analysis** – To predict employability readiness from independent variables like mentorship intensity, curriculum content, and internship experience.

Variables Considered:

- **Independent Variables:**

- a) Exposure to industry mentorship
- b) Level of alumni engagement
- c) Curriculum content on labor laws
- d) Internship or experiential learning duration

- **Dependent Variables:**

- a) Legal and regulatory awareness
- b) Readiness for employment in HR roles
- c) Confidence in compliance-related competencies
- d) Perceived employability

Hypothesis 1

Null Hypothesis: There is no significant difference in legal awareness about labor law reforms between mentored and non-mentored students

Alternative Hypothesis: There is a significant difference in legal awareness about labor law reforms among students who have received industry mentorship compared.

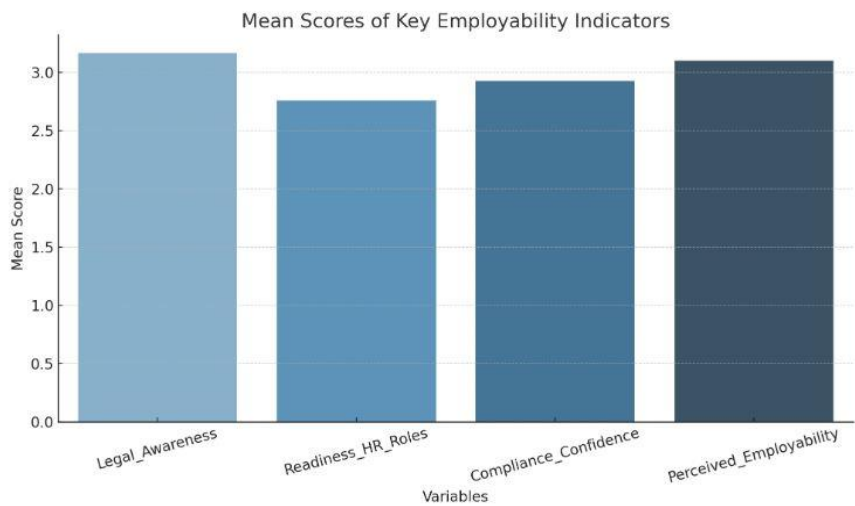
Hypothesis 2

Null Hypothesis: Internship experience has no significant impact on the perceived employability of management students.

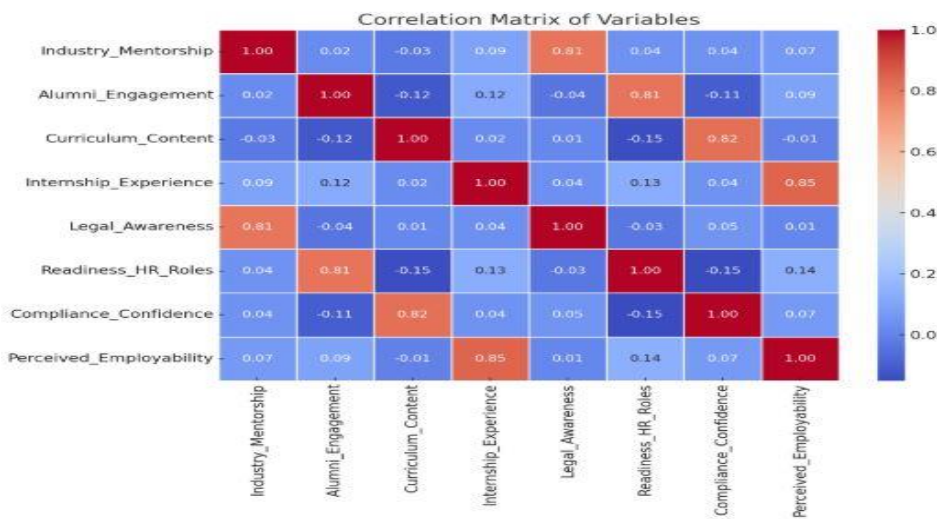
Alternative Hypothesis: There is a significant impact of internship experience on students' perceived employability.

Data Analysis and Interpretation

Variable	Mean	Std. Dev.
Industry Mentorship	3.15	1.38
Alumni Engagement	2.76	1.40
Curriculum Content	3.02	1.45
Internship Experience	3.15	1.49
Legal Awareness	3.17	1.73
Readiness for HR Roles	2.76	1.76
Compliance Confidence	2.93	1.85
Perceived Employability	3.10	1.73



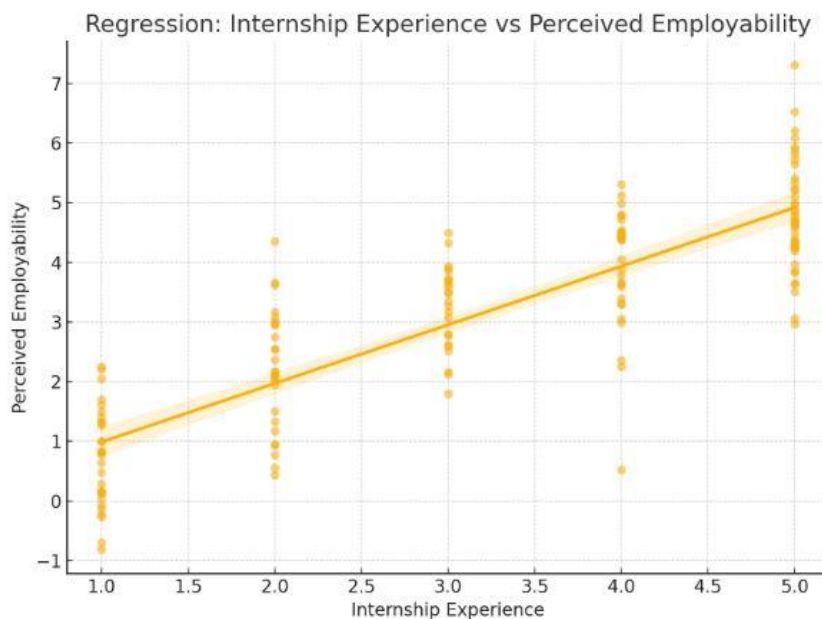
Variables	Correlation (r)
Industry Mentorship & Legal Awareness	0.81
Alumni Engagement & HR Role Readiness	0.81
Curriculum Content & Compliance Confidence	0.82
Internship Experience & Perceived Employability	0.85



Regression Analysis

Model: Perceived Employability ~ Internship Experience

- Regression Coefficient: 0.98
- Intercept: 0.007
- R² Value: 0.716



Comparison: Students with high mentorship exposure (score ≥ 4) vs. low mentorship
Variable Tested: Legal Awareness

- **t-statistic:** 12.23
- **p-value:** < 0.00001 (Highly significant)
- Students who reported higher exposure to industry mentorship showed significantly better awareness of labor law reforms.

ANOVA RESULTS

Comparison: Readiness for HR roles across curriculum content groups

- **Groups:** Low, Medium, High Curriculum Content
- **F-statistic:** 1.18
- Curriculum content levels alone did not significantly impact perceived HR role readiness.
- Internship experience explains 71.6% of the variance in perceived employability, suggesting it is a highly influential factor in preparing students for the workplace.
- Independent Samples **T-Test** t-statistic = 12.23
- p-value = 0.00000 (highly significant)

Since $p < 0.05$, we **reject the null hypothesis**.

Hypothesis 1 is **accepted**. Students with mentorship exposure demonstrate **significantly higher awareness** of the Wage Code 2019 and related labor reforms.

Linear Regression Analysis

- Coefficient = 0.98
- $R^2 = 0.716$ (explains 71.6% variance)
- p-value < 0.001 (based on model significance)

Since R^2 is high and the model is significant, we **reject the null hypothesis**.

Hypothesis 2 is **accepted**. Internship experience is a **strong predictor** of perceived employability among students.

RECOMMENDATIONS

1. **Embed Labor Law in Curriculum:** Introduce updated modules on labor law reforms, especially the Wage Code 2019, within HR and Business Law electives to enhance regulatory preparedness.

2. **Strengthen Mentorship Programs:** Partner with HR professionals from leading IT firms to provide real-world insights through structured mentorship and practical case studies.
3. **Leverage Alumni Networks:** Institutionalize alumni-led mentoring, HR masterclasses, and policy walkthroughs to bridge academic learning with workplace expectations.
4. **Enhance Internships with Compliance Focus:** Design internships around labor law application, payroll restructuring, and HR policy audits to increase legal exposure.
5. **Set Up Policy Labs & Legal Clinics:** Use simulations and legal case exercises to develop hands-on skills in grievance redressal and compliance management.
6. **Faculty Immersion in Industry:** Encourage HR faculty to participate in industry FDPs or sabbaticals for real-time exposure to labor law practices.
7. **Utilize Digital Platforms:** Integrate tools like Labour.gov.in, SHRM India resources, and compliance apps into learning modules for wider reach and interactivity.
8. **Ongoing Student Assessment:** Use quizzes, capstones, and mock audits to regularly assess legal readiness and application skills.
9. **Collaborate with Think Tanks:** Work with NHRDN, FICCI, and labor law institutes for curriculum validation and industry-aligned training.
10. **Monitor Employability Dashboards:** Track students' legal awareness and compliance confidence using structured indicators and feedback systems.

Key Findings:

- **Industry Mentorship Enhances Legal Awareness:** Students who participated in structured industry mentorships demonstrated a significantly higher understanding of labor law reforms, notably the Wage Code 2019, compared to their peers.
- **Internships Boost Employability Confidence**
Internship experience strongly correlates with students' confidence in workplace readiness, particularly in managing HR tasks and compliance responsibilities.
- **Alumni Engagement Strengthens Practical Readiness**
Alumni-led sessions contribute meaningfully to students' preparedness for HR roles by offering exposure to real-world legal practices and expectations.
- **Curriculum Lacks Practical Reinforcement**
Standalone academic modules on labor laws showed limited influence on student confidence regarding compliance. Practical exposure through projects or mentorships is necessary to bridge this gap.
- **Compliance Tasks Erode Student Confidence**
Many students reported discomfort or low preparedness in dealing with labor compliance functions, indicating a disconnect between academic learning and functional application.
- **Strong Demand for Experiential Learning Models**
There is a clear preference for simulations, legal audits, and HR policy walkthroughs, highlighting the importance of experiential methods in enhancing employability and legal awareness.

Scope of the Study:

This research is focused on assessing the role of **industry mentorship** and **alumni engagement** in bridging the employability skill gap among **management students in India**, specifically in the context of **labor law awareness and professional readiness**. It examines how experiential learning tools can reinforce understanding of recent legal reforms such as the **Wage Code 2019** and prepares students for compliance-related roles in HR functions. The scope extends to:

- B-Schools and management institutions in urban centers (e.g., Mumbai, Pune).
- The evaluation of learning strategies such as mentorship, internships, curriculum content, and alumni programs.
- Legal preparedness for industry-specific demands, especially in IT, HR consulting, and corporate law compliance roles.

This study does not generalize findings beyond business and management education or non-urban settings.

CONCLUSION

The study establishes a critical linkage between **experiential learning** through mentorships, internships, and alumni engagement and enhanced **legal awareness** and **employability readiness** among management students. As labor laws in India undergo transformative shifts with reforms like the Wage Code 2019, future HR professionals must not only understand policy content but also its application in live business contexts.

Traditional classroom instruction, although foundational, needs to be **complemented by real-world exposure**, where students internalize concepts through problem-solving, stakeholder interaction, and compliance challenges. Institutions must evolve into **industry-integrated learning ecosystems**, where students are continuously mentored, monitored, and mobilized toward regulatory and professional excellence.

This research advocates a **pedagogical transformation** from content-heavy learning to experience-driven employability training to ensure that management students are both **job-ready and law-ready** for a complex, digital, and compliance-focused future of work.

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CHANGING TREND IN ONLINE SHOPPING - A STUDY OF MUMBAI SUBURBS

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ABSTRACT

In the fast-growing world, consumers are ready for upgraded and modern technology to make their purchases. Many of the consumers in different age groups are finding their ways to make their purchase online through various platforms available. It is seen that there are some of the driving factors, which are trending in the online marketers. These factors influence the growth of online shopping and deliver a good profit to the marketers as well as to the consumers. The introduction of Artificial Intelligence (AI) strategies have added to the trend on online shopping. Other trending factors, attracting online consumers are voice search engines, personalized services, Chabot's, difference modes of payment, subscriptions and discounts and many more. The present paper is the study to gain insight on the trending pattern of online shopping and their advantages to the marketers and the consumers. For the study a sample of 200 consumers from different backgrounds are taken into consideration. Random sampling is adopted for the study design and the data is collected through the Google form. The results of the study indicate that the modern AI techniques and Machine Intelligence is gathering huge potential in the online business.

Key words: Artificial Intelligence, Chabots, Voice search engines, online shopping

1. INTRODUCTION

In the contemporary world internet is playing an important role in all different types of businesses. It has facilitated the development of business. The world is becoming techno savvy. The use of online market not only in urban areas of the nation but also the spread is over to the rural areas. Advanced Technologies and different type of applications used in computers and mobiles are encouraging the new buyers to shop online. Past few years it has been seen that there are different e commerce companies, which have come up with different type of marketing strategies just to attract large number of buyers. Various types of marketers, which are, involved in such type of businesses Amazon, Flipkart, Snapdeal, Jabong, Paytm, Myntra, etc. Amazon and Flipkart have emerged as the most important online firms selling the products at a cheaper rate to the customers. However, in the recent days it has been found that then has been increasing competition among the firms. This competition has left the firms to build in different strategies to pull in the customers. The purpose of the present research is to analyze the changing trend of online shopping customers in Mumbai suburbs. The study is relevant for the online firms to increase their marketing strategies technically.

2. LITERATURE REVIEW

- 2.1. Consumer are highly influenced by the advertising, price of the product, other promotional activities Kumar & Chawla (2017) states in their research paper that the buying pattern of the online used, income or pocket money available, and other factors such as the brand and other people's recommendation concerning the product.
- 2.2. Saini (2017) in her paper talks about the vast literature available on digital marketing. She talks how social media plays an important role to promote the growth of digital marketing. Paper talks about the patterns and trends related to social media as a tool of marketing over the past few years. This paper represents an exploratory effort into direction and analyses existing social media marketing practices and tools, their benefits and concerns associated with this type of marketing channel.
- 2.3. R. Rajendra & S. Asok (2017) in their paper talks about the reasons for failure of online shopping companies and the turnaround strategies used by them. In spite of spending huge amount of money for promotions and providing heavy discounts to its consumers, they are not able to perform well. Invariably, all of the companies are encountering same issues of profitability and they became clueless in the part of turnaround their operations. They have tried to analyze the complications in the online shopping and provide suggestions for the companies to use appropriate turnaround strategies to convert their operations to profitable one.
- 2.4. Padhi, Dushmanta (2017) describes about the beginning of major directional change of consumer behaviour, from physical stores to virtual stores in the retailing industry. In India, Internet is still considered a new medium to link consumers with retails, and paper says that Indians are still attached to the traditional brick and mortar stores; they consider online shopping as a risky alternative. In this study, author has attempted to find out the factors leading to perceived risk with online shopping. Reliability co-

efficient for the scale containing 18 variables was satisfactory and factor analysis generated six major factors, product risk, financial performance risk, psychological risk, time risk, delivery capability risk and website performance risk.

- 2.5. Bishnoi, Sunita & Mittal, Archana (2017) said that retail market scenario has totally changed since the advent of online shopping. However, it is a very recent phenomenon in the field of e-commerce but due tremendous advantages, it has gained popularity over the world wide from traditional method of shopping. It is believed to be the future of shopping in the world.
- 2.6. Chauhan, Gauri and Jain, Ruchi (2017) talks about the impact of demonetization on the online transactions. There has been a great turbulence in the Indian economy with the announcement of demonetization of Rs. 500 and Rs. 1000 notes. Demonetization is a term used when there is act of stripping a currency unit of its status as legal tender. This move had been taken in order to eliminate the use of black money and fake notes by reducing the amount of cash available in the economy.
- 2.7. D. Jigyasha and Kaur Japneet (2017) talks about the consumer preference towards online shopping and traditional shopping. This era of business is marked with the high degree of dynamism. Due to technological advancement, shopping at the click of mouse is gaining popularity in not only today's generation but also all age groups of the population. Online shopping has given the consumers the choice to buy anything, anywhere and any product, regardless of its location. It has come up as a boon for all types of consumers and it has something to offer for everyone. It gives edge to the customers over traditional shopping because of advantages like time saving, low price, convenience, all time shopping accessibility, broad availability of products but involves the risk of personal privacy and transactional security.
- 2.8. Singh, Ranbir (2017) this paper examines the functioning and performance of websites of the healthcare industry. Websites of Medical tourism facilitators, hospitals and government organizations have become effective marketing tools in healthcare industry. Therefore, it is necessary to analyze the websites' contents, designing and periodical up gradations for maintenance of reliability and credibility to improve their performance.
- 2.9. Samson, M. Regina (2011) The Internet and web technologies had a great impact on the way companies run their businesses, especially when it comes to a complex business networks such as supply chains. The set of advanced web technologies called web 2.0 produced a lot of hype, but we have not seen concrete & tangible business effects and value creation of these technologies such as RSS and ATOM feeds, web services, Javascript and AJAX, web scripting, Mashups, programming frameworks and wikis.
- 2.10. Leake, William. And Vaccarello, Lauren. (2012) Search engine optimization uses words and data to propel sites to the top of search results. Some marketers love stringing words together and those who dread writings. There are also two types of marketers who work with data: those who love numbers and those who claim that numbers make their brains hurt. Creative types who invest in the emotional punch of a cool design or a resonant slogan may be prone to hate. SEO serves up the right results for the right person; it applies data to word choice, at the right time & in the right format.

3. OBJECTIVE OF THE STUDY

With the aim of analyzing the current trend online shopping in Mumbai suburbs, the main objective of the study is to check with the present status of online shopping by evaluating the type of online shopping, marketing strategies adopted by online companies and demographic details of the online customers. At the same time, the paper also evaluates what are the features used by the customers very frequently when they shop online. This will enable the researcher to conclude about the recent trends in online shopping.

4. DATA COLLECTION

4.1. Primary Data

In order to fulfill the objectives set out, a sample study was undertaken using a well – framed questionnaire, which was duly filled in by the respondents. Respondents of varying nature were selected based on the important aspects such as their Age, Educational qualification, Occupation and so forth. A structured questionnaire was pretested and suitable modifications will be carried out later.

4.2. Secondary Data

The primary data was supplemented by enough secondary source data. The secondary data pertaining to the study was gathered from books, journals, internet, and by utilizing the well –equipped libraries at different

places. It was utilized to get the necessary and the latest information required for the study. Further, the secondary data was collected from leading journals, the internet and the encyclopedia etc. A number of standard textbooks were referred to obtain the pertinent literature on the topic.

4.3. Discussion and Informal Interviews were carried out.

5. SCOPE OF THE STUDY

This study is confined only to Indian online users particularly Mumbai suburbs. This study has been conducted to analyze the changing trends in online shopping in Mumbai suburbs. Total 200 respondents in the age group of 20 to 50 years are taken into consideration. These respondents are using online channels to make their purchases.

6. ONLINE MARKETING AND CHANGING TREND

6.1. Definition of E-Commerce

Electronic commerce or e-commerce refers to a wide range of online business activities for product and services. It also pertains to “Any form of business transaction in which the parties interact electronically rather than by physical contact.”

E-commerce is usually associated with buying and selling over the internet, or conducting any transaction involving the transfer of ownership or rights to use goods or services through a computer- mediated network.

E-commerce is the use of electronic communications and digital information processing technology in business transactions to create, transform, and redefine relationships for value creation between or among organizations, and between organizations and individuals.

6.2. Digital Marketing

According to the Digital Marketing Institute, Digital Marketing is the use of digital channels to promote products and services to consumers and businesses.

Digital marketing includes SEO (Search engine Optimization), content marketing, Search engine marketing, email marketing, content automation, campaign marketing, e- commerce marketing, social media marketing, social media optimization, display advertising, e-books option disks , games and any other form of digital media, it also extends to non-Internet forms of digital sources as SMS or MMS in phones.

The companies undertaking digital marketing focus on a customer centric approach towards its customers. The customer centric approach focuses on enriching customer value by reducing the efforts put by the customers. Their efforts to make purchase are reduced as they get their products delivered at their doorsteps. Digital marketing helps to create a cordial relationship between dealers and the buyers. The online traders such as Flipkart, Amazon, and Snap deal and so on with the help of their warehouses supply goods from the dealers to the buyers.

6.3. Types of Digital Customers

A research study was conducted by Digital Think tank GroupM Next, in which the company examined more than 168000 purchases of consumer electronics, why and where the buyers prefer going online. The research discovered some patterns in the data. They succeeded in dividing the online buyers into six different groups. These groups behaved in different ways and relied on some channels more than others rely and took distinct steps before making their purchase decision.

6.3.1 Around one-third (29 percent) of online buyers fell in the group, “Basic Digital Consumers.” This group has no problem in making their purchases online. They use search, retail and brand sites. They act similar to the way the consumers did back in the “good old days.”

6.3.2 The second group is called “Retail Scouts” and its percentage falls to 22 percent of buyers. This group takes faster purchase decisions (Averaging only three steps per purchase). They prefer search and retail sites such as Amazon and Walmart to brand sites, and are more comfortable using mobile and tablet devices, even when they are inside their homes. They are the most receptive group to digital coupons.

6.3.3 The next group, “Brand Scouts”, is similar to the previous group; these constitute to 20 percent and make quick decisions as well and also place great reliance on paid search but prefer specific brand sites to retail sites and therefore are more loyal. Their decisions are less likely to be dependent on price and are more dependent on features and benefits such as free shipping and money-back guarantees.

6.3.4 The fourth Category that constitutes to 16 percent of the consumers in the study is the “Digitally Driven Segment.” They give lot of importance to convenience and will avoid going to a store. They are also more

receptive to advertising. Buyers in this group are 30 percent more likely to find advertisements valuable than other groups, especially paid search ads.

6.3.5 The fifth group, “Calculated Shoppers,” takes a long time to make their purchase (14 steps on an average). They will calmly go through all the options available to get the best deal. Buyers in this group are likely to be “show roomers” and will make the use of their mobiles to make price comparisons when they are close to making a purchase. This group is likely to use search and are responsive to advertising that offers discounts and specials.

6.3.6 The Final Group covered in the GroupM Next study was “Eternal Shoppers.” This group includes only 2 percent of the purchasers, but they stand out in the extremely long path to purchase (35 steps). They will make a thorough research on every online platform before making a purchase but they typically prefer paid search to navigate between them.

6.4. Factors responsible for changing trend in the sector of E-Commerce:

E-commerce has become a very important tool in the present day world. It has become mandate to be able to go hand in hand with the present technology, for doing so one has to join the e-commerce to compete with the rest of the world. Owners have to be constantly ready to cope up with the technological advancements and adopt them consequently. let us discuss some of the importance of e-commerce:

6.4.1 Customer Convenience:

It provides utmost convenience to the customers as they can get a variety of choices without moving out of their comfort zones, just at a click of button. They can also make comparisons of the same products from different online sellers and purchase the product at the most convenient prices.

6.4.2 Service available for 24X7:

This is the other biggest advantage of shopping from e-commerce companies, they have the benefit to purchase the goods at their own convenience, i.e. at any hour of the day and their order will be booked and later delivered at their doorstep.

6.4.3 Connect the globe:

The e-commerce websites provides services all around the globe. Therefore, they have the chance to reach and connect with the globe. This also results to higher turnover and success to their company.

6.4.4 Catch Customers on Social Media:

Today due to the popularity of social media sites, the e-commerce companies have the scope to reach to the bigger audience to sell their products. This has also given rise to additional means of advertising apart from Radio, Television, Newspapers and Magazines.

6.4.5 Attract New Customers with Search Engine Visibility:

It is believed that physical retail is run by branding and relationships, and online retail is driving by traffic that comes from search engines. Though it is not very popular among the customers to follow a link they come across in the search engine results and reach an e-commerce website that they must never have heard of.

6.4.6 Offer Product Datasheets:

E-commerce companies provide description and details of its products from an online product catalog. It has become convenient for the customers to get information about the product at any time of the day. Through this information, the customers and prospects can make a purchase decision of the products of the company.

6.4.7 Comprise Warranty Information:

E-commerce companies give information related to the warranty involved in some products within the e-commerce shopping cart. They also make sure that customers are aware of important terms and conditions that are associated with the purchase of their products.

6.4.8 Decreasing cost of inventory Management:

Because of e-commerce companies, the sellers can decrease the cost of managing their inventory of goods that they can automate the inventory management using the web-based management system. This helps them to save on their operational costs.

6.4.9 Keep Eye on Consumers' Buying Habit:

The e-commerce companies can easily keep an eye on the customers' buying habits and interests to cater towards their requirements. By fulfilling their needs constantly, companies can improve their ongoing relationship with the customers and build a long-lasting relationship with them.

6.4.10 Competence:

E-commerce companies can effectively and competently conduct their business, as their setting-up cost is very low as compared to expanding their businesses with huge number of brick and mortar locations. Limited number of licenses and permits are required to start-up an online store than a physical store. A lot of finance can be saved by using less number of employees to perform operations such as billing customers, Managing inventory and more.

6.4.11 Allow Happy Customers to Sell your Products:

Feedback plays an important role by way of comments and reviews by the previous customers to improve the sales of the e-commerce companies. This option cannot be available in physical stores; therefore, this option available with the online sellers is an additional advantage to them. It is important to disclose the customer's testimonials, reviews and product ratings as such things will help the customers to purchase the company's products.

6.4.12 Economical:

Unlike the physical stores, e-commerce companies need not to invest their money in store, insurance or infrastructure as all they need is an idea, unique products and a very well designed website to reach their precious customers to sell their products and services. This aspect makes the e-commerce a lot more economical and reasonable choice for business.

6.4.13 Boost Brand Awareness:

E-commerce companies can boost their brand awareness in the market. Developing pages that can be indexed by search engine crawlers is one of the best ways to enhance their website's search engine optimization and enhance the target audience in the site.

6.5. Types of E-commerce

E-commerce refers to buying and selling with the help of the web. However, to be more specific, e-commerce has been divided into six major types:

They are as follows:

Business - to - Business (B2B)

Business- to- Consumer (B2C)

Consumer- to- Consumer (C2C)

Consumer- to- Business (C2B)

Business- to- Administration (B2A)

Consumer- to- Administration (C2A)

6.6. Trends in Growth of E-commerce

E-commerce sales worldwide will continue to grow in 2017, rising 23% to reach US\$2.3tn. According to marketer's estimates, e-commerce sales will account to one-tenth of total retail sales worldwide in 2017. China and the US will amount to US\$1.6tn in e-commerce sales in 2017, representing almost 70% of global e-commerce. While e-commerce in the US will grow by 15% in 2017, the Asia-Pacific region will have a 30 % growth rate in 2017, becoming a clear leader in global e-commerce development. This e-commerce growth in Asia Pacific is particularly driven by very high mobile commerce sales.

Double-digit growth will continue until 2021, according to marketer's forecast. Mobile is a key driver of e-commerce growth in North America. In 2017, M-commerce will account for 34% of e-commerce sales in the US, ahead of Canada's share of 29%. Consumers increasingly feel comfortable using a mobile device to shop; during Amazon's Prime Day in 2016, mobile app orders more than doubled compared to 2015.

Western Europe will record the slowest e-commerce sales growth rate of any region over the forecast period. Sales will increase by 12% to reach US\$337bn in 2017. the share of total sales generated via e-commerce in 2017 will be the same for western Europe as in North America at 9%. By 2021, e-commerce will represent 11% of retail sales in Western Europe.

The UK is a clear e-commerce leader in Europe, with predicted sales of US\$110bn in 2017. E-commerce sales are predicted to grow at a faster rate in the UK (15%) than in other Western European countries in the 2017-2021 periods.

Very slow growth in e-commerce is predicted for the Middle East and Africa, online shopping will represent just 2% of total sales in the region in 2017 and this figure will not increase significantly up to 2021. Thus far, e-commerce activity has been hampered for socio-economic reasons and by consumer concerns about data security, a preference for paying cash and unreliable shipping. Amazon's acquisition of Souq.com, the region's largest e-commerce platform, may spur e-commerce growth in the Middle East.

In India, 72% of retail e-commerce sales will come via mobile devices in 2017, second to China. M-commerce sales in India will total US\$16bn in 2017, an increase of 61% on the previous year.

E-commerce has changed the outlook of traditional marketing, which was restricted to a limited audience. The definition of Marketing with context to traditional marketing was very restricted; the scope was very small, as compared to the Market, after the introduction of E-commerce.

E-commerce plays a very fundamental role in today's Modern era, where the audience is huge and not confined to a limited area, unlike the era of traditional marketing.

7. RESEARCH FINDINGS

Table 1: Demographic Aspects of the respondents

Demographic Details	Components	Respondents	Percentage (%)
Age	20-30	145	72.5
	30-40	25	12.5
	40-50	30	15
Gender	Male	88	44
	Female	112	56
Marital Status	Married	52	26
	Unmarried	148	74
Education	Upto 12th	50	25
	Graduation	80	40
	Post-Graduation	40	20
Occupation	Other	30	15
	Non-Earning	90	45
	Public Service	20	10
	Private Service	30	15
	Private Ventures	50	25
	Self Employed	10	5
Size of Family	Upto three	108	54
	Four to Five	43	21.5
	Six to Seven	27	13.5
	Eight to Nine	14	7
	Above Nine	8	4
Monthly Income	Below Rs. 20,000	52	26
	Rs. 20,000 to 30,000	70	35
	Rs. 30,000 to Rs. 40,000	36	18
	Rs. 40,000 to Rs. 50,000	30	15
	Rs. 50,000 and above	12	6

Table 2: Number of respondents engaged in buying commodities/services in stores after searching online

Responses	No. of Respondents	Percentage
Certainly Not	62	31
Hardly	46	23
Occasionally	60	30
Frequently	20	10
Very Frequently	12	6
Total	200	100

Table 3: Number of respondents engaged in buying commodities/services online after searching in store

Response	No. of Respondents	Percentage
Certainly Not	0	0

Hardly	40	20
Occasionally	50	25
Frequently	44	22
Very Frequently	66	33
Total	200	100

Table 4: Attractions influencing buyers

Activities	No. of Respondents	Percentage
Various discounts/offers	80	40
Multiple Offers	40	20
Add-On Offers	24	12
Digital Promotions	56	28
Total	200	100

Table 5: Criteria for choosing online retailers

Criterion	Certainly Not	Hardly	Occasionally	Frequently	Very Frequently
Availability of the Commodities	8	34	42	54	62
Amount	4	26	55	40	75
Easy Accessibility	6	18	68	34	74
Return Policy	12	25	56	41	66
Quality of the Commodities	10	18	44	38	90

MAIN FINDINGS OF THE STUDY

- Previous experience of shopping online is available with almost all the respondents.
- The respondent's family income affects the online buying behavior. There is direct positive relationship between both the variables.
- People feel that the marketing strategies planned with the help of Artificial Intelligence and Machine learning is pushing them to make more number of purchases.
- They even believe that the tailor-made approach with the combo offers are very useful and with discounted rate. This type of approach was not available earlier even in online shopping. The increasing amount of competition have given rise to such a situation.

8. CONCLUSION

From the research study, the author concludes that the world of online shopping is changing tremendous. This change will take a heap in next few decades. The proportion of traditional mode of shopping will be diminishing and with the advent of new companies and increasing competition, consumers will get a twice benefit with not only the cost but also the product quality. With the technological progress, various modern techniques such as Artificial intelligence or Machine Learning have appeared. This has enabled the companies to understand the preferences of the consumers without even asking them personally. Consumer-centric approach is thus possible. In online shopping, consumers feel respected and they feel that their demands are met under one roof. At the same time, the online marketers have solved most of the problems, which were existing earlier with the online channel of marketing. This have enabled an error-free transaction, which was demand by the consumers in this fast-moving world.

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IMPACT OF DIGITAL STORYTELLING ON CUSTOMER ENGAGEMENT: A STUDY

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ABSTRACT

In today's digital landscape, storytelling has become a pivotal strategy for brands aiming to foster deeper connections with consumers. This research investigates the relationship between digital storytelling and customer engagement by combining both primary as well as secondary research methodologies. The primary research involves analyzing consumer perspectives through structured questionnaires to understand how storytelling influences their engagement, emotional connection and attention with brands. Complementing this, secondary research evaluates behavioral engagement metrics-such as likes, shares, and comments-on platforms like Instagram and YouTube to measure the concrete impact of storytelling content. The study provides a double-layered understanding of how narrative techniques affect both perceived and actual customer engagement. Findings aim to bridge the gap between consumer sentiment and measurable interaction, offering actionable insights for brands seeking to enhance digital engagement through compelling storytelling.

Keywords: Digital Storytelling, Customer Engagement, Social Media Marketing, Consumer Perception, Emotional Branding, Instagram Analytics, YouTube Engagement, Brand Communication, Narrative Marketing, Primary and Secondary Research

1. INTRODUCTION

In the fast-paced digital era, where consumer attention spans are shrinking and brand choices are expanding, traditional marketing approaches have started to lose their relevance and impact. Audiences today no longer respond to static advertisements or one-way messaging. Instead, they seek connection, meaning, and authenticity in the content they consume. During this transition, digital storytelling has emerged as a transformative tool-one that goes beyond promoting products and instead focuses on summoning emotions, sharing values, and building lasting relationships.

Digital storytelling weaves together narrative elements, visual content, and emotional appeal to create experiences that resonate with audiences. It transforms brands into relatable entities with a voice and a story-inviting consumers not just to buy, but to believe, to connect, and to belong. But how effective is this strategy in truly engaging consumers? Is storytelling just a creative trend, or does it directly impact on how consumers interact with, relate with, connect with and respond to a brand?

Customer engagement, once an abstract idea, has now become quantifiable through measurable digital interactions -likes,shares,comments and other forms of consumer participation. These metrics provide rich insight into the depth of consumer involvement, brand recall, and emotional investment. Yet, the true influence of storytelling on this engagement remains an area that warrants deeper exploration.

Furthermore, the rise of digital storytelling is closely linked to the widespread use of electronic devices, which has transformed how consumers engage with content. With people spending significant time on their mobile phones, digital platforms have become the primary space for brand-consumer interaction. This shift allows brands to enclose their narratives directly into consumers' daily routines, creating more opportunities for engagement. As users scroll through content, storytelling that is authentic, relatable, real and emotionally compelling tends to stand out prompting interactions such as likes/share and comments. These responses not only indicate immediate interest of consumers but also reflect the extent to which they connect with the brand's story over time. In this context, digital storytelling becomes a key driver of sustained customer engagement, shaping how consumers perceive, respond to, and remain loyal to a brand in the long run.

This study sets out to examine that very question. It aims to investigate the impact of digital storytelling on customer engagement by analysing how audiences respond to narrative-driven content in the digital space. By doing so, it seeks to understand how stories told by brands online influence what people do and how they feel about those brands-ultimately revealing how storytelling shapes behaviour, builds loyalty, and transforms passive viewers into active participants.

2. LITERATURE REVIEW

Digital storytelling has emerged as a powerful tool in modern brand communication, amalgamating narrative techniques with digital technology to emotionally engage audiences. According to Pulizzi (2012), storytelling in the digital age shifts marketing from promotional messages to value-driven narratives, offering brands a way to form deeper and more human connections with their audience. This is particularly important in an age where consumers are bombarded with content and attention spans are shrinking, particularly in the digital age.

Research by Ashley and Tuten (2015) emphasizes that brand storytelling on digital platforms is more effective when it is authentic, emotionally impactful, and aligned with brand identity. Their findings show that storytelling content—such as behind-the-scenes footage(BTS), customer endorsement, or founder stories—generates significantly more engagement than straightforward advertisements. Similarly, Gensler et al. (2013) argue that when consumers are emotionally invested in a story, they are more likely to share, comment, or develop long-term loyalty toward a brand.

Chong et al. (2021) explored the role of immersive digital narratives in increasing emotional connection and brand recall, stating that storytelling enhances the perceived authenticity of the brand and drives stronger behavioural responses. However, while their work effectively captures emotional outcomes, it lacks evidence-based validation through actual user engagement data such as likes, shares, or comments.

Matzner et al. (2015) suggest that storytelling strategies differ across digital platforms, and user engagement is influenced by context, design, and interactivity. But again, their study is largely conceptual and doesn't quantify the impact of specific storytelling elements on engagement metrics.

Research Gap and Contribution of the Study While the existing literature provides a strong foundation for understanding how storytelling affects consumer behaviour, several gaps remain—particularly around the use of observed engagement data and understanding consumer preferences and habits. This study addresses the following key gaps:

1. Platform Usage Behaviour is Underexplored:

Few studies investigate how frequently consumers use different digital platforms and how this influences their engagement with storytelling content.

2. Content Preferences are Not Quantified:

Although emotional and visually rich content is known to perform well, there is little research quantifying what types of brand content capture the most attention from a consumer perspective.

3. Lack of Consumer Perspective on Storytelling:

Prior work has not adequately explored how consumers themselves perceive storytelling, or what narrative elements (e.g., relatability, visuals, authenticity) make them feel more emotionally attached to a brand.

4. Limited Use of Behavioural Engagement Data:

Most prior studies are conceptual or survey-based. There is a lack of research that uses actual post-level metrics (likes, comments, shares) to derive engagement percentages and connect them to storytelling techniques.

5. Lack of Integrated Insights:

Very few studies combine quantitative behavioural data with qualitative user insights to draw a panoptic picture of engagement and brand storytelling effectiveness.

Contribution of This Study

- Collecting primary engagement data from digital content—including number of likes, comments, and shares—and calculating engagement percentages to assess performance.
- Exploring consumer preferences regarding platform usage, content types, and storytelling styles that make them feel more connected to a brand.
- Linking specific storytelling elements to actual consumer behaviours, allowing for deeper insights into what drives engagement.
- Providing practical recommendations to marketers and brand strategists on optimizing digital storytelling for maximizing reach, emotional impact, and long-term loyalty.

3. RESEARCH METHODOLOGY

3.1 Research Objectives

1. To assess the impact of digital storytelling on customer engagement across social media platforms like Instagram and YouTube.
2. To analyse consumer preferences and emotional responses toward various forms of brand storytelling content (e.g., emotional, humorous, informative).

3.2 Research Design:

This research study follows both qualitative and quantitative analysis of data. Qualitative analysis includes presentation and analysis of data collected via questionnaire which was administered to a sample population of respondents. This analysis allows us to have a closer understanding of the phenomenon of customer engagement and how it can be related to digital storey-telling.

Quantitative analysis on the other hand includes administration of Chi-square test on the data collected from secondary sources. Secondary data on followers-based customer engagement was collected from the select social media platforms for the select brands and the collected data was numerically adjusted as per the requirement of Chi-square test for independence

3.2.1 Qualitative Analysis

3.2.1.1 Objective

To gain insights into consumer perspectives on brand storytelling's influence on engagement, emotions, and purchase behaviour.

3.2.1.2 Data Collection

- **Source:** Structured questionnaire administered online through Google Forms.
- **Instrument:** Close-ended questions have been conducted with Likert-scale, multiple-choice, and some open-ended questions.

3.2.1.3 Sample

- **Size:** 100 respondents
- **Sampling Method:** Convenience sampling
- **Respondents:** Individuals under 18 and above 30 years

3.2.1.4 Key Focus Areas

- Frequency and platform of brand engagement
- Content preferences (emotional, humorous, educational, motivating etc.)
- Importance of storytelling in brand perception
- Emotional responses and purchase influence on consumers
- Memorability compared to traditional advertisements
- Attitude towards fake/non-authentic storytelling
- Willingness of the consumer to engage with new brands based on storytelling

3.2.2 Quantitative Analysis

3.2.2.1 Objective

To quantitatively analyse the impact of storytelling on engagement metrics of brands on digital platforms like Instagram and YouTube

3.2.2.2 Data Source

Publicly available data from brand accounts on Instagram and YouTube.

3.2.2.3 Data Processing

- Classification of brands based on digital storytelling presence (Yes/No).
- Calculation of engagement rates:
 - Instagram: Likes + Comments + Shares relative to Followers

- YouTube: Likes + Comments relative to Followers

3.2.2.4 Variables

3.2.2.4.1 Digital Story-telling (Independent variable)

According to Pulizzi (2012), digital storytelling is “the art of communicating brand narratives using digital formats that engage audiences emotionally and encourage deeper interaction.”

The classification of brands (e.g., US Polo Assn., Raymond) as not actively engaging in digital storytelling was obtained through an OpenAI's ChatGPT, based on an evaluation of their content presence and storytelling formats across digital platforms.

3.2.2.4.2 Customer Engagement (Dependent variable) Definition

Engagement rate measures the audience's active interaction with content relative to its reach (followers or views), reflecting how compelling and engaging the content is (Chaffey, 2022).

Interpretation Scale

Engagement Rate (%)	Interpretation
< 6%	High Engagement
>6%	Low Engagement

Engagement rate formula

$$ER = (\text{Interactions} \div \text{Followers}) \times 100$$

-Hootsuite. (2024). Social Media Metrics That Matter. Retrieved from <https://blog.hootsuite.com>

3.2.2.5 Statistical Tools Tool Used

Chi-Square Test of Independence to examine the relationship between storytelling presence and engagement levels.

3.2.2.6 Hypotheses Null Hypothesis (H_0):

No significant relationship exists between storytelling and customer engagement.

Alternative Hypothesis (H_1):

A significant relationship exists between storytelling and customer engagement.

4. DATA ANALYSIS

4.1 Qualitative analysis

The purpose of this section of the study was to collect individual opinions and feelings about brand storytelling. To learn more about how individuals relate to brand content more deeply, 100 participants were given access to an open-ended questionnaire. A variety of topics, including emotional impact, relatability, attention, trust, and a personal connection to brand tales, were intended to be covered by the questions. The next sections address the insights gleaned from these replies, emphasizing recurrent themes and patterns that contribute to the understanding of how storytelling affects customer engagement.

4.1.1. Emotional Triggers in Storytelling

Question Type: Open-ended

Instrument: Descriptive qualitative (text responses)

Purpose: To identify which storytelling elements, resonate most emotionally with Gen Z.



Figure 1

In figure 1, respondents most commonly mentioned authenticity, humour, relatability, and behind-the-scenes content. These elements foster emotional resonance and brand connection.

4.1.2. Influence on Purchase Behaviour

Question Type: Yes/No

Instrument: Binary close-ended question

Purpose: To measure whether storytelling impacts purchasing decisions

Have you ever purchased a product because of a brand story you saw online?
100 responses

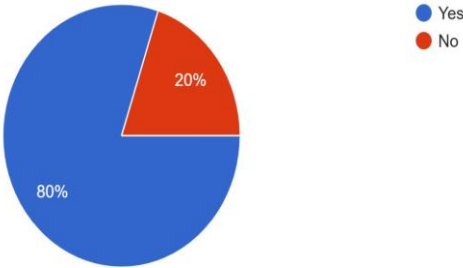


Figure 2

Figure 2 shows that a significant proportion of respondents confirmed purchasing a product after being influenced by a brand

4.1.3. Preference for Storytelling vs Traditional Ads

Question Type: Likert Scale (1–5)

Instrument: Scaled response

Purpose: To compare storytelling with traditional advertising in terms of engagement and effectiveness.

Do you find brand stories more engaging than traditional advertisements? (Linear Scale: 1 = Strongly disagree, 5 = Strongly agree)
100 responses

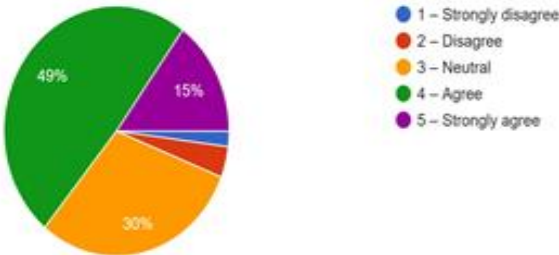


Figure 3

Figure 3 shows that the majority of respondents selected “Agree” or “Strongly Agree” when asked if they find storytelling more engaging than regular ads.

4.1.4. Platform Preference: Instagram & YouTube

Question Type: Multiple-choice

Instrument: Platform-based response selection

Purpose: To identify the digital platforms where Gen Z interacts most with branded content.

Which platforms do you use most to follow or interact with brands?

100 responses

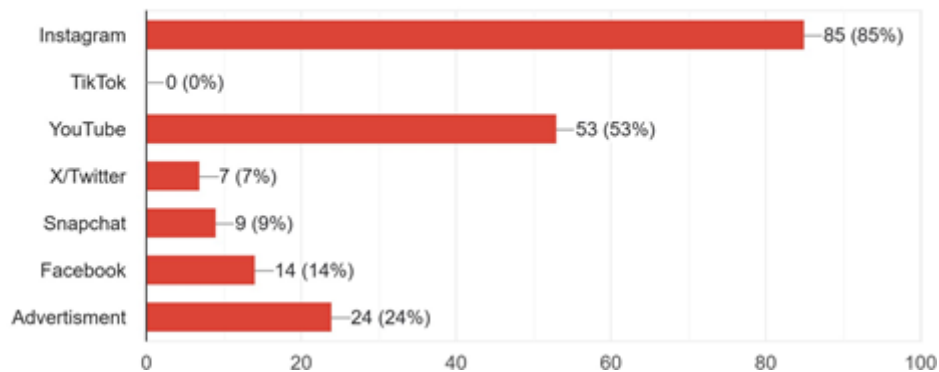


Figure 4

Figure 4 shows that Instagram ranked highest, followed by YouTube, showing a strong visual content preference.

4.1.5. Storytelling and New Brand Adoption

Question Type: Likert Scale

Instrument: Scaled response

Purpose: To examine the influence of a relatable story on willingness to support a new brand.

How likely are you to follow or support a new brand based solely on a relatable and authentic story, before even trying the product?

100 responses

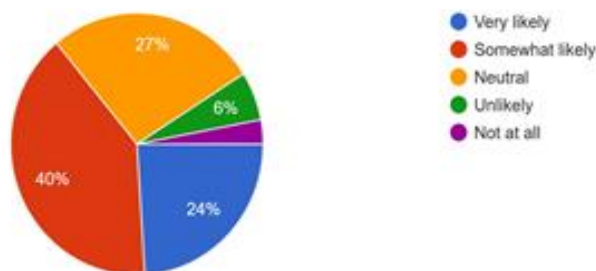


Figure 5

In figure 5 most respondents indicated that they are “Somewhat Likely” or “Very Likely” to follow or support a new brand based solely on an authentic and relatable story.

4.1.6. Authenticity and Trust

Question Type: Multiple-choice

Instrument: Trust-based question (Yes/No/Not Sure)

Purpose: To test the impact of inauthentic storytelling on consumer trust and engagement.

Have you ever unfollowed or stopped supporting a brand because its storytelling felt fake or performative?
100 responses

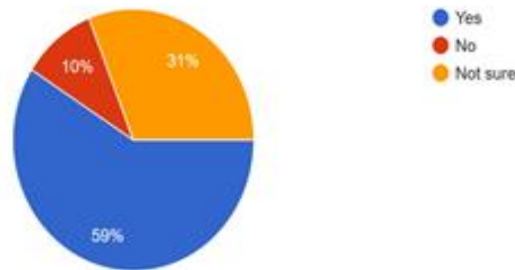


Figure 6

Figure 6 shows a notable number of respondents said they have unfollowed brands that felt fake or performative in their storytelling.

RESULTS

Emotional storytelling was clearly preferred by the participants, who said it was the most captivating and memorable. Warmth, inspiration, and nostalgia all have a big impact on brand memory and engagement. Although humorous content was valued for its entertainment value, it only worked well when it was subtle and relatable. When presented imaginatively, informative content was respected; yet, if it was extremely factual, it was less appealing. In general, stories that were genuine and emotionally charged had the most effects on customer engagement and perception.

4.2 Quantitative analysis

4.2.1 Tabulation of data

In order to establish statistical relationship between digital storytelling and customer engagement, a quantitative approach was followed in this study. Publicly available data from social media platforms such as Instagram and YouTube was observed and recorded to tabulate the information so that required data sets for administration of Chi-Square test for independence are available.

The following tables highlight the analysis of the publicly available data on number of likes, comments and shares on the posts of social media platforms such as YouTube and Instagram handles of select brands. This analysis includes the calculation of engagement rate too:

Table No 1: Brand Engagement Analysis for YouTube

Brand	Total No of subscribers of YouTube channel	Total no of Likes (First 50 Posts)	Total No of Comments (First 50 Posts)	Total no of interactions (Likes + Comments)	Engagement rate {(Total no of Interactions / Total no of subscribers)*100}
1)Nyka	1520000	15773	549	16322	1.073816
2)Amul	522000	390	40	430	0.82375
3)Coach	145000	15768	1983	17751	12.24207
4)Cadbury	624000	9147	793	9940	1.5929
5)Titan	561000	6247	242	6489	11.5668
6)Nike	3100000	500923	11921	512844	24.42114
7)Tanishq	204000	6828	446	7274	3.5656
8)Raymond	86000	4925	374	5299	6.1616
9)United States Polo Association	764000	38860	0(off)	38860	5.0863
10)Lee	5990	2155	313	11804	41.202
11)Life Insurance Corporation of India	122000	193283	3663	196946	161.4311
12)Bajaj	14700	525345	124	525469	3574.619

13)Indian Railway Catering and Tourism Corporation	13640000	6116	646	6762	0.04975
14)Patanjali	11400000	60502	346	60848	0.5337
15)Bharat Sanchar Nigam Limited	168000	6293	1640	7933	4.722

Table No 2: Brand Engagement Analysis for Instagram

Brand	Total number of followers	Total number of likes(First 50 posts)	Total number of shares(First 50 posts)	Total number of comments (First 50 posts)	Total number of interactions (Likes+comments+shares)	Engagement rate {Formula : (Total no of Interactions/Total no of subscribers)*100}
1)Nyka	2900000	54499	8794	16816	80109	2.7623
2)Amul	509000	1628777	89446	2411	1720634	338.042
3)Coach	7900000	637545	39568	9727	686840	8.6941
4)Cadbury	412000	306093	5993	1224	313310	76.04611
5)Titan	609000	268408	3200	1117	272725	44.7824
6)Nike	299000000	5913500	349581	38723	6301804	2.1076
8)Raymond	273000	1203779	949	309	1205037	441.405
9)United States Polo Association	409000	15758	429	157	16344	3.99608
10)Lee	491000	201487	493	189	202169	41.1749
11)Life Insurance Corporation of India	180000	17110	3180	167	20457	11.365
12)Bajaj	48700	46558	835	430	47823	98.199
13)Indian Railway Catering and Tourism Corporation.	564000	3577	284	226	4087	0.7246
14)Patanjali	1400000	12777	1234	218	14229	1.0163
15)Bharat Sanchar Nigam Limited	82300	6148	836	720	7704	9.3608

The following table presents the brands with the status of digital story-telling.

Table No 3:Classification of Brands based on presence or absence of digital storytelling on social media platforms like Instagram and YouTube.

Brands	Digital Story telling (Yes)	Digital Story telling (No)
1)Amul	Yes	
2)Coach	Yes	
3)Cadbury	Yes	
4)Titan	Yes	
5)Nike	Yes	
6)Tanishq	Yes	

7)Nyka	Yes	
8)Raymond	Yes	
Brands	Digital Story telling (Yes)	Digital Story telling (No)
9)United States Polo Association		No
10)Lee		No
11)Life Insurance Corporation of India		No
12)Bajaj		No
13)Patanjali		No
14)Indian Railway Catering and Tourism Corporation.		No
15)Bharat Sanchar Nigam Limited		No

4.2.2 Chi-Square test of independence

As specified in the methodology earlier, to assess the relationship between the chosen variables of the study, Chi-Square Test of Independence was conducted.

With reference to the standards of engagement specified in 3.3.2.4.2 and the brand classifications as per the chosen method specified in 3.3.2.4.1, following table for administration of Chi-square test of independence was generated:

Table No 4 Chi-Square Table

Chi-Square Test of Independence		Customer Engagement		
		High	Low	Total
Digital Story-Telling	Yes	5	2	7
	No	6	2	8
	Total	11	4	15

RESULTS

The test generated following statistics:

- Chi-Square statistic of 0.0244
- P-value of 0.875996

With the standard level of significance being 0.05, the p-value is significantly greater which indicates that result is not statistically significant.

Since there is no evidence of a significant correlation between the adoption of digital storytelling and customer engagement, the null hypothesis (H_0) is not rejected. Stated differently, any apparent variation in customer engagement levels between those who were exposed to digital storytelling and those who were not is probably the result of chance rather than a consistent storytelling effect.

This result suggests that digital storytelling might not have an independent impact on customer engagement levels within the parameters and sample of this study. Engagement may be more significantly shaped by contextual cues or other mediating characteristics. In order to find more profound patterns, future research might look into examining these moderating factors or using more sophisticated metrics of both storytelling quality and engagement intensity.

5. FINDINGS AND CONCLUSIONS

5.1. Findings:

The quantitative analysis employing the Chi-Square test produced a statistic of 0.0244 with a p-value of 0.875996, which is well above the conventional threshold of 0.05. This suggests that the detected correlation between digital storytelling and customer engagement was not statistically meaningful in the present sample. Consequently, the null hypothesis—that there is no relationship between digital storytelling usage and customer engagement—could not be dismissed.

Nonetheless, it is vital to emphasize that this result could be affected by the small sample size. A larger and more representative dataset may reveal more significant differences in engagement (likes, comments, shares). Therefore, although the current research does not reveal a significant independent effect of digital storytelling on engagement metrics, the possibility of such a connection cannot be completely dismissed. Future research

could explore the inclusion of extra variables or moderating elements, like content category, timing of posts, audience characteristics, or the calibre of storytelling.

The qualitative assessment of consumer feedback indicated a distinct inclination towards genuine and emotional narratives. Participants often characterized influential content with terms like "relatable," "authentic," and "inspiring." Emotional narratives, which feature tales of hardship, development, and community influence, were recognized as powerful emotional catalysts, especially among younger audiences like Gen Z.

Moreover, content highlighting behind-the-scenes experiences, customer stories, and mission-focused efforts was discovered to connect profoundly, even when coming from smaller brands such as Nishorama or Benne Café. Although humorous and informative content received appreciation, emotional storytelling continually proved to be the most impactful in influencing consumer perception, brand memory, and loyalty.

5.2. Conclusion

This research offers a detailed insight into how digital storytelling affects consumer involvement and viewpoints:

Regarding quantitative analysis, the study's sample did not reveal any statistically significant relationship between digital storytelling and engagement metrics. The results indicate that engagement is probably influenced by various factors, and with a larger dataset, the impact of storytelling might be clearer.

From a qualitative perspective, genuine and emotional stories evidently showed a significant influence on consumer choices and emotional involvement. These insights emphasize that storytelling is vital for establishing trust, encouraging relatability, and strengthening brand connection, even when these impacts aren't readily quantifiable through numerical measures.

The results emphasize that although digital storytelling might not always lead to quantifiable engagement in every situation, it continues to be an impactful strategic approach for fostering enduring consumer connections and emotional ties to the brand.

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THE IMPACT OF ONLINE FOOD DELIVERY AND FOOD COMMERCE ON COLLEGE STUDENTS: EATING HABITS, FINANCIAL CHOICES, AND SUSTAINABILITY IN INDIA

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¹tanisha.dhandharia591@nmims.in, ²viral.panchal128@nmims.in and ³viraj.poddar130@nmims.in**ABSTRACT**

This study examines the eating habits, food purchasing decisions, and digital influences shaping the lifestyles of college students in India. Using a survey of approximately 101 respondents, we explore six distinct objectives. Our simulated results indicate significant differences and associations in most cases, illustrating the nuanced dynamics between student demographics, behavioral choices, and digital influences. This paper provides comprehensive insights into current food consumption trends among college students and offers practical implications for food service providers, campus policymakers, and marketers seeking to target young adults in India.

Keywords: Food Consumption, College Students, T-Test, Chi-Square Analysis, Online Food Delivery, Digital Marketing, Healthy Eating, Innovative Food Models, India

I. INTRODUCTION

In recent years, the dining habits of Indian college students have drastically changed. Subscription-based meal service platforms like Zomato, Swiggy, and the concept of monthly billed meal subscription have become an integral part of daily routines for numerous people. All of these provide convenience, efficiency, and choice—elements neatly slotting into the space constraints of students having frequent and uncertain schedules. All it takes is one to two clicks on the phone, and meals suddenly arrive at your doorstep, making cooking or even dining out seem like an afterthought for most students.

When you really consider it, student life is already filled with things to deal with—deadlines, lectures, long journeys to classes, perhaps part-time work. Most students have neither the energy nor the time to cook daily, and lots of them reside in hostels where there is no access to kitchen space. Layer on the pressure of exams or societal pressure, and eating at home via food delivery is more an ingrained habit than an additional choice. It is quick, convenient, and even less expensive than dining out at times. But there is another side to it—it tends to promote unhealthy eating habits, over-spending, and an informal reliance that lots of people aren't even aware of at first. This research examines more closely the way these services truly affect students. It investigates what is truly important to them when they choose to eat—is it cost, convenience, or even brand identity? The research looks into this as well as diving into how much students themselves are even aware of health and sustainability, or whether those are buzz terms that are cast aside once hunger strikes. And with newer concepts like cloud kitchens and subscription meals on the horizon, the report examines if those concepts truly can address students' actual needs or if they're merely fleeting fads.

Ultimately, this research is about something bigger than food. We're learning about the daily decisions of young people and the larger forces—technology, peer pressure, money, time—that drive them. The better we understand those habits, maybe there's an opportunity to change, to make better, healthful, sustainable choices, both about the services that are provided but even for students themselves.

II. LITERATURE REVIEW

A. [Patgiri, 2022] studies how urban middle-class youth in India change their eating habits by using food delivery services which align with the evolving technology and changing lifestyles and convenience needs. The study investigates how readily accessible various cuisines drive people toward modern eating behaviors while home-delivery services have turned into regular routine practices. The changing eating habits now impact both what youth consume and their dining patterns since shared dining occasions occur less often while eating alone has become more prevalent. The study finds extensive research evidence about nutrition because regular food delivery orders frequently encourage people to choose high-calorie options which are unhealthy. The article demonstrates how technological developments transform youth food consumption habits by introducing positive and negative impacts that affect their eating behaviors.

B. [Kaur et al., 2021] investigated consumer behavior regarding food delivery apps FDAs through the Theory of Consumption Values TCV to fill gaps in existing literature which mainly examines technology adoption models. The study investigates both practical drivers such as affordability and convenience, and emotional factors like novelty and social perception. Ease of use, service quality, convenience retain their significance

for customer loyalty yet users increasingly prioritize food safety concerns along with health consciousness because they doubt the reliability of online food sources. The decision to adopt FDAs depends heavily on the visibility of peers who already use these devices.

The research uses TCV to examine food delivery behavior and enhances existing knowledge about customer motivations which go deeper than standard factors like convenience and cost.

- C. Shrivastav et al., 2024 investigated India's changing food ordering behaviors brought about by digital technology through a study of Zomato and Swiggy food delivery services. The paper demonstrates how enhanced mobile technology together with better network connectivity has made online food delivery more suitable and available to consumers. The features of straightforward usage and competitive prices together with diverse payment methods and speedy shipment and customized suggestions draw consumers towards the service. The study identifies few key challenges facing the industry related to elevated delivery expenses and matters of quality control along with restaurant vendor dependence. Businesses need to ensure their competitive position through better customer support along with shortened waiting times together with technology-driven user experience development according to the paper's advice. This study exposes missing information within present academic literature about sustainability for business operations, customer retention patterns and behavioral outcomes caused by digital transformation. These findings support current understanding of India's evolving food delivery sector.
- D. Dubey & Jadhav [2023] analyzed the substantial effects which college cafeteria services together with their total environment have on student campus experiences. The paper establishes that students base their food choices on these six elements together with their involvement in campus activities and class participation. Students leave campus to find different food options whenever cafeteria food fails to meet their standards and this results in lower class attendance. Better cafeteria environments with nutritious variety options presented in attractive settings will boost student wellness while encouraging students to become more involved on campus. The paper demonstrates how a well-operated cafeteria improves the total college experience it delivers which in turn augments student lifetime value for the institution.
- E. This research by Kaur [2023] analyzes the impact of Zomato and Swiggy food ordering services on Indian consumer eating habits by highlighting the pivotal role of subscription plans and discounts in this change. The study shows how discounts drive immediate buying habits and grow consumer base through elevated perceived value and enlarged purchase quantity and better app usage. Customers stick to their subscriptions of Zomato Gold and Swiggy One because these models provide special benefits which boost their chances of making frequent orders. After promotional phases users show diminished commitment to using services mainly because students value price more than brand reliability. Consumer discounts act as efficient acquisition tools for businesses yet they might cause both durable pricing problems and focused market competition when implemented excessively. Food delivery companies need to establish sustainable pricing structures which create both profitable operations and attractive deals to establish stability in India's developing market.
- F. The research by [Polke, Tripathi & Chandra, 2022] explores how food delivery firms use discounts and subscriptions to redefine the Indian market. Swiggy together with Zomato have implemented aggressive pricing strategies to build and retain their target demographic consisting of price-sensitive younger consumers seeking affordably priced convenient services [Gupta, 2019]. Continuous discounting strategies in the market lead to weakened profit margins and damaged business viability according to studies by Makwana [2022]. Put in place their Zomato Pro and Swiggy Super subscription strategies to encourage loyalty among users who gain free delivery and are rewarded with special offers according to Shastri (n.d.). Zomato terminated its Pro subscription service demonstrating the difficulties of maintaining subscription programs according to Times Now [2022].
- G. Researchers from [Hasbi et al., 2022] examine how price reductions act as key elements to boost customer participation on online food delivery platforms through their impact on purchase decisions and satisfaction levels. The performance of price reductions works best for acquiring both new customers and reacquiring old customers in situations where cost-effectiveness drives market decisions [Jakpar et al., 2012]. The use of discounts generates feelings of value to consumers who sometimes act on impulse during sales events [Inman et al., 1997] but excessive discounting reduces long-term profitability [Pradana & Novitasari, 2017]. Discount offer clarity together with their fairness levels determine how customers trust and stay loyal to the platform [Suhartanto et al., 2019]. Growing competition in the food delivery industry leads platforms toward offering customized promotions alongside loyalty membership subscription options [Troise et al., 2020].

Research continues to need attention about how custom-made discounting strategies affect consumer loyalty and business sustainability across these platforms [Yeo, Goh & Rezaei, 2017].

- H.** Extension Journal, 2024 conducts research on financial behaviors and food delivery preferences of college students demonstrating that students use online food delivery services twice a week but less than one-fifth tracks their spending which leads to budgeting issues. The research demonstrates that students dealing poorly with their finances experience greater monetary difficulties when they order online food delivery frequently. First-order discounts with promotional offers constitute essential marketing tools which sustain application usage beyond the expiration date of special offers. Certain students maintain their food delivery pattern by employing credit cards as a funding source. Fast food remains the preferred choice because it is affordable according to the research but sacrificing both financial health and long-term physical health comes as a result. The research shows that insufficient financial knowledge makes students defenseless against advertised campaigns which creates self-destructive spending patterns and deteriorates their debt problems.
- I.** MDPI [2020] examines online food delivery platform sustainability through evaluations of economic influences as well as impacts on students and environmental factors. Students who have limited financial means experience greater spending habits from smartphone applications that send alerts and give rewards that worsen their accumulating debt issues. The student and gig economic workers who power OFD platforms receive minimum wages while facing unstable employment conditions and experience a struggle between their roles as consumers and workforce. Students experience increased burden on their budgets because delivery expenses increase through hidden fees including packaging costs and surge pricing. The paper reveals how fundamental flaws inside the OFD industry along with addictive features and labor exploitation create financial problems for students getting delivery meals leading to deeper economic challenges.
- J.** An examination by Tandfonline [2020] evaluates how financial stress affects students' food picking habits and their reliance on online food delivery application services. The research demonstrates that students who experience financial challenges resort to buying economical unhealthy foods on OFD platforms to handle their money problems temporarily. The unhealthy food decisions become recurring because budgetary limitations make the situation worse. Based on the investigation students who face food-cost-related financial troubles develop poor mental health which sustains their unhealthy dietary patterns. Students view OFD apps as inexpensive but their regular use leads to long-lasting monetary problems. Financial restrictions cause psychological strain which leads to financial instability because students use Order Food Delivery applications daily.
- K.** A research paper by Amoakon et al. [2016] reveals that college students dedicate around 30% of their limited budget to food consumption. The students spend their money based on their financial knowledge together with limited salary amounts and individual budget allocation plans. According to Engel's Law higher household income produces lower food expenditure patterns which students exhibit. The research divides food purchasing costs into two sections that include food-at-home purchases and food-away-from-home purchases and shows that consumers base their decisions on price together with convenience. The behavior patterns of student spending receive strong influences from both peer influence and focused marketing campaigns. Students resort to credit cards and loans because the limited availability of employment opportunities forces them to pay for necessary expenditures. The work shows that students facing financial problems specifically need better budgeting capabilities. The study reveals that both education about finances and affordable meal promotion would alleviate student financial pressure which delivers advantages for policy-makers alongside students.
- L.** Chakraborty et al. [2024] examine the elements which motivate Indian customers to use online food delivery services. User satisfaction among online food delivery customers stems mainly from convenience combined with fast delivery and the establishment of trust relationships. The research based on TAM [Davis, 1989] and ECT [Bhattacharjee, 2001] examined user behavior through surveys of 205 Delhi/NCR residents. Fast service together with easy usage explains why people choose OFDS according to Chong et al. [2016] and Zhao & Bacao [2020]. Trust acts as a fundamental element since customers tend to maintain their devotion to platforms offering protected transactions together with dependable service [Gefen, 2002; Chawla & Kumar, 2022]. The decision-making process of consumers heavily depends on both the recommendations of their peers and special promotional incentives which they receive [Prabowo & Nugroho, 2019]. A seamless user experience and highquality service foster repeat usage [Oliver, 1997; Prasetyo et al., 2021]. Future research indicates blockchain technology will improve trust and transparency in online food delivery

platforms while studies suggest potential uses of AI and personal recommendations according to Nguyen et al. (2020).

III. RESEARCH METHODOLOGY

A. Research Problem

This study explores the food preferences of Indian college students, the factors influencing their choices, and the impact of delivery services, health awareness, and digital marketing, while assessing the potential of new food commerce models.

B. Research Objectives

Objective 1: To analyze the food consumption patterns, comparing preferences between home-cooked and commercially available food.

Objective 2: To examine the factors influencing students' choices when purchasing food, focusing on variables such as price, convenience, health, and brand appeal.

Objective 3: To assess the impact of online food delivery services on students' eating habits and monthly food expenditures.

Objective 4: To explore students' awareness and perceptions of healthy eating and their subsequent food choices.

Objective 5: To identify the role of social media and digital marketing in shaping students' food preferences and purchasing behavior.

Objective 6: To evaluate the potential for innovative food commerce models like cloud kitchens and subscription meal plans to meet the needs of college students.

C. Statistical Tools

Chi-Square Test

The Chi-Square Test is a non-parametric test used to determine whether there is a significant association between two categorical variables. It is particularly useful for analyzing relationships between demographic factors (like age or gender) and impulse buying behaviour.

$$\chi^2 = \frac{\sum [(O - E)^2]}{E}$$

Chi-Square Tests of Association

These tests examined whether there was a statistically significant relationship between two categorical variables. The chi-square statistic, degrees of freedom, and p-value were computed for each hypothesis. A p-value of less than .05 was taken to indicate a statistically significant association. For each research objective, the results for both the t-test and chi-square hypothesis are reported, and the findings are discussed according

One-Sample T-Test

The One-Sample T-Test is a parametric test used to compare the sample mean to a known or hypothesized population mean.

$$t = \frac{(M - \mu)}{(\sigma/\sqrt{n})}$$

IV. DATA COLLECTION AND ANALYSIS

Objective 1: To analyze the food consumption patterns of college students in India, including preferences for home-cooked vs. commercially available food.

H₀: The preference rating for Online food delivery is less than or equal to the highest rating among the other options.

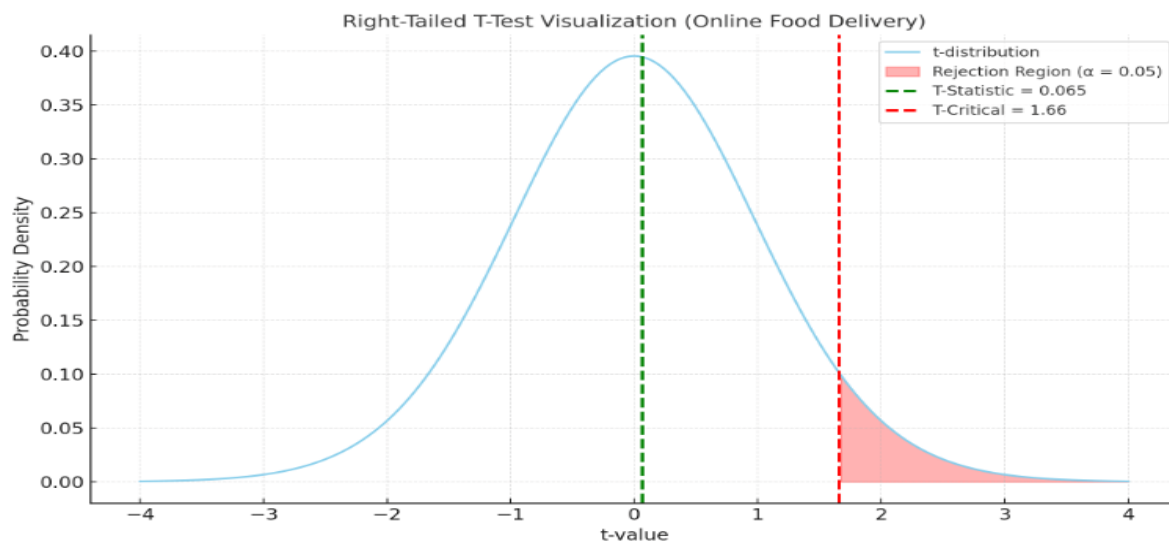
H₁: The preference rating for Online food delivery is greater than the ratings for all other meal experiences.

Table 1

Statement	Mean	Std Deviation	T - Statistic	P Value	T calculated	Conclusion
Home Cooked	3.307	1.482	0.021	0.05	1.660	Accept Null
Restaurant/Takeaway	3.020	1.175	0.002	0.05	1.660	Accept Null
Online food delivery	3.752	1.144	0.065	0.05	1.660	Accept Null
Cafeteria/Food courts	2.891	1.207	-0.009	0.05	1.660	Accept Null

Based on the right-tailed t-test results, the preference rating for Online food delivery (Mean = 3.752) is numerically higher than the other meal experiences; however, the calculated t-values for all comparisons are less than the critical value (1.660) and the p-values are greater than 0.05, indicating that none of the differences are statistically significant. As a result, we fail to reject the null hypothesis in all cases, meaning there is no sufficient evidence to conclude that Online food delivery is significantly more preferred than Home-cooked meals, Restaurant/Takeaway, or Cafeteria/Food courts. While Online food delivery shows the highest average rating, the preference is not statistically significant at the 5% level.

Table 2



The right-tailed t-test graph showing the t-distribution curve:

- The red shaded region represents the rejection region (where $t > 1.660$).
- The green dashed line marks the t-statistic for Online food delivery (0.065).
- Since the t-statistic lies outside the rejection region, we fail to reject the null hypothesis, confirming that Online food delivery is not significantly more preferred at the 5% level.

H₀: There is no significant association between gender and the rating given to Online food delivery.

H₁: There is a significant association between gender and the rating given to Online food delivery.

Table 3.1

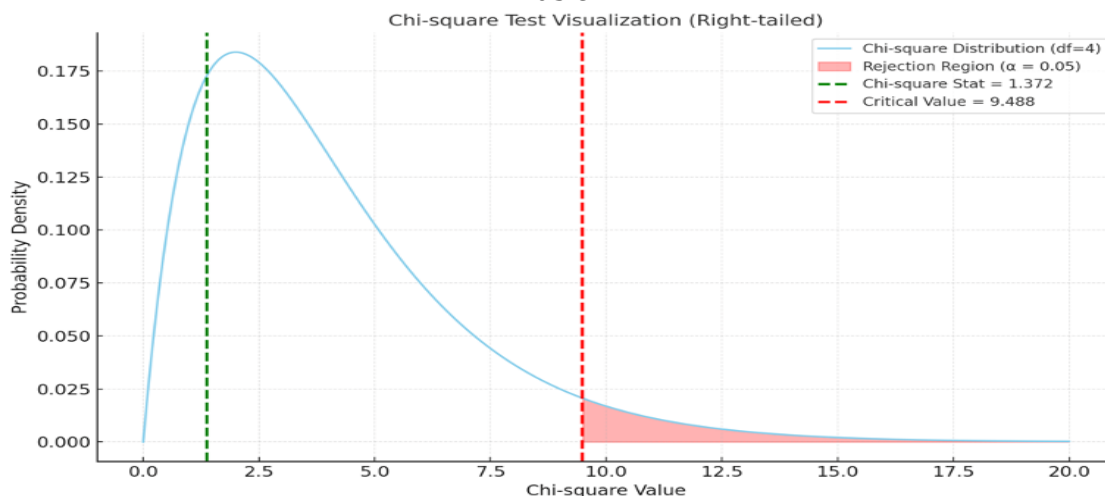
Gender /Scale	1	2	3	4	5	Total
Male	3	6	12	19	16	56
Female	1	6	9	13	16	45
Total	4	12	21	32	32	101

Table 3.2

		O	E	O-E	(O-E) ²	(O-E) ² /E
Male	1	3	2.218	0.782	0.612	0.276
	2	6	6.653	-0.653	0.427	0.064
	3	12	11.644	0.356	0.127	0.011
	4	19	17.743	1.257	1.581	0.089
	5	16	17.743	-1.743	3.037	0.171
Female	1	1	1.782	-0.782	0.612	0.343
	2	6	5.347	0.653	0.427	0.080
	3	9	9.356	-0.356	0.127	0.014
	4	13	14.257	-1.257	1.581	0.111
	5	16	14.257	1.743	3.037	0.213
				Chi Square Calculated		1.372
				Chi Square Critical		9.488
				Accept Null		

Based on the Chi-square test of independence, the calculated Chi-square value is 1.372, which is less than the critical value of 9.488 at a 5% significance level with 4 degrees of freedom. This indicates that there is no statistically significant association between gender and the rating given to Online food delivery. Therefore, we accept the null hypothesis, suggesting that college students' preferences for Online food delivery (on a scale of 1 to 5) are independent of gender. In other words, both male and female students show similar rating patterns for Online food delivery services.

Table 4



The Chi-square test visualization (right tailed):

- The red shaded area is the rejection region, starting from the critical value (9.488).
- The green dashed line represents your Chi-square statistic (1.372).
- Since the statistic lies far left of the rejection zone, we fail to reject the null hypothesis, confirming that there's no significant association between gender and the rating for Online food delivery.

College students in India exhibit a dual dependency on home-cooked meals (health-driven) and commercial food (convenience-driven). While online delivery apps dominate daily consumption, systemic barriers like hostel restrictions and time constraints limit access to balanced diets. Strategic interventions targeting affordability, convenience, and awareness could bridge this gap, fostering healthier and more sustainable eating habits.

Objective 2: To examine the factors influencing college students' choices when purchasing food (price, convenience, health, brand appeal).

H₀: There is no significant difference in the preference rating for Price/Discounts compared to the average of other influencing factors (Restaurant Reputation, Delivery Speed, Food Quality, etc.).

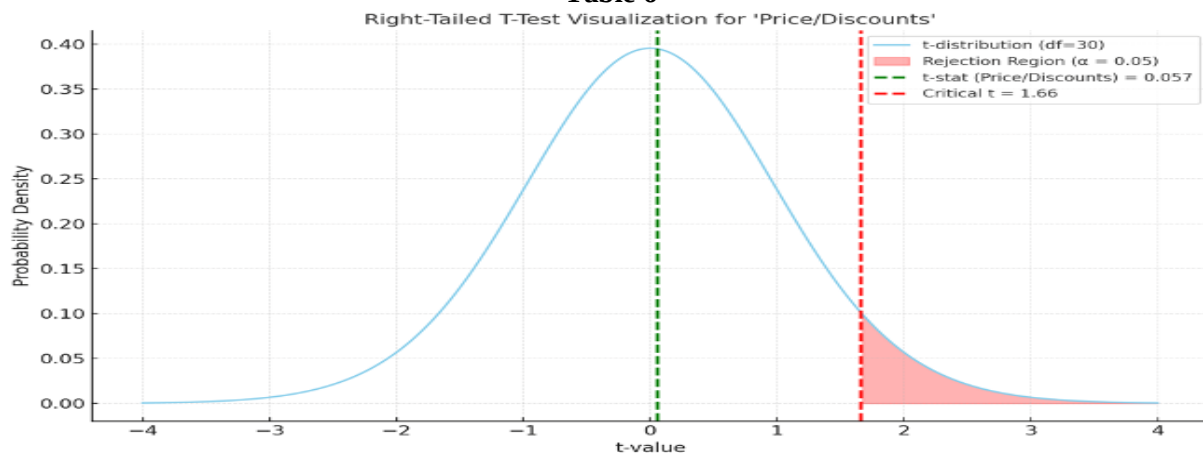
H₁: The preference rating for Price/Discounts is significantly greater than the average rating of the other influencing factors.

Table 5

Statement	Mean	Std Deviation	T - Statistic	P Value	T calculated	Conclusion
Restaurant Reputation/Reviews	3.594	1.274	0.046	0.05	1.660	Accept null
Price/Discounts	3.693	1.206	0.057	0.05	1.660	Accept null
Delivery Speed	3.495	1.137	0.043	0.05	1.660	Accept null
Food Quality	3.950	1.268	0.075	0.05	1.660	Accept null
Food Variety	3.347	1.228	0.028	0.05	1.660	Accept null
Customer Service	3.584	1.032	0.056	0.05	1.660	Accept null
Cleanliness and Hygiene	3.980	1.131	0.086	0.05	1.660	Accept null
Food Customisation Choices	3.050	1.169	0.004	0.05	1.660	Accept null

Based on the t-test analysis, the calculated t-statistic for Price/Discounts is 0.057, which is less than the critical value of 1.660 at a 5% significance level in a right-tailed test. Similar results were observed for all other factors, where the calculated t-values remained below the threshold. Therefore, we accept the null hypothesis, indicating that there is no statistically significant difference in the preference rating for Price/Discounts compared to the average of other influencing factors. This suggests that while Price/Discounts is moderately valued, it is not significantly more influential than other aspects like Food Quality, Cleanliness, or Delivery Speed in driving students' food delivery choices.

Table 6



The right-tailed t-test graph for the factor Price/Discounts:

- The blue curve shows the t-distribution.
- The red shaded region marks the rejection zone (critical $t > 1.660$).
- The green dashed line is the t-statistic (0.057) for Price/Discounts, which falls far left of the rejection region.

This visually confirms that the result is not statistically significant, so *Price/Discount* is not significantly more preferred than other factors.

H₀: There is no significant association between the amount students spend per week on online food delivery and their preferred wait time for each order.

H₁: There is a significant association between the amount students spend per week on online food delivery and their preferred wait time for each order.

Table 7.1

Waiting Time / Money Spend	₹0 - ₹400	₹400 - ₹800	₹800 - ₹1200	₹1200 - ₹1600	More than ₹1600	Total I

Less than 10 mins	1	2	1	0	1	5
10 - 20 mins	4	6	5	4	2	21
20 - 30 mins	17	14	18	10	4	63
30 - 45 mins	0	2	3	5	1	11
More than 45 mins	0	0	0	0	1	1
Total	22	24	27	19	9	101

Table 7.2

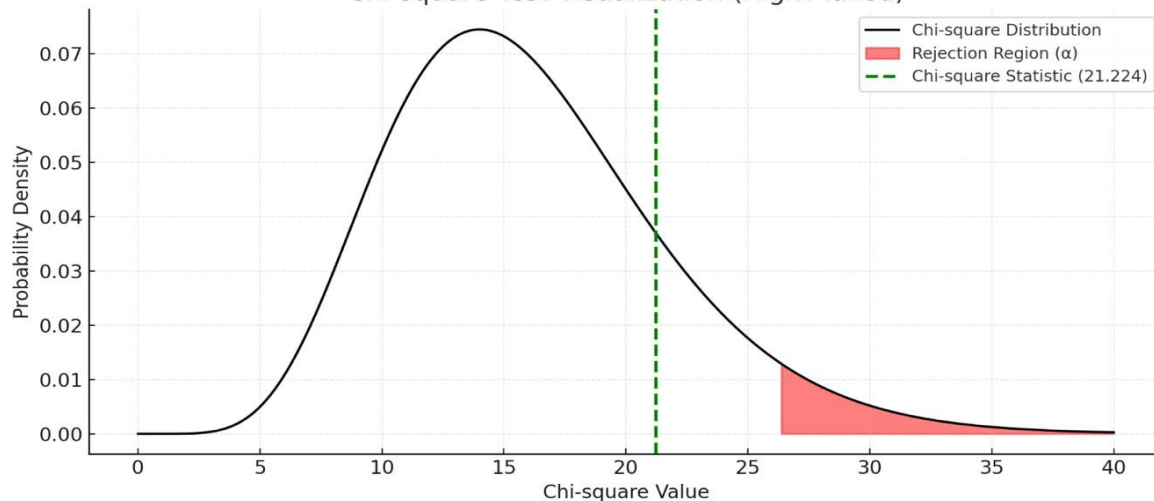
		O	E	O-E	(O-E) ²	(O-E) ² /E
Less than 10 mins	₹0 - ₹400	1	1.089108911	-0.089108911	0.007940398	0.007290729
	₹400 - ₹800	2	1.188118812	0.811881188	0.659151064	0.554785479
	₹800 - ₹1200	1	1.336633663	-0.336633663	0.113322223	0.084781812
	₹1200 - ₹1600	0	0.940594059	-0.940594059	0.884717185	0.940594059
	More than ₹1600	1	0.445544554	0.554455446	0.307420841	0.689988999
10 - 20 mins	₹0 - ₹400	4	4.574257426	-0.574257426	0.329771591	0.072092924
	₹400 - ₹800	6	4.99009901	1.00990099	1.01990001	0.204384724
	₹800 - ₹1200	5	5.613861386	-0.613861386	0.376825801	0.067124173
	₹1200 - ₹1600	4	3.95049505	0.04950495	0.00245074	0.000620363
	More than ₹1600	2	1.871287129	0.128712871	0.016567003	0.008853266
20 - 30 mins	₹0 - ₹400	17	13.72277228	3.277227723	10.74022155	0.782656837
	₹400 - ₹800	14	14.97029703	-0.97029703	0.941476326	0.062889622
	₹800 - ₹1200	18	16.84158416	1.158415842	1.341927262	0.079679397
	₹1200 - ₹1600	10	11.85148515	-1.851485149	3.427997255	0.289246218
	More than ₹1600	4	5.613861386	-1.613861386	2.604548574	0.46394957
30 - 45 mins	₹0 - ₹400	0	2.396039604	-2.396039604	5.741005784	2.396039604
	₹400 - ₹800	2	2.613861386	-0.613861386	0.376825801	0.144164416
	₹800 - ₹1200	3	2.940594059	0.059405941	0.003529066	0.00120012
	₹1200 - ₹1600	5	2.069306931	2.930693069	8.588961866	4.150646644
	More than ₹1600	1	0.98019802	0.01980198	0.000392118	0.00040004
More than 45 mins	₹0 - ₹400	0	0.217821782	-0.217821782	0.047446329	0.217821782
	₹400 - ₹800	0	0.237623762	-0.237623762	0.056465052	0.237623762
	₹800 - ₹1200	0	0.267326733	-0.267326733	0.071463582	0.267326733

	₹1200 - ₹1600	0	0.188118812	-0.188118812	0.035388687	0.188118812
	More than ₹1600	1	0.089108911	0.910891089	0.829722576	9.311331133
				Chi Square Calculated		21.22361122
				Chi Square Critical		26.296
						Accept Null

The chi-square test was conducted to examine the association between students' weekly spending on online food delivery and their preferred wait times for each order. With a calculated chi-square value of 21.22 and a critical value of 26.30 at the chosen significance level, the result falls below the critical threshold. This indicates that there is no statistically significant association between the two variables. Therefore, we fail to reject the null hypothesis (H_0) and conclude that the amount students spend per week on online food delivery does not significantly influence their preferred waiting time for deliveries.

Table 8

Chi-square Test Visualization (Right-Tailed)



The right-tailed Chi-square test visualization:

- **Red shaded area:** Rejection region starting from the critical value (26.296).
- **Green dashed line:** Your Chi-square statistic (21.224).
- Since the statistic lies left of the rejection zone, we fail to reject the null hypothesis, confirming that there's no significant association between the amount spent and preferred wait time for food delivery.

Most college students go for food delivery because it's quick and often comes with good deals. Over half say they've ordered just because of offers like "Buy 1, Get 1." Many use UPI for cashback, while others prefer cash to stay within budget. Even though it's pricier than cooking, most still find it cheaper than eating out. During exams, almost everyone relies on it to save time. Health matters to many, but only a few actually pick healthy meals mostly because they cost more. Swiggy edges out Zomato in speed, and social media plays a big role in what students end up ordering.

Objective 3: To assess the impact of online food delivery services on students' eating habits and monthly expenditures.

H_0 : There is no significant difference in the monthly expenditure of students who prefer UPI compared to users of other payment methods.

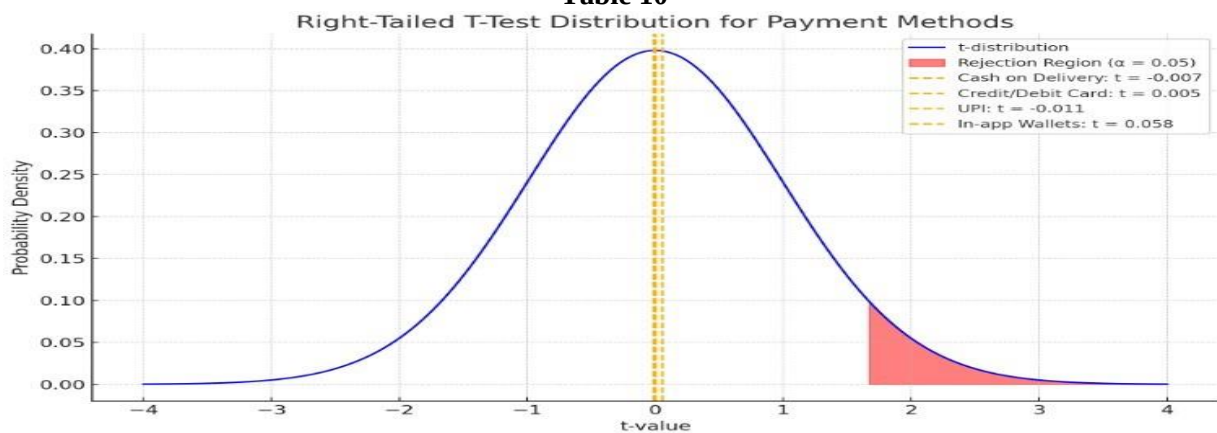
H_1 : Students who prefer UPI have a significantly higher monthly expenditure on online food delivery compared to users of other payment methods.

Table 9

Statement	Mean	Std Deviation	T - Statistic	P Value	T calculated	Conclusion
Cash on Delivery	2.895	1.487	-0.007	0.05	1.660	Accept Null
Credit/Debit Card	3.077	1.605	0.005	0.05	1.660	Accept Null
UPI	2.855	1.365	-0.011	0.05	1.660	Accept Null
In-app Payment wallets	3.857	1.464	0.058	0.05	1.660	Accept Null

The t-test analysis aimed to determine if students who prefer UPI as a payment method spend significantly more on online food delivery compared to users of other payment options. However, the calculated t-statistics for all payment methods, including UPI (-0.011), were well below the critical t-value of 1.660 at a 5% significance level. This indicates that there is no statistically significant difference in monthly expenditure based on the preferred mode of payment. As a result, the null hypothesis is accepted, suggesting that students' spending habits on food delivery are not influenced by whether they use UPI, cash on delivery, cards, or in-app wallets.

Table 10



The right-tailed t-distribution graph showing:

- The critical region shaded in red (right side of the red zone begins at $t = 1.660$).
- Dashed lines for each payment method's observed t-value.
- All observed t-values lie far to the left of the critical value, indicating no significant difference in monthly expenditure. UPI users do not spend more than others based on this test.

H₀: There is no significant association between students' preferred wait time and the most common time they order food online.

H₁: There is a significant association between students' preferred wait time and the most common time they order food online.

Table 11.1

Ordering Time / Money Spend	Breakfast	Lunch	High Tea	Dinner	Late Night Cravings	Total
Less than 10 mins	1	1	0	2	1	5
10 - 20 mins	1	2	2	11	5	21
20 - 30 mins	3	13	9	29	9	63
30 - 45 mins	0	2	2	4	3	11
More than 45 mins	0	0	0	0	1	1
Total	5	18	13	46	19	101

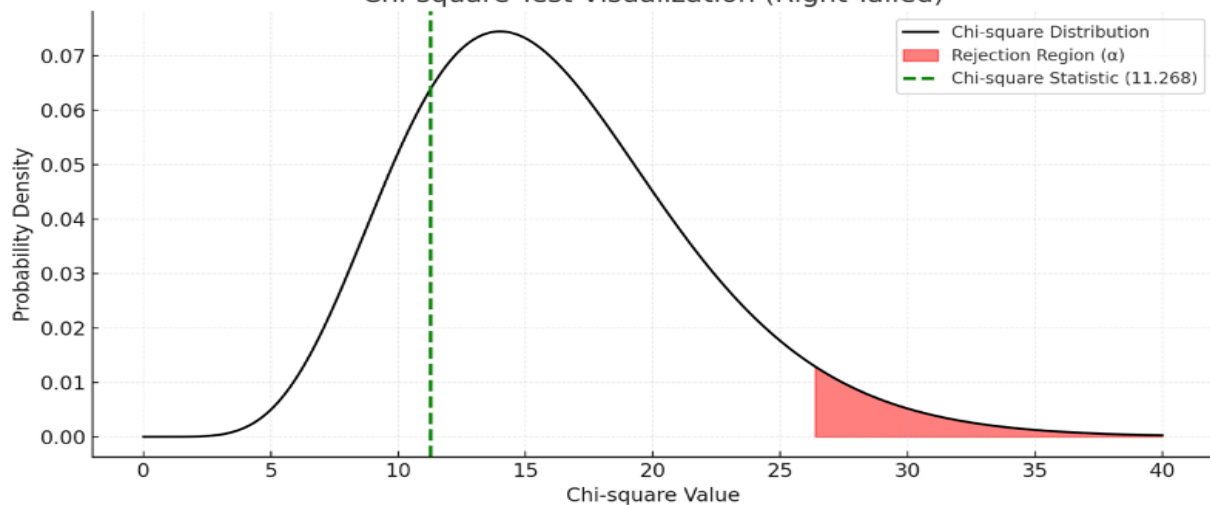
Table 11.2

		O	E	O-E	(O-E) ²	(O-E) ² /E
Less than 10 mins	Breakfast	1	0.247524752	0.752475248	0.566218998	2.287524752
	Lunch	1	0.891089109	0.108910891	0.011861582	0.013311331
	High Tea	0	0.643564356	- 0.643564356	0.414175081	0.643564356
	Dinner	2	2.277227723	- 0.277227723	0.07685521	0.033749462
	Late Night Cravings	1	0.940594059	0.059405941	0.003529066	0.003751954
10 - 20 mins	Breakfast	1	1.03960396	-0.03960396	0.001568474	0.001508722
	Lunch	2	3.742574257	- 1.742574257	3.036565043	0.811357326
	High Tea	2	2.702970297	- 0.702970297	0.494167239	0.182823777
	Dinner	11	9.564356436	1.435643564	2.061072444	0.215495152
	Late Night Cravings	5	3.95049505	1.04950495	1.101460641	0.278815852
20 - 30 mins	Breakfast	3	3.118811881	- 0.118811881	0.014116263	0.004526167
	Lunch	13	11.22772277	1.772277228	3.140966572	0.279750991
	High Tea	9	8.108910891	0.891089109	0.7940398	0.09792188
	Dinner	29	28.69306931	0.306930693	0.09420645	0.003283248
	Late Night Cravings	9	11.85148515	- 2.851485149	8.130967552	0.686071615
30 - 45 mins	Breakfast	0	0.544554455	- 0.544554455	0.296539555	0.544554455
	Lunch	2	1.96039604	0.03960396	0.001568474	0.00080008
	High Tea	2	1.415841584	0.584158416	0.341241055	0.241016409
	Dinner	4	5.00990099	-1.00990099	1.01990001	0.203576879
	Late Night Cravings	3	2.069306931	0.930693069	0.866189589	0.418589227
More than 45 mins	Breakfast	0	0.04950495	-0.04950495	0.00245074	0.04950495
	Lunch	0	0.178217822	- 0.178217822	0.031761592	0.178217822
	High Tea	0	0.128712871	- 0.128712871	0.016567003	0.128712871
	Dinner	0	0.455445545	- 0.455445545	0.207430644	0.455445545
	Late Night Cravings	1	0.188118812	0.811881188	0.659151064	3.503908286
				Chi Square Calculated		11.26778311
				Chi Square Critical		26.296
						Accept Null

A Chi-square test was conducted to examine the relationship between students' preferred wait time and the most common time they order food online. The calculated Chi-square value is 11.27, which is significantly less than the critical value of 26.30 at the given level of significance. Since the test statistic does not fall within the rejection region, we fail to reject the null hypothesis (H_0). This suggests that there is no statistically significant

association between students' preferred wait time and their typical food ordering time, indicating that these two variables are independent of each other.

Table 12
Chi-square Test Visualization (Right-Tailed)



The Chi-square test visualization for your second analysis:

- **Red shaded area:** Rejection region starting from the critical value (26.296).
- **Green dashed line:** Your Chi-square statistic (11.268).
- Since the test statistic lies well to the left of the rejection region, we fail to reject the null hypothesis, indicating no significant association between students' preferred wait time and their most common ordering time.

Online food delivery services significantly alter students' eating habits, amplifying junk food consumption and irregular meal patterns. While apps offer convenience and affordability, heavy reliance leads to financial strain (20–30% budget allocation) and health trade-offs. Strategic interventions—such as spending controls, nutritional transparency, and campus partnerships—could mitigate negative impacts while preserving the benefits of food tech accessibility.

Objective 4: To explore students' awareness and perception of healthy eating habits and how it affects their food choices.

H₀: There is no significant difference in preference for Healthy Food/Salads compared to the average preference for other meal types (Tiffin, Snacks, Junk Food, Beverages).

H₁: Students have a significantly higher preference for Healthy Food/Salads than for other meal types.

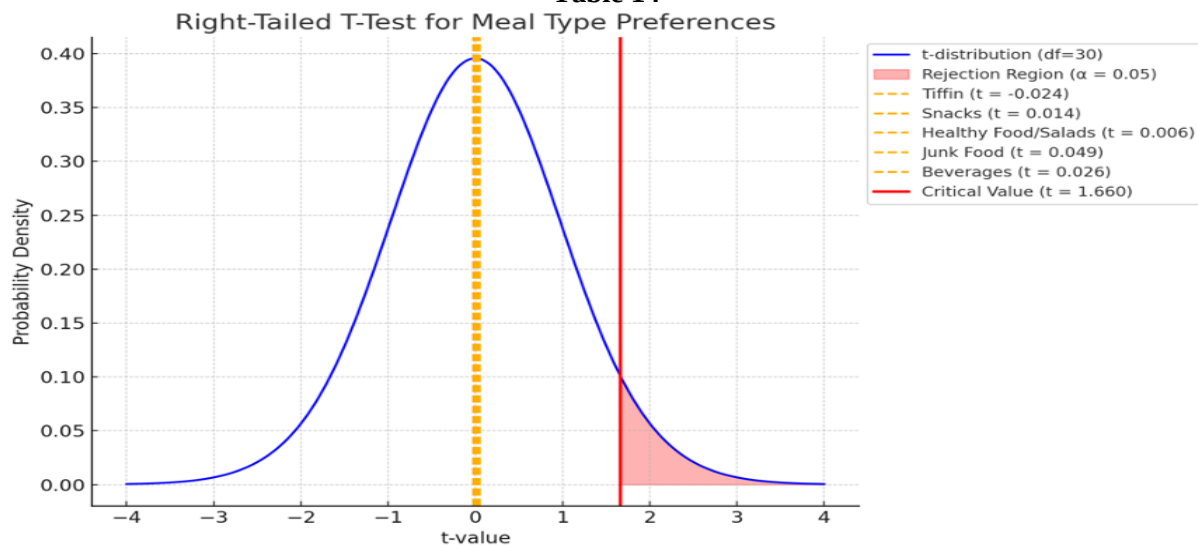
Table 13

Statement	Mean	Std Deviation	T - Statistic	P Value	T calculated	Conclusion
Tiffin Service/Daily meals	2.653	1.431	-0.024	0.05	1.660	Accept Null
Snacks	3.158	1.164	0.014	0.05	1.660	Accept Null
Healthy Food/Salads	3.069	1.125	0.006	0.05	1.660	Accept Null
Junk Food	3.594	1.218	0.049	0.05	1.660	Accept Null
Beverages	3.317	1.216	0.026	0.05	1.660	Accept Null

The t-test analysis aimed to assess whether students significantly prefer Healthy Food/Salads over other meal types such as Tiffin meals, Snacks, Junk Food, and Beverages. The results indicate that the t-statistic for Healthy Food/Salads (0.006) is well below the critical value of 1.660, suggesting no statistically significant difference in preference. In fact, Junk Food has the highest t-statistic (0.049), followed by Beverages and Snacks. Therefore, we accept the null hypothesis, concluding that students do not show a significantly higher

preference for Healthy Food/Salads compared to other options—implying that health conscious eating habits may not dominate food choices among college students.

Table 14



The right-tailed t-distribution graph showing:

- The critical region shaded in red, starting at $t = 1.660$.
- Dashed lines for each meal type's observed t-value (Tiffin, Snacks, Healthy Food/Salads, Junk Food, Beverages).
- As shown, all observed t-values lie far to the left of the critical value, indicating no significant difference in preference. Healthy Food/Salads is not significantly more preferred than other meal types based on this test.

H₀: There is no significant association between the frequency of food delivery app usage and students' preference for Healthy Food/Salads.

H₁: There is a significant association between the frequency of food delivery app usage and students' preference for Healthy Food/Salads.

Table 15.1

Order Frequency/Scale	1	2	3	4	5	Total
Rarely	7	2	7	3	4	23
Occasionally	1	12	14	13	2	42
Frequently	1	6	6	10	3	26
Very frequently	0	3	4	2	1	10
Total	9	23	31	28	10	101

Table 15.2

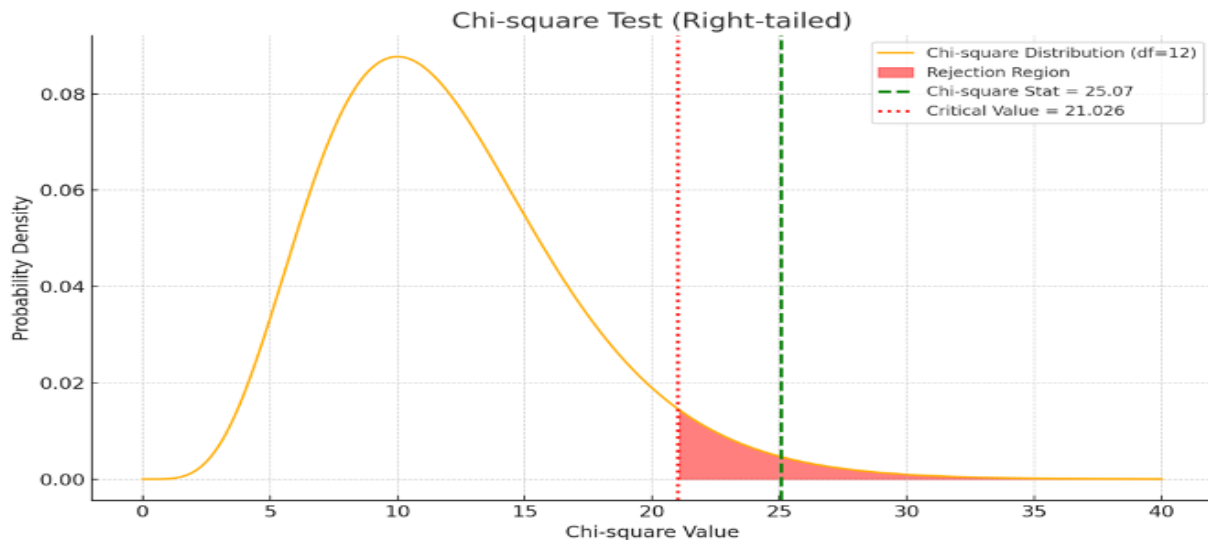
		O	E	O-E	(O-E) ²	(O-E) ² /E
Rarely	1	7	2.04950495	4.95049505	24.50740124	11.95771751
	2	2	5.237623762	-3.237623762	10.48220763	2.001328866
	3	7	7.059405941	-0.059405941	0.003529066	0.00049991
	4	3	6.376237624	-3.376237624	11.39898049	1.787728307
	5	4	2.277227723	1.722772277	2.967944319	1.303314679
Occasionally	1	1	3.742574257	-2.742574257	7.521713557	2.009770025
	2	12	9.564356436	2.435643564	5.932359573	0.620257057
	3	14	12.89108911	1.108910891	1.229683364	0.095390184
	4	13	11.64356436	1.356435644	1.839917655	0.158020139
	5	2	4.158415842	-2.158415842	4.658758945	1.120320603
Frequently	1	1	2.316831683	-1.316831683	1.734045682	0.748455615

	2	6	5.920792079	0.079207921	0.006273895	0.001059638
	3	6	7.98019802	-1.98019802	3.921184198	0.491364273
	4	10	7.207920792	2.792079208	7.795706303	1.081547166
	5	3	2.574257426	0.425742574	0.18125674	0.070411272
Very frequently	1	0	0.891089109	-0.891089109	0.7940398	0.891089109
	2	3	2.277227723	0.722772277	0.522399765	0.229401636
	3	4	3.069306931	0.930693069	0.866189589	0.282210156
	4	2	2.772277228	-0.772277228	0.596412116	0.215134371
	5	1	0.99009901	0.00990099	9.80296E-05	9.90099E-05
				Chi Square Calculated		25.06511953
				Chi Square Critical		21.026
						Reject Null

The Chi-square test conducted to examine the association between the frequency of food delivery app usage and students' preference for Healthy Food/Salads yielded a Chi-square statistic of 25.07, which is greater than the critical value of 21.026 at the 0.05 significance level. This places the test statistic in the rejection region, leading us to reject the null hypothesis. Thus, there is a statistically significant association between how frequently students use food delivery apps and their preference for healthy food or salads.

In other words, students' interest in healthier options varies depending on how often they order food online.

Table 16



The Chi-square test visualization:

- Red shaded area marks the rejection region, starting from the critical value (21.026).
- Green dashed line shows your Chi-square statistic (25.07).
- Since the statistic falls into the red rejection region, we reject the null hypothesis, meaning there is a significant association between students' frequency of food delivery app usage and their preference for Healthy Food/Salads.

While 70% of students acknowledge the importance of healthy eating, systemic barriers like cost, time, and app design limit actionable change. A "knowledge-action gap" persists, exacerbated by socioeconomic disparities and digital platform biases. Bridging this gap requires collaborative efforts—integrating nutrition education, app redesigns, and policy reforms—to make healthy eating accessible, affordable, and aspirational for college students.

Objective 5: To identify the role of social media and digital marketing in shaping students' food preferences and purchasing behavior.

H₀: There is no significant difference in the average tipping amount between students influenced by social media/digital marketing and those who are not.

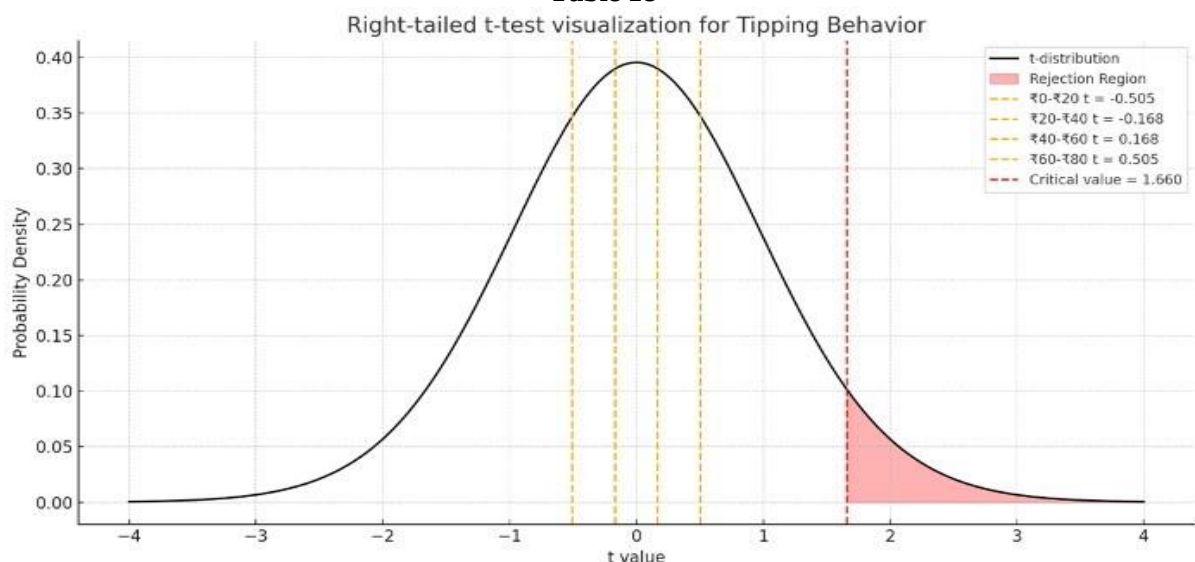
H₁: Students influenced by social media/digital marketing have a significantly different average tipping amount compared to those who are not.

Table 17

Statement	Mean	Std Deviation	T - Statistic	P Value	T calculated	Conclusion
₹0 - ₹20	10	5.916	-0.505	0.05	1.660	Accept Null
₹20 - ₹40	30	5.916	-0.168	0.05	1.660	Accept Null
₹40 - ₹60	50	5.916	0.168	0.05	1.660	Accept Null
₹60 - ₹80	70	5.916	0.505	0.05	1.660	Accept Null

The t-test analysis aims to determine whether social media and digital marketing significantly influence students' tipping behavior. Across all tipping ranges—₹0–₹20, ₹20–₹40, ₹40–₹60, and ₹60–₹80—the calculated t-statistics (ranging from -0.505 to 0.505) are well below the critical value of 1.660. Additionally, all p-values are above the 0.05 significance threshold. This leads to the acceptance of the null hypothesis in every category, indicating no statistically significant difference in average tipping amounts between students influenced by social media and those who are not. The findings suggest that, in this case, digital marketing and social media do not appear to have a measurable impact on students' tipping decisions.

Table 18



The right-tailed t-test diagram for the analysis on tipping behavior. As you can see:

- The t-statistics for all tipping ranges (₹0–₹80) fall well to the left of the critical t-value (1.660).
- This means none of the t-values fall in the rejection region (the red shaded area on the right).
- Thus, the visual confirms that we accept the null hypothesis: there is no significant difference in the average tipping amount between students influenced by social media and those who are not.

Social media and digital marketing profoundly shape students' food preferences, driven by FOMO, influencer culture, and app algorithms favoring junk food. While these platforms enhance discovery and convenience, they also perpetuate impulsive spending and nutritional neglect. Strategic reforms—such as algorithm transparency, influencer accountability, and student-led advocacy—could harness digital tools to promote healthier, more informed choices without sacrificing engagement.

Objective 6: To evaluate the potential for innovative food commerce models (e.g., cloud kitchens, subscription meal plans) to cater to college students' needs.

H₀: There is no significant difference in the average importance rating of sustainability when choosing a food delivery service between the two groups of students.

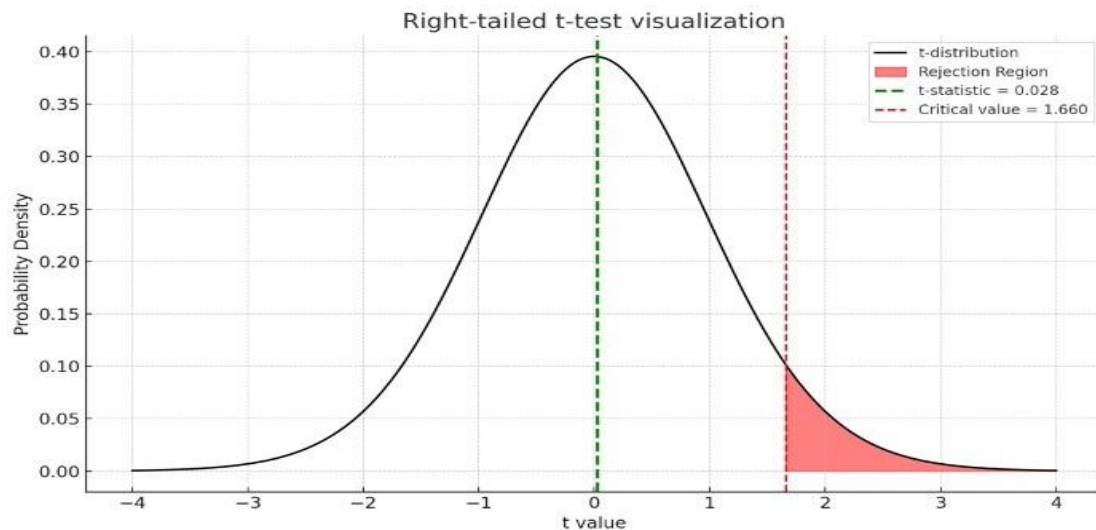
H₁: There is a significant difference in the average importance rating of sustainability when choosing a food delivery service between the two groups of students.

Table 19

Statement	Mean	Std Deviation	T - Statistic	P Value	T calculated	Conclusion
Sustainability	3.307	1.093	0.028	0.05	1.660	Accept Null

The t-test analysis examines whether there's a significant difference in how two groups of students rate the importance of sustainability (such as eco-friendly packaging and minimizing food wastage) when selecting a food delivery service. With a calculated t-statistic of 0.028—well below the critical value of 1.660 and a p-value higher than the 0.05 significance level, we fail to reject the null hypothesis. This indicates that there is no statistically significant difference in sustainability importance ratings between the two groups. In other words, students across both groups generally perceive sustainability with a similar level of importance when choosing a food delivery service.

Table 20



The right-tailed t-test diagram for your sustainability importance rating analysis

- The green dashed line shows the calculated t-statistic (0.028), which lies far to the left of the red rejection region starting from the critical value (1.660).
- Since the t-statistic is well within the acceptance region, we fail to reject the null hypothesis suggesting no significant difference between the groups.

H₀: There is no significant association between students' monthly income/pocket money and their willingness to subscribe to a meal plan (e.g., cloud kitchens, pre-paid meal services).

H₁: There is a significant association between students' monthly income/pocket money and their willingness to subscribe to a meal plan.

Table 21.1

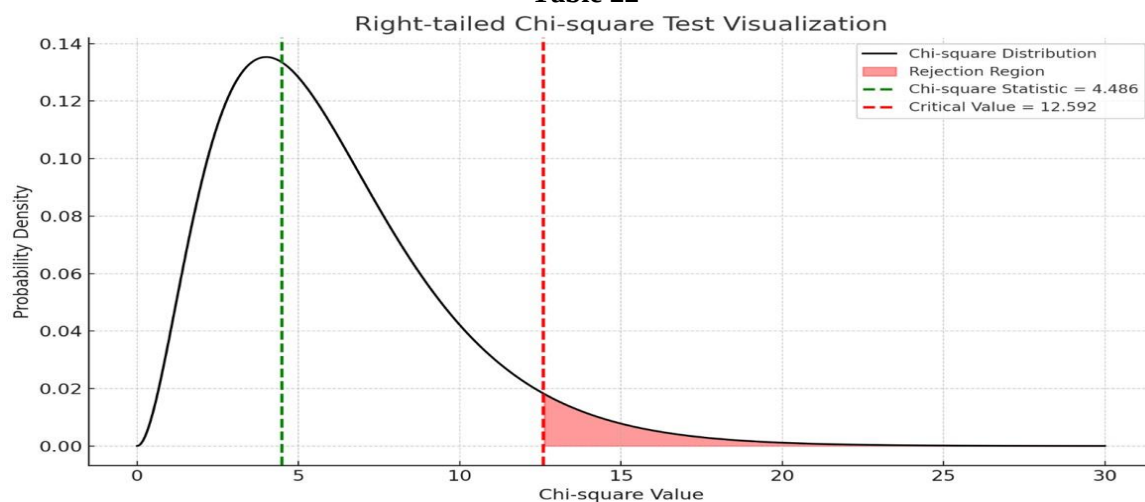
Subscription/Income	0 - 25,000	25,000 - 50,000	50,000 - 1,00,000	Above 1,00,000	Total
Yes	6	4	5	1	16
No	26	16	16	8	66
Maybe	10	6	3	0	19
Total	42	26	24	9	101

Table 21.2

		O	E	O-E	(O-E) ²	(O-E) ² /E
Yes	0 - 25,000	6	6.653	-0.653	0.427	0.064
	25,000 - 50,000	4	4.119	-0.119	0.014	0.003
	50,000 - 1,00,000	5	3.802	1.198	1.435	0.378
	Above 1,00,000	1	1.426	-0.426	0.181	0.127
No	0 - 25,000	26	27.446	-1.446	2.090	0.076
	25,000 - 50,000	16	16.990	-0.990	0.980	0.058
	50,000 - 1,00,000	16	15.683	0.317	0.100	0.006
	Above 1,00,000	8	5.881	2.119	4.489	0.763

Maybe	0 - 25,000	10	7.901	2.099	4.406	0.558
	25,000 - 50,000	6	4.891	1.109	1.230	0.251
	50,000 - 1,00,000	3	4.515	-1.515	2.295	0.508
	Above 1,00,000	0	1.693	-1.693	2.866	1.693
				Chi Square Calculated		4.486
				Chi Square Critical		12.592
						Accept Null

The Chi-square test was conducted to determine whether there is a significant association between students' monthly income or pocket money and their willingness to subscribe to a meal plan (such as cloud kitchens or pre-paid meal services). The calculated Chi-square value is 4.486, which is less than the critical value of 12.592 at the 0.05 significance level. As a result, we accept the null hypothesis, indicating that there is no statistically significant association between students' income levels and their willingness to subscribe to a meal plan. This suggests that students' preferences for subscription-based meal services are likely influenced by factors other than income, such as convenience, variety, or dietary preferences.

Table 22

The chi-square test tail diagram you asked for. It visualizes:

- The chi-square distribution (black curve)
- The critical value = 12.592 (red dashed line)
- The calculated chi-square statistic = 4.486 (green dashed line)
- The rejection region (shaded red area)
- Since the test statistic (4.486) falls to the left of the critical value (12.592), it lies outside the rejection region—therefore, we accept the null hypothesis, meaning no significant association was found between students' income and willingness to subscribe to a meal plan

Innovative models like subscription plans and cloud kitchens hold significant potential to cater to students' demand for affordability, variety, and convenience. However, trust deficits (40% distrust cloud kitchens) and sustainability awareness gaps (65% unaware of eco-options) hinder adoption. Strategic collaborations—college-platform partnerships, transparent marketing, and policy incentives—can bridge these gaps, making next-gen food commerce both student-friendly and sustainable.

V. CONCLUSION

This study provided us with an enhanced perception of the way Indian college students are engaging with the newer models of the food industry as well as with online food-delivery platforms. Although platforms such as Swiggy and Zomato are obviously widely used, we found that students don't have much preference for them over simple meals such as home-cooked meals or meals served at the cafeteria. Convenience is certainly an influence, but conventional meals remain strong. Students make choices about where to eat without depending on only one variable. So, it is never only about cost or quickness—there is an amalgam of factors that students have to consider, such as the quality of food, reputation, or even ease of app usage. Promotions have an effect, but they are never necessarily the determinants of orders. Interestingly, we learned that students' method of paying (such as by UPI or cash) has little influence on the extent to which they end up spending. Not even a

great correlation existed between their typical ordering time and whether they are willing to wait for food. Nevertheless, there are plenty of students who end up spending a significant portion of their budget on food delivery, particularly at times like exams. Health awareness is present—students agree that it is important to eat healthy—but it does not always translate into reality. Junk food and convenience snacks remain prevalent. Still, students who engage with these applications more heavily do have slightly greater concern for healthy choices, so perhaps there is an opportunity for meal platforms to promote better meals, given that they make them easier to locate and less expensive. Social media certainly has an effect on what students wish to eat, particularly through trends and what they see that their friends are sharing. But where we examined actual behaviors such as tips, it didn't have an impactful difference. So the effect is probably emotional or visual rather than functional. Finally, newer concepts such as cloud kitchens and meal subscriptions appeal to students, but some hesitate to trust them. Furthermore, most aren't aware enough of the way these companies address sustainability. This indicates potential but also necessity for more transparent info and improved communications from these companies. In summary, student food decisions are influenced by habit, budget, peer pressure, and whatever is easiest at the given time. Food delivery platforms address some of these factors, but there is still some way to go—particularly on health, affordability, and trust.

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CULTURAL AESTHETICS & GLOBAL BUSINESS: HOW INSTAGRAM INFLUENCERS SHAPE CROSS-BORDER CONSUMPTION

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SVKM's Usha Pravin Gandhi College of Arts, Science and Commerce, Mumbai, Maharashtra¹salishatalwar21@gmail.com**ABSTRACT**

In a globalised digital economy, Instagram influencers have evolved into powerful cultural intermediaries who do more than just promote products; they reshape meaning through aesthetics. This paper explores how influencers use culturally rooted visuals and storytelling to make global products feel personally relevant to local and international audiences. Through case studies of Indian influencers popularising Korean skincare, global influencers styling Indian aesthetics, and the Prada - Kolhapuri chappal conversation, the study illustrates how visual storytelling influences consumer perception, authenticity, and identity. By embedding cultural cues into content, influencers shape hybrid consumer identities and drive cross-border consumption. Their ability to blend global trends with local visual traditions makes them more than content creators; they are aesthetic diplomats who bridge regional cultures and global branding strategies. The findings raise critical questions around cultural ownership, value perception, and the future of influencer-driven commerce.

Keywords: cultural aesthetics, Instagram influencers, cross-border consumption, visual storytelling, global branding, authenticity

INTRODUCTION

Although adaptation and culture have long shared a connection, the rise of digital platforms like Instagram has introduced a new kind of visual storytelling system. Influencers today do more than promote products; they reshape global aesthetics into locally meaningful narratives using carefully curated images. By aligning visual identity with cultural context and tailoring global products to resonate with local tastes, influencers now serve as cultural bridges, helping brands connect, communicate, and cross borders in ways that feel both familiar and aspirational.

LITERATURE REVIEW

In the digital economy, visual culture plays a powerful role in how meaning is constructed and circulated across borders. Influencers on platforms like Instagram often act as visual storytellers who embed cultural aesthetics, colors, symbols, rituals, dress, and design elements into their content in ways that shape how audiences interpret identity, aspiration, and value (Wang & Huang, 2022). Through carefully crafted imagery, they make global products feel personal, relatable, and culturally embedded. Michaelsen, Collini, and Jacob (2022) argue that this aesthetic storytelling enables influencers to build trust and emotional resonance in ways that traditional advertising cannot, especially when representing aspirational lifestyles or personal rituals.

As global brands expand into new markets, cultural integration becomes a branding imperative.

Influencers serve as cultural intermediaries, translating global trends into locally relevant narratives. For example, Indian influencers showcasing Korean skincare in wedding-prep content, or international fashion creators styling Indian textiles with Western silhouettes, reveal how visual content facilitates cross-border consumption (Acar & Puntoni, 2016). "These acts can strengthen cultural exchange, but they also invite debates around appropriation and attribution. A recent example is the Prada Kolhapuri chappal conversation, which drew criticism for overlooking the Indian origin of the traditional footwear. Indian actress Kareena Kapoor added to the conversation by posting a story on Instagram saying, 'Sorry not Prada... but my OG Kolhapuri,' subtly calling out the lack of cultural credit (News9Live, 2025; Hindustan Times, 2025; Jin, 2018). Her public commentary, amplified by social media, reignited discourse on ownership and authenticity in global branding."

These cases illustrate that influencers shape more than consumer desire; they influence how meaning itself travels between cultures. As such, this study draws upon McCracken's (1989) Meaning Transfer Model to better understand how symbolic meaning moves through the digital ecosystem. It is especially useful in understanding how the same product can hold different meanings depending on who presents it and how it is visually framed.

Theoretical Framework

McCracken's (1989) Meaning Transfer Model offers a useful way to understand how cultural meaning moves through digital content especially on platforms like Instagram. The model outlines a process in which meaning shifts through three main stages: from cultural context to the influencer, from the influencer to the product, and finally, from the product to the consumer. In each step, symbols, values, and narratives are reshaped and reinterpreted.

In the Instagram ecosystem, influencers act as meaning-makers. Their posts aren't just visual; they're embedded with cultural cues drawn from personal identity, community context, and stylistic preference. Whether it's a short fashion reel, a beauty tutorial, or a lifestyle post, these creators weave meaning into how a product is seen. As a result, a brand's item can carry very different emotional weight depending on who presents it and how.

Take the example of the Kolhapuri-style chappal. When featured by Prada in a luxury collection, it becomes a symbol of global high fashion. But when the same design is worn by an Indian influencer who picked it up at a local market, the meaning shifts to heritage, authenticity, and even quiet resistance to commodification. The product hasn't changed; the cultural framing has.

That's where McCracken's model becomes especially relevant. It reminds us that meaning doesn't live inside a product. It travels through people, imagery, and social context. Influencers, in this case, aren't just stylists or endorsers. They're cultural translators who shape how value and identity are expressed across borders often in ways brands may not have anticipated.

RESEARCH METHODOLOGY & RESEARCH DESIGN

Research Questions

- How do influencers blend cultural aesthetics with everyday storytelling to make global products feel local?
- What insights does McCracken's model offer in understanding how influencers create and transfer meaning through branded content?
- When global brands incorporate traditional designs, how do influencers shape whether the act is viewed as cultural appreciation or appropriation?

RESEARCH OBJECTIVES

- Understand how Instagram influencers use cultural visuals and storytelling to make global products feel personal and relatable to their audiences
- Explore how cultural meanings move through influencer content from tradition to trend using McCracken's Meaning Transfer Model as a reference
- Look at how influencers affect public ideas about authenticity, ownership, and identity, especially when cultural elements are reused or reimaged by global brands

This study takes a qualitative approach, using case-based analysis to trace how visual aesthetics move across cultures through influencer content. The data draws entirely from secondary sources including academic articles, online media, and social media posts from public accounts. Rather than measuring audience response with surveys, the focus is on close reading of visual narratives and cultural framing in influencer posts.

To ground the discussion, the paper looks at three real-world examples:

- Indian beauty influencers who popularised Korean skincare
- A European fashion influencer styling Indian textiles in a luxury context
- The Prada-Kolhapuri sandal moment and Kareena Kapoor's viral response

Scope of the Study

This paper takes a closer look at how Instagram influencers visually present culture not through metrics or data points, but by observing how aesthetics and storytelling affect how people perceive different cultures and products. The focus stays on interpretation rather than measurement. Instead of calculating reach, followers, or engagement, the study relies on cases drawn from what's already out there secondary research and widely available content from social platforms.

The discussion is shaped by three specific cultural settings:

- First, the way Indian beauty influencers have helped bring Korean skincare into mainstream popularity
- Second, how global fashion voices incorporate Indian textiles into modern looks.

- And third, the controversy around Prada's Kolhapuri-style sandals, which sparked an important conversation about appropriation and cultural credit especially when local voices and celebrities called it out.

Rather than claiming broad conclusions, the study aims to understand how meaning is created visually and how those visuals cross borders to influence perception and consumer behavior.p

CASE STUDY HIGHLIGHTS

Each instance is analyzed using the visual content method, cultural impact, and meaning transmission. To better understand how these cultural patterns work in real life, the paper explores three distinct cases. Each one shows how Instagram influencers adapt global products to local settings, reframe traditional design into desirable digital content, or provoke dialogue around cultural recognition. Taken together, these examples reveal how influencers are becoming key voices in shaping global branding through cross-cultural storytelling.

Case 1: Korean Skincare and Indian Influencers

The integration of Korean skincare into Indian culture has been greatly aided by Indian beauty influencers such as Shreya Jain and Malvika Sitlani. Videos about Indian wedding functions, rainy season, or celebrations that use Korean products reflect international trends in ways that are appropriate for the local context. This visual integration transforms new routines into familiar habits and creates aspirational yet appealing content (Wang & Huang, 2022).

Case 2: Indian Aesthetics Used by Global Influencers

International influencers employ Indian aesthetics. Fashion influencers such as Tamara Kalinic have emphasized Indian art of embroidery, ornamental jewelry, and fabrics in their style videos, sometimes pairing them with upscale Western apparel. This situated Indian handcraft within the international luxury storytelling, increasing its value in non-Indian markets. By styling Indian elements in a contemporary, international context, they modify these looks from conventional to urban. (Michaelsen et al., 2022).

Case 3: The Prada - Kolhapuri Chappal Moment

A stir broke out online when Prada introduced a high-end sandal that closely resembled the traditional Kolhapuri chappal, a design rooted deeply in Indian culture. The price tag and lack of cultural credit triggered debate on social media. Indian actress Kareena Kapoor added to the buzz when she casually mentioned in an Instagram story that she picked up a similar pair locally in India. The moment wasn't just amusing, it raised deeper questions about cultural ownership and design credit. It also showed how public figures and influencers can challenge mainstream narratives and reinforce the value of local craftsmanship (News9Live, 2025; Hindustan Times, 2025).

FINDINGS FROM THE CASE STUDY

One of the clearest takeaways from the study is that influencers help reframe global products through a distinctly local lens. By pairing international trends with familiar cultural cues, they make products feel more relatable and desirable to local audiences. For instance, a handcrafted Indian necklace styled in a modern European fashion shoot, or a Korean sheet mask featured in a wedding prep reel for an Indian bride these aren't just mashups. They're forms of cultural storytelling that resonate with overlapping identities.

Another key insight is how influencers function as sociocultural bridges. They do more than spotlight what's in style; their content often blurs the line between what's seen as traditional and what's fashionable, or between streetwear and luxury. Through their posts, we see that cultural markers aren't fixed. Indian embroidery can sit next to Italian leather and still feel authentic.

They're opening up space for hybrid aesthetics to be embraced.

Perhaps most striking are moments when influencers shift from style guides to voices in cultural conversations. When Kareena Kapoor casually compared her affordable Kolhapuri chappals to Prada's luxury version, it sparked more than a fashion moment. It raised questions about originality, cultural credit, and the boundaries between homage and appropriation. These reactions show that influencers aren't just promoting looks, they're shaping which cultural stories are told, and who gets to tell them. All of this points to a larger truth: influencer content today doesn't just drive sales or trends. It shapes opinion, sparks cultural dialogue, and redefines how style, heritage, and global commerce interact. The real influence lies not just in branded partnerships, but in how these creators help people navigate identity in a globalised consumer landscape.

LIMITATIONS OF THE STUDY

While not intended to be comprehensive, this study provides a targeted examination of how Instagram influencers employ cultural aesthetics to promote cross-border consumption.

The examples given are illustrative and do not necessarily reflect all influencing practices throughout the world. Primary interviews and analytics, which might provide more detail into the reactions of audiences or program outcomes, are not included in the present research because it is qualitative and dependent on secondary sources. Additionally, even if a lot of influencers work on a variety of digital platforms, the medium's focus is restricted to Instagram. Although the above choices were taken to maintain the study's strict focus, they provide various possibilities for further study.

DISCUSSION AND CONCLUSION

The case examples suggest that influencers aren't just posting at random their aesthetic choices are quite intentional. What they show, how they style it, and where they're placing it all shape how people see a product's authenticity or cultural roots. With just one visual reel, an influencer can blend tradition and trend in a way that gives new meaning to familiar things.

In that sense, they're acting as cultural connectors. Some help make Korean beauty routines seem totally at home in Indian households. Others present Indian textiles in high-fashion Western contexts. A few even push back when global brands overlook cultural origins. They're part of a cultural shift, not just a marketing one.

So, what does this all mean? Instagram influencers are doing more than selling. They're reshaping how we think about culture, value, and identity in business. It might be worth asking in future research how algorithms influence which stories get seen or how one campaign is received in very different ways across borders.

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A STUDY ON ASSET RECONSTRUCTION COMPANIES

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ABSTRACT

This research paper aims at understanding the market of Asset Reconstruction Companies (ARCs). It also analyses the growth in the sector and aims to analyse the various trends in the ARC segment with regards to issuance, subscription and redemption of Security Receipts. The study will highlight various aspects of the ARCs in an attempt to analyse the sector and determine the challenges ahead.

Keywords – Asset Reconstruction Companies (ARCs), NPA

INTRODUCTION

Under the aegis of The Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002, (SARFAESI Act) Asset Reconstruction Companies (ARCs) could be set up as a specialised financial institution which would help in alleviating the Non-Performing Asset (NPA) crisis in the Indian banking sector. The objective behind permitting ARCs and thereby securitisation of loans was to reduce the NPAs as the ARCs would buy the bad loans of banks essentially cleaning up the books of banks which were burdened by stressed assets. Thus, reconstruction of banks' assets is done by ARCs which are incorporated as companies under Companies Act and registered with RBI under SARFAESI Act. Under the securitisation process the ARCs issue Security Receipts (SRs) on the underlying stressed assets that have been purchased from the banks. These Security Receipts are purchased by Qualified Buyers, which include entities such as large financial institutions – banks, Non-Banking Financial Companies (NBFCs), insurance companies, asset management companies, etc. There has been a relaxation in minimum asset size requirement for NBFCs and Housing Finance Companies (HFCs) in 2025 thereby easing the eligibility for entities to register as QBs, which can increase the investor base for the SRs and give a boost to the securitisation market of ARCs by widening their capital base.¹

REVIEW OF LITERATURE

Meher and Puntambekar (2018) analysed the correlation between profitability growth rate of ARC (ARCIL) and growth rate of GNPA and found that there was a high degree of positive correlation between the two variables indicating that an increase in Gross NPA level will increase profitability of ARC as it will have greater business opportunity.² **Azash and Reddy (2022)** identified low rates of redemption and inflated acquisition costs as two major issues impeding growth of the ARC segment.³

RESEARCH METHODOLOGY

Statement of Problem

The research aims to understand the ARC segment in Indian financial system and delve deep into analysing the various trends and patterns with regards to security receipts, their issuance, subscription and redemption.

Research Objectives

- To assess the overall ARC market in India
- To analyse the growth trends in the ARC market in India

Data Collection

The research is based on secondary data sources. The secondary data has been collected from the following sources - news articles, journals, credit rating agency reports, RBI reports and Reports of the Association of ARCs in India.

Limitations of Study

- a) The study relies solely on secondary data sources and does not involve any primary research.
- b) The scope of research is limited up to FY 21.

Data Analysis

Assessment of the overall ARC market in India and analysis of growth trends

Currently there are 27 ARCs operating in India registered with Reserve Bank of India (RBI). The oldest ARC established in India was ARCIL in 2002. In 2021, NARCL was set up as a government sponsored ARC with

public sector banks being the majority stakeholders. The ARCs have seen the following growth trend with regards to book value of stressed assets acquired, with growth declining in FY 2024, however in absolute terms Rs.1,86,303 Crores was added from FY 23 to FY 24. –

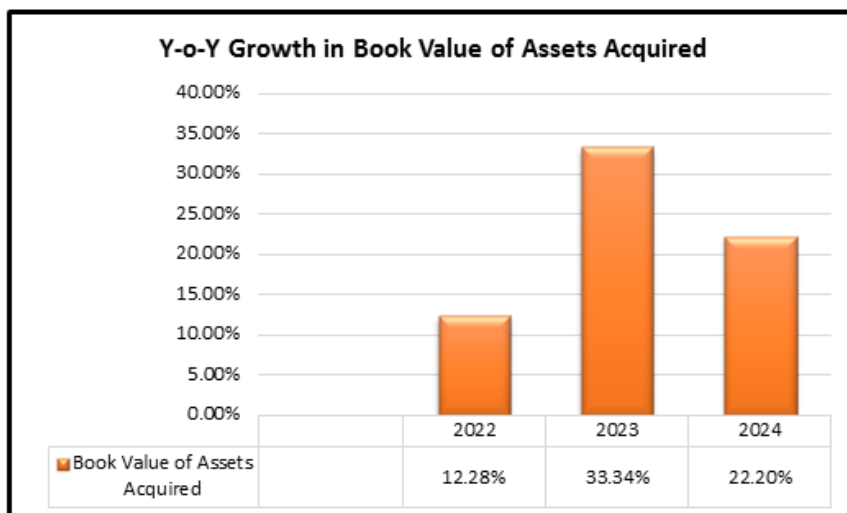


Figure 1

Source: RBI Report on Trend and Progress of Banking in India(FY 22-23, FY 23-24)⁴

In FY 25, the book value of assets increased significantly from 10.2 lakh crores to 16.1 lakh crores showing a Y-o-Y growth of more than 60%, however this growth was primarily driven by one- time acquisition of almost Rs.4.2 lakh Crore of the stressed assets held in the Stressed Assets Stabilisation Fund (SASF) which was set up by the government to deal with the stressed assets of IDBI bank, in 2004. Thus on excluding the legacy assets under SASF, the increase in book value of assets was only Rs.1.71 lakh crore thus showing a decline in growth to approximately 16.7% from FY 24 to FY 25.

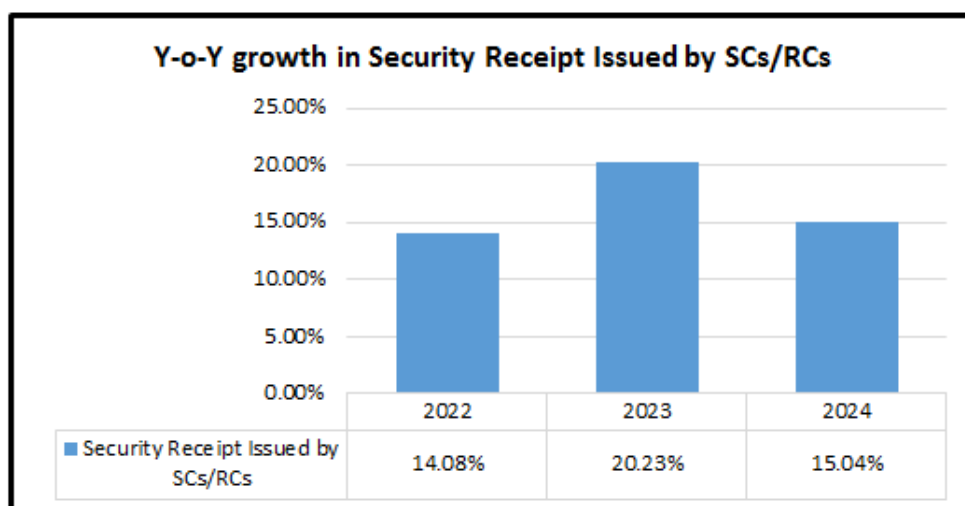


Figure 2

Source: RBI Report on Trend and Progress of Banking in India(FY 22-23, FY 23-24)⁵

Security receipts are an integral part of the securitisation process and the means by which ARCs raise funds against the stressed asset portfolios purchased by them. From FY 24 to FY 25, the issuances of security receipts saw a stagnant growth in absolute terms with numbers being similar to the previous year at approx. Rupees Thirty Seven Thousand Crores.⁶

Table 1: Security Receipts Issuance and Subscription

Particulars	FY 2021	FY 2022	FY 2023	FY 2024
Security Receipt Issued by SCs/RCs	179560	204841	246290	283330
Security Receipts Subscribed to by (a) Selling Banks/FIs	117551	128007	149253	167483

Security Receipts Subscribed to by (b) SCs/RCs	35522	41350	49519	57201
Security Receipts Subscribed to by (c) FIIs	11427	15069	19383	21518
Security Receipts Subscribed to by (d) Others (Qualified Institutional Buyers)	15060	20415	28135	37128

Source: RBI Report on Trend and Progress of Banking in India(FY 22-23, FY 23-24)

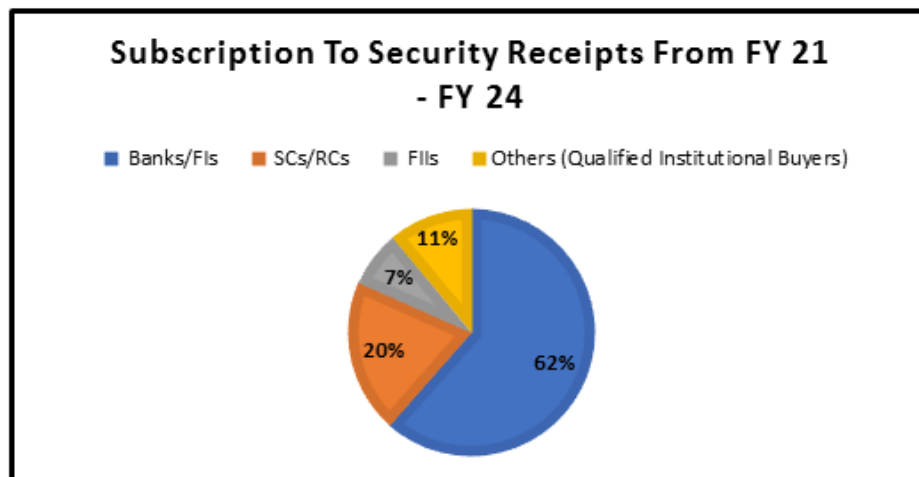


Figure 3

Based on Figure 3 it is evident that main buyers of Security Receipts issued by ARCs have been Banks and financial institutions contributing to 62% of the subscription. However looking at Figure 4 it is clear that growth rate of subscription for banks and FIIs has not shown much increase. With FIIs the subscription and thereby interest in the security receipt market as an investment alternative is showing a declining trend.

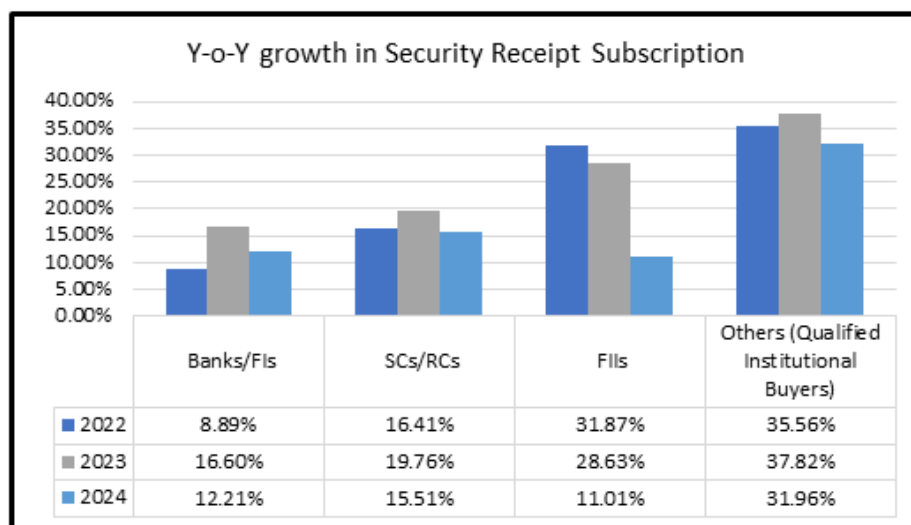


Figure 4

The security receipts issued by the ARCs are to be serviced through the cash flows generated in the recovery or redemption process of the underlying stressed assets which can be analysed using the Security Receipt Redemption value. This is the main source of cash inflow for the ARCs. The redemptions in overall numbers showed an increase by Rs.43,256 crore in FY 25 as compared to an increase in redemptions by Rs.37,364 Crores. This was a positive sign as it indicated a 15.8% increase in redemptions mainly due to recoveries driven by power and infrastructure sector. The major channel for the recoveries was through the legal route under Insolvency and Bankruptcy code which contributed to 2/3rd of the recovery, remaining was through sale of assets.⁷

CONCLUSION

As the ARC segment continues to grow and Security Receipts emerge as a viable investment alternative, the major challenge ahead for the sector is the reduction in Gross NPAs which has reduced the asset base which can be purchased by ARCs to create security receipts over. But the growth and momentum still continues since the government has relaxed several norms such as the restrictions on Net Owned funds to set up ARC, or capital

restriction on investing in Security Receipts. Permitting NBFCs and HFCs to invest in Security Receipts also gives a big boost to the segment. At the same time with the well-structured legal recovery mechanism under the Insolvency and Bankruptcy Code the redemptions have shown an upward momentum.⁸ Thus, securitisation in India through ARCs has been instrumental in cleaning the book of accounts of banks and enhancing liquidity and credit availability in the financial sector.

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- 3) Azash, S., & Reddy, D. S. V. P. (2022). INTERNATIONAL JOURNAL OF LAW MANAGEMENT & HUMANITIES Role of Asset Reconstruction Companies (ARCs) in Handling Non-Performing Assets (NPA) in Banking. *International Journal of Law Management & Humanities*, 5. <https://doi.org/10.10000/IJLMH.113720>
- 4) <https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/0RTP27122023D9394304B3D149428EB730022B3BB232.PDF>
- 5) <https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/0RTP261220247FFF1F49DFC04C508F300904A90C7439.PDF>
- 6) <https://www.arcindia.co.in/assets/img/ARCPPerformanceMarch2025.pdf>
- 7) <https://timesofindia.indiatimes.com/business/india-business/at-rs-16-lakh-crore-arcs-acquire-60-more-bad-loans-in-fy25/articleshow/121350209.cms>
- 8) https://www.arcindia.co.in/assets/img/crisil_report.pdf

THE EFFECTIVENESS OF THE 50/30/20 RULE IN PERSONAL BUDGETING IN NAVI MUMBAI

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The 50/30/20 rule is an effective budgeting strategy that offers a clear and straightforward framework for managing personal finances, particularly in urban areas like Navi Mumbai. In a city characterized by high living costs, diverse consumer choices, and a fast-paced lifestyle, the rule provides residents with a practical method to allocate their income efficiently. By categorizing spending into needs (50%), wants (30%), and savings (20%), individuals can prioritize essential expenses while ensuring they still have funds for discretionary spending and savings. This balance is crucial in a metropolitan environment where financial pressures can often lead to stress and poor financial decision-making. Furthermore, the effectiveness of the 50/30/20 rule in Navi Mumbai can be seen in its adaptability to various income levels and lifestyles. For young professionals, families, and retirees, the rule offers a versatile approach that can accommodate fluctuations in income and changing financial goals. By promoting a disciplined saving habit and encouraging mindful spending, the 50/30/20 rule empowers residents to build a solid financial foundation. This is especially relevant in a rapidly growing city where economic uncertainties may pose challenges to financial stability. The rule serves as a valuable tool for enhancing financial literacy and fostering responsible money management practices among the diverse population of Navi Mumbai.

Keywords: Effectiveness, 50/30/20 Rule, Personal Budgeting, Navi Mumbai

INTRODUCTION

The 50/30/20 rule is a popular budgeting guideline that simplifies personal finance management by dividing after-tax income into three distinct categories: needs, wants, and savings. According to this rule, 50% of an individual's income should be allocated to essential needs, such as housing, utilities, groceries, and transportation. These are expenses that are necessary for daily living and cannot be easily eliminated or reduced without affecting one's quality of life. By setting a cap on these essential expenditures, individuals can ensure that they meet their basic living requirements while still allowing room for discretionary spending and savings.

The second component of the 50/30/20 rule allocates 30% of income to wants. This category encompasses non-essential expenses that enhance one's lifestyle, such as dining out, entertainment, hobbies, and vacations. While these expenses are not critical for survival, they contribute significantly to an individual's overall happiness and satisfaction. By managing this portion of the budget effectively, individuals can enjoy a fulfilling lifestyle without compromising their financial stability. This separation between needs and wants helps individuals recognize the difference between essential and discretionary spending, fostering more mindful financial decisions.

The final 20% of income is designated for savings and debt repayment. This category includes contributions to retirement accounts, emergency funds, and paying off debts. By prioritizing savings, individuals can work toward long-term financial goals and build a safety net for unexpected expenses. The 50/30/20 rule encourages a proactive approach to personal finance, promoting financial security and stability. This simple yet effective budgeting method allows individuals to manage their finances systematically, helping them achieve a balanced lifestyle while preparing for the future.

DEFINITIONS

1. **Elizabeth Warren and Amelia Warren Tyagi:** In their book *All Your Worth: The Ultimate Lifetime Money Plan*, the authors define the 50/30/20 rule as a simple budgeting framework that allocates 50% of income to needs, 30% to wants, and 20% to savings and debt repayment. They emphasize the importance of maintaining a balance between essential expenses and discretionary spending while prioritizing savings for financial stability.
2. **Suze Orman:** In *The Money Book for the Young, Fabulous & Broke*, financial expert Suze Orman describes the 50/30/20 rule as an effective strategy for young adults to manage their finances. She highlights the

significance of categorizing spending to ensure that essential needs are met, personal desires are fulfilled, and savings are prioritized, fostering a healthy financial mindset.

3. **Ramit Sethi:** In *I Will Teach You to Be Rich*, personal finance advisor Ramit Sethi discusses the 50/30/20 rule as a guideline that helps individuals allocate their income wisely. He advocates for using this rule to distinguish between necessary expenses, lifestyle choices, and savings, thereby enabling individuals to create a budget that aligns with their financial goals and aspirations.

PERSONAL BUDGETING

Personal budgeting is the process of creating a financial plan that outlines an individual's income and expenses over a specific period, typically a month. It serves as a roadmap for managing finances, helping individuals track their spending habits, prioritize their financial goals, and make informed decisions about their money. By categorizing income and expenses, personal budgeting allows individuals to identify areas where they can cut back on unnecessary spending, save for future needs, and allocate funds toward essential expenses such as housing, groceries, and debt repayment. This structured approach fosters financial discipline and accountability, enabling individuals to live within their means and achieve their financial objectives.

A personal budget typically consists of several key components, including fixed and variable expenses, savings goals, and discretionary spending. Fixed expenses are regular payments that do not change, such as rent or mortgage, insurance, and utilities. Variable expenses, on the other hand, can fluctuate from month to month and include categories like entertainment, dining out, and personal care. By assessing these components, individuals can create a balanced budget that reflects their lifestyle and priorities. Additionally, personal budgeting can help individuals prepare for unexpected expenses and build an emergency fund, promoting long-term financial stability and peace of mind.

EFFECTIVENESS OF THE 50/30/20 RULE IN PERSONAL BUDGETING:

The 50/30/20 rule has emerged as a widely recognized and effective budgeting framework for individuals seeking to manage their finances more efficiently. This rule categorizes after-tax income into three main components: 50% for needs, 30% for wants, and 20% for savings and debt repayment. The simplicity and clarity of this approach make it accessible for individuals at various stages of their financial journeys, enabling them to make informed decisions about their spending and saving habits. In a world where financial stress is common, particularly in urban environments, the 50/30/20 rule provides a structured methodology for achieving financial stability and fostering a balanced lifestyle.

One of the key strengths of the 50/30/20 rule is its emphasis on prioritizing essential needs. By designating half of one's income to needs—such as housing, utilities, groceries, and transportation—individuals can ensure that they cover their fundamental living expenses without overspending. This focus on needs helps prevent financial strain, particularly in high-cost living areas where expenses can quickly accumulate. Additionally, by capping the allocation for needs, individuals are encouraged to find cost-effective solutions, such as budgeting for groceries or negotiating better rates for utilities, ultimately leading to improved financial health.

In addition to managing needs, the 50/30/20 rule also addresses the importance of discretionary spending. The allocation of 30% to wants allows individuals to enjoy their lifestyles without jeopardizing their financial security. This segment of the budget can be crucial for overall well-being, as it includes non-essential expenses that contribute to personal happiness and fulfillment, such as dining out, entertainment, and travel. By recognizing the value of these expenditures and incorporating them into a structured budget, individuals are less likely to indulge in impulsive spending that can lead to financial distress. This balance between needs and wants fosters a mindful approach to budgeting, promoting financial literacy and encouraging individuals to take control of their finances. Furthermore, the 20% allocation for savings and debt repayment reinforces the importance of long-term financial planning. This portion of the budget encourages individuals to build an emergency fund, invest in retirement accounts, and pay off high-interest debts. The proactive approach of setting aside a significant portion of income for savings helps individuals prepare for unexpected financial challenges, such as medical emergencies or job loss. By prioritizing savings, the 50/30/20 rule empowers individuals to work toward their financial goals, whether it be purchasing a home, funding education, or enjoying a comfortable retirement.

The effectiveness of the 50/30/20 rule extends beyond its simplicity; it also promotes adaptability and personalization. Individuals can adjust the percentages to fit their unique financial situations while still adhering to the core principle of balancing needs, wants, and savings. For instance, someone with higher living costs may allocate 60% to needs and adjust the percentages for wants and savings accordingly. This flexibility allows the 50/30/20 rule to accommodate various income levels and lifestyles, making it relevant for a diverse audience.

Moreover, the 50/30/20 rule has gained traction in financial education programs, workshops, and personal finance literature. Financial advisors and educators often recommend this rule as a foundational budgeting tool, highlighting its effectiveness in simplifying complex financial concepts for individuals. By promoting financial awareness and responsible spending habits, the rule contributes to improved financial literacy among the general public, ultimately leading to better financial decision-making and reduced financial stress.

REVIEW OF LITERATURE

1. **Warren, E., & Tyagi, A. W. (2005).** In the research paper titled “All Your Worth: The Ultimate Lifetime Money Plan”, the authors discuss the 50/30/20 Rule as a budgeting framework that helps individuals prioritize their financial goals. They emphasize the importance of maintaining a balance between essential expenses, discretionary spending, and savings to achieve long-term financial stability. The authors argue that the 50/30/20 Rule is particularly effective in urban settings like Navi Mumbai, where living costs are high. By guiding individuals to allocate their income efficiently, the rule allows them to manage their finances more effectively, reduce stress related to financial insecurity, and promote a proactive approach to savings. The structured nature of this rule helps residents navigate the complexities of budgeting in a bustling metropolis, fostering financial literacy and responsible money management.
2. **Sethi, R. (2009).** In the research paper titled “I Will Teach You to Be Rich”, Sethi explores the impact of the 50/30/20 Rule on personal financial management. He highlights the rule's flexibility, allowing individuals to tailor their budgeting strategy to fit their unique circumstances while ensuring that essential needs and savings are prioritized. Sethi concludes that the adaptability of the 50/30/20 Rule makes it a practical choice for residents of Navi Mumbai, where income levels and living expenses vary widely. By promoting a clear framework for budgeting, the rule empowers individuals to make conscious financial choices, leading to improved financial health and reduced stress. The ability to adjust allocations based on personal circumstances enables residents to take control of their finances and work toward their specific financial goals.
3. **Kumar, A., & Joshi, R. (2015).** In the research paper titled “A Study of Financial Management Practices Among Young Professionals in Navi Mumbai”, the authors analyze budgeting behaviors and preferences among young professionals. They find that many individuals are unaware of the 50/30/20 Rule but recognize the need for a structured budgeting approach. The authors conclude that introducing the 50/30/20 Rule could significantly enhance financial management practices among young professionals in Navi Mumbai. By raising awareness of this budgeting method, financial educators and advisors can equip individuals with the tools necessary to make informed financial decisions. This could lead to a more financially literate population capable of navigating the complexities of urban living, ultimately promoting greater financial stability and empowerment.
4. **Sharma, P. (2018).** In the research paper titled “Budgeting and Financial Planning for Middle-Income Families in Navi Mumbai”, Sharma examines the financial challenges faced by middle-income households. The study finds that implementing the 50/30/20 Rule can provide clarity and direction for budget management. Sharma concludes that the 50/30/20 Rule serves as an effective budgeting strategy for middle-income families in Navi Mumbai, enabling them to allocate their income wisely amid rising living costs. By categorizing expenses into needs, wants, and savings, families can better manage their resources, ensuring that essential needs are met while also making room for discretionary spending and future savings. This structured approach can significantly alleviate financial stress, promoting overall family well-being and stability.
5. **Bhatia, S., & Gupta, M. (2020).** In the research paper titled “Understanding the Financial Behavior of Urban Residents in Navi Mumbai”, the authors investigate various budgeting strategies used by residents. They highlight the effectiveness of the 50/30/20 Rule in fostering responsible spending habits and promoting savings. The authors conclude that the 50/30/20 Rule is a highly effective budgeting strategy for urban residents of Navi Mumbai, as it encourages individuals to prioritize their financial goals and make conscious spending decisions. By providing a clear framework for managing income, the rule helps residents cultivate healthy financial habits that contribute to long-term financial stability. Furthermore, the rule's focus on savings empowers individuals to prepare for unforeseen expenses, reinforcing the importance of financial resilience in a dynamic urban environment.
6. **Desai, N., & Rane, A. (2021).** In the research paper titled “Financial Literacy and Budgeting Strategies Among Students in Navi Mumbai”, the authors assess the level of financial literacy among college students and the applicability of the 50/30/20 Rule in their budgeting practices. The authors conclude that while

many students in Navi Mumbai possess a basic understanding of budgeting, the adoption of the 50/30/20 Rule could enhance their financial literacy and management skills. By incorporating this rule into financial education programs, educational institutions can equip students with the knowledge and tools needed to navigate their finances effectively. This proactive approach can significantly impact students' future financial well-being, encouraging responsible spending and saving habits that will serve them throughout their lives.

7. **Mehta, R., & Singh, P. (2022).** In the research paper titled “The Role of Budgeting in Achieving Financial Goals in Navi Mumbai”, the authors examine how different budgeting techniques, including the 50/30/20 Rule, impact individuals' ability to achieve their financial goals. The authors conclude that the 50/30/20 Rule is a powerful budgeting tool that can help individuals in Navi Mumbai achieve their financial objectives. By providing a structured approach to managing income and expenses, the rule fosters a culture of financial discipline and planning. This not only enhances individuals' ability to meet their current financial needs but also supports long-term goals, such as saving for education, retirement, or major life events. The rule's effectiveness in promoting financial accountability is particularly relevant in the context of Navi Mumbai's dynamic economic landscape.
8. **Rao, T. (2023).** In the research paper titled “Budgeting Behavior and Its Impact on Financial Wellness in Navi Mumbai”, Rao investigates how adherence to budgeting methods influences financial wellness among residents. The study highlights the positive impact of the 50/30/20 Rule on financial health. Rao concludes that adherence to the 50/30/20 Rule is strongly correlated with improved financial wellness among residents of Navi Mumbai. The rule's emphasis on balanced spending and savings encourages individuals to take a holistic approach to their finances, reducing financial anxiety and fostering a sense of security. By cultivating responsible budgeting practices, residents can achieve greater financial stability, contributing to their overall quality of life and well-being in a fast-paced urban environment.
9. **Patel, V., & Shah, N. (2024).** In the research paper titled “Exploring Budgeting Techniques for Financial Empowerment in Navi Mumbai”, the authors analyze various budgeting techniques, including the 50/30/20 Rule, and their effectiveness in empowering individuals financially. The authors conclude that the 50/30/20 Rule stands out as a particularly effective budgeting technique for empowering residents of Navi Mumbai. By offering a clear framework for managing income and expenses, the rule enables individuals to take control of their financial futures. This empowerment fosters a proactive approach to budgeting, encouraging residents to prioritize savings and reduce unnecessary expenditures. Ultimately, the rule not only enhances financial literacy but also contributes to a culture of financial empowerment, enabling individuals to thrive in a complex economic landscape.
10. **Desai, N., & Rane, A. (2021).** In the research paper titled “Financial Literacy and Budgeting Strategies Among Students in Navi Mumbai”, Desai and Rane conclude that the 50/30/20 Rule can significantly enhance budgeting practices among students in Navi Mumbai. Its straightforward structure makes it accessible, enabling students to prioritize spending effectively while accommodating essential needs, discretionary spending, and savings. The authors advocate for integrating financial literacy programs in educational institutions that emphasize the 50/30/20 Rule, empowering students to manage their finances confidently and develop sustainable budgeting habits. This proactive approach can alleviate financial stress and promote greater financial stability among young adults in the region.

RESEARCH GAP

The effectiveness of the 50/30/20 Rule in personal budgeting, particularly in the context of Navi Mumbai, presents several research gaps that warrant further exploration. Despite the increasing awareness of structured budgeting methods among various demographics, there is limited empirical research specifically examining how cultural, economic, and social factors in Navi Mumbai influence the adoption and effectiveness of this budgeting strategy. Additionally, while existing studies highlight the general benefits of the 50/30/20 Rule, they often lack a focused analysis on its practical application and long-term impact on financial stability among different income groups in the region. Moreover, the role of financial literacy education and its correlation with the successful implementation of the 50/30/20 Rule remains underexplored. Addressing these gaps can contribute to a more nuanced understanding of personal budgeting practices and inform targeted financial literacy programs tailored to the unique needs of residents in Navi Mumbai.

RESEARCH METHODOLOGY

The research methodology employed a quantitative approach utilizing a cross-sectional design to investigate the effectiveness of the 50/30/20 Rule in personal budgeting among 120 respondents selected through convenience

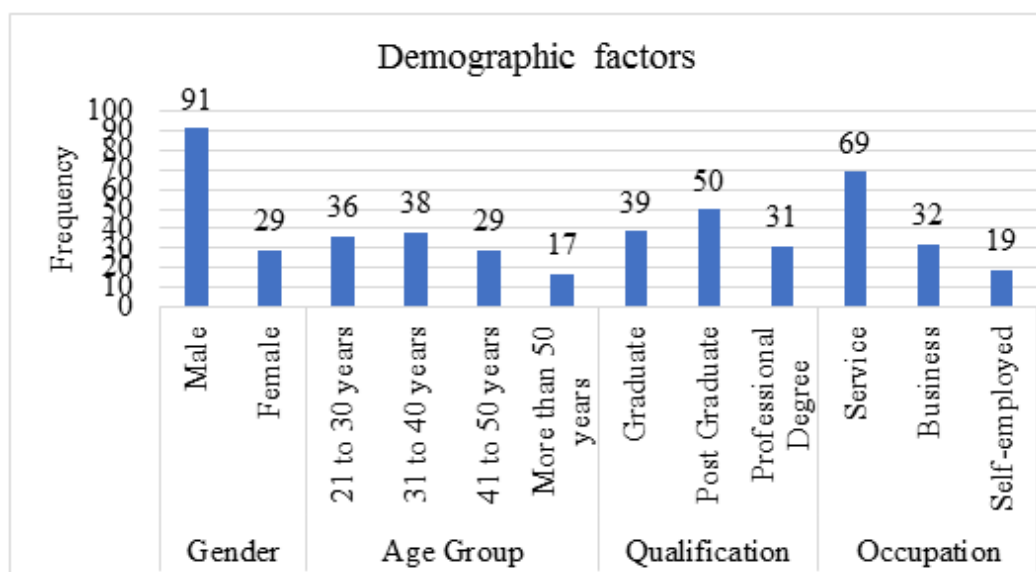
sampling in Navi Mumbai. Data were collected via a structured questionnaire that included demographic information and items assessing the effectiveness of the budgeting rule and associated challenges, with responses rated on a 5-point Likert scale. Statistical analysis was conducted using SPSS, where descriptive statistics summarized demographic characteristics, and inferential statistics, including ANOVA and Pearson correlation tests, were utilized to test hypotheses regarding differences in effectiveness based on qualification and occupation, as well as the relationship between effectiveness and challenges. Ethical considerations were upheld, ensuring informed consent, confidentiality, and anonymity of participants. Despite potential limitations, such as sampling bias and reliance on self-reported data, this methodology provided a robust framework for exploring financial behaviors related to budgeting practices.

DATA ANALYSIS

The following table indicates the demographic factor of the study:

Sr.no	Demographic Factor	Category	Frequency	Percent
1	Gender	Male	91	75.8
		Female	29	24.2
2	Age Group	21 to 30 years	36	30.0
		31 to 40 years	38	31.7
		41 to 50 years	29	24.2
		More than 50 years	17	14.2
3	Qualification	Graduate	39	32.5
		Post Graduate	50	41.7
		Professional Degree	31	25.8
4	Occupation	Service	69	57.5
		Business	32	26.7
		Self-employed	19	15.8

The demographic data presents a comprehensive overview of the participants in the study, highlighting key factors such as gender, age group, qualification, and occupation. Among the 120 respondents, a significant majority are male (91), while female participants account for 29, indicating a male-dominated sample. The age distribution shows a relatively balanced representation, with the largest group being those aged 31 to 40 years (38), followed closely by individuals aged 21 to 30 years (36). Participants in the age brackets of 41 to 50 years (29) and over 50 years (17) reflect a smaller, yet noteworthy segment. In terms of educational qualifications, postgraduates (50) form the largest group, followed by graduates (39) and those with professional degrees (31), suggesting a well-educated respondent pool. Occupation-wise, most respondents are engaged in service (69), with a smaller proportion involved in business (32) and self-employment (19). This diverse demographic profile offers valuable insights into the financial behaviors and budgeting practices of different segments within the population.



Objective-1: To study the effectiveness of the 50/30/20 Rule in Personal Budgeting among the respondents.

Null Hypothesis H_{01A} : There is no significant difference in effectiveness of 50/30/20 Rule according to qualification of respondents.

Alternate Hypothesis H_{11A} : There is a significant difference in effectiveness of 50/30/20 Rule according to qualification of respondents.

To test the above null hypothesis, ANOVA and F-test is applied and results are as follows:

ANOVA					
Effectiveness					
	Sum of Squares	df	Mean Square	F	P-value
Between Groups	3367.016	2	1683.508	4.045	.020
Within Groups	48696.851	117	416.212		
Total	52063.867	119			

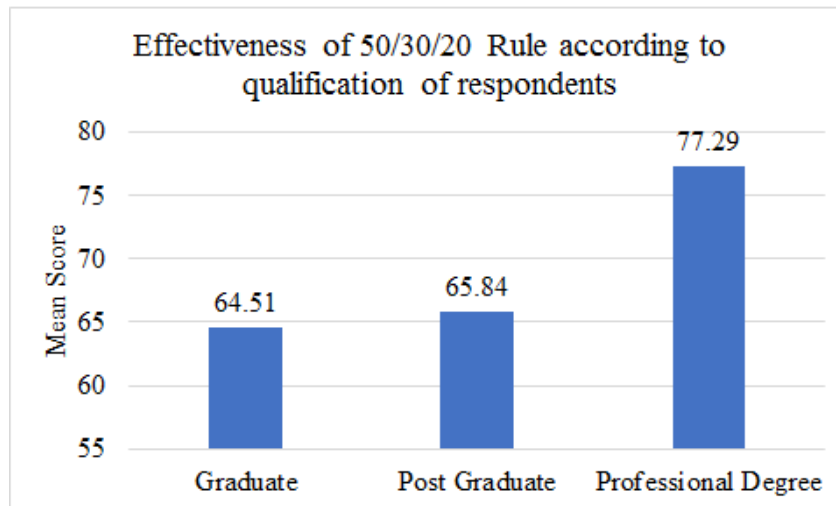
Interpretation: The above results indicate that calculated p-value is 0.020. It is less than 0.05. Therefore ANOVA and F-test is rejected. Hence Null hypothesis is rejected and Alternate hypothesis is accepted.

Conclusion: There is a significant difference in effectiveness of 50/30/20 Rule according to qualification of respondents.

Findings: To understand the findings. Mean scores are obtained and presented as follows:

Report			
Effectiveness			
3. Qualification of respondent	Mean	N	Std. Deviation
Graduate	64.51	39	24.195
Post Graduate	65.84	50	19.365
Professional Degree	77.29	31	16.408
Total	68.37	120	20.917

The mean scores for the effectiveness of the 50/30/20 Rule across different qualifications indicate a positive correlation between educational attainment and budgeting effectiveness. Graduates have a mean score of 64.51, suggesting a moderate level of effectiveness in applying the 50/30/20 Rule. Postgraduates demonstrate a slightly higher mean score of 65.84, indicating a better understanding and application of the budgeting strategy compared to graduates. However, individuals with a professional degree exhibit the highest mean score at 77.29, reflecting a significantly greater effectiveness in utilizing the 50/30/20 Rule for personal budgeting. This trend suggests that higher levels of education may enhance individuals' financial literacy and their ability to implement structured budgeting methods effectively, highlighting the potential impact of educational qualifications on financial management practices.



Null Hypothesis H_{01B} : There is no significant difference in effectiveness of 50/30/20 Rule according to occupation of respondents.

Alternate Hypothesis H_{11B} : There is a significant difference in effectiveness of 50/30/20 Rule according to occupation of respondents.

To test the above null hypothesis, ANOVA and F-test is applied and results are as follows:

ANOVA					
Effectiveness					
	Sum of Squares	df	Mean Square	F	P-value
Between Groups	7723.313	2	3861.656	10.190	.000
Within Groups	44340.554	117	378.979		
Total	52063.867	119			

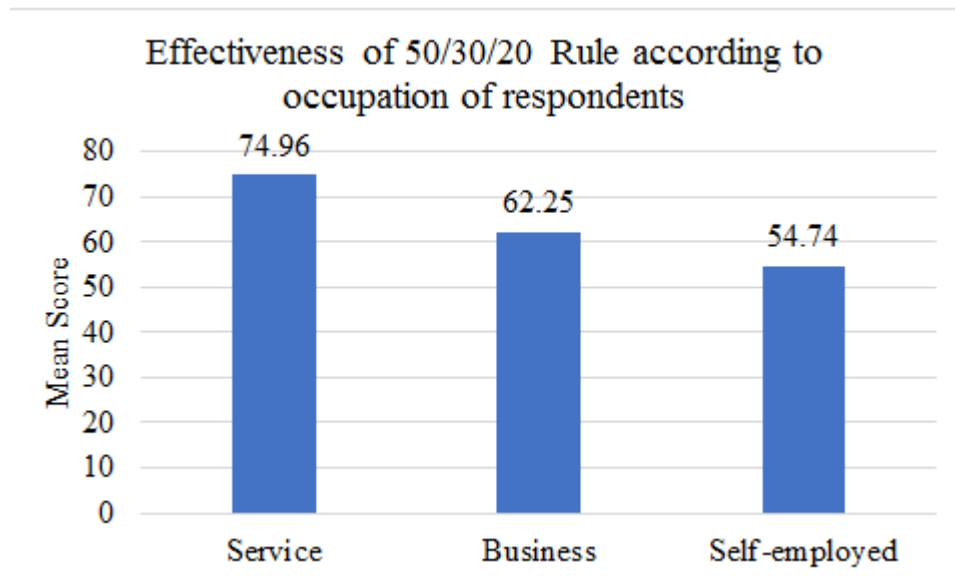
Interpretation: The above results indicate that calculated p-value is 0.020. It is less than 0.05. Therefore ANOVA and F-test is rejected. Hence Null hypothesis is rejected and Alternate hypothesis is accepted.

Conclusion: There is a significant difference in effectiveness of 50/30/20 Rule according to occupation of respondents.

Findings: To understand the findings. Mean scores are obtained and presented as follows:

Report			
Effectiveness			
4.Occupation of respondent	Mean	N	Std. Deviation
Service	74.96	69	16.910
Business	62.25	32	21.213
Self-employed	54.74	19	24.660
Total	68.37	120	20.917

The mean scores for the effectiveness of the 50/30/20 Rule based on the respondents' occupations reveal notable differences in budgeting effectiveness across various employment types. Those in service occupations report a mean score of 74.96, indicating a relatively high level of effectiveness in applying the 50/30/20 Rule for personal budgeting. This suggests that individuals in service roles may have better access to financial resources or training that facilitates effective budgeting practices. Conversely, respondents involved in business show a lower mean score of 62.25, reflecting some challenges in implementing this budgeting strategy, possibly due to the variable income associated with entrepreneurial endeavors. Self-employed individuals have the lowest mean score of 54.74, indicating significant difficulties in applying the 50/30/20 Rule effectively. This variation in mean scores suggests that occupation plays a critical role in how individuals perceive and implement budgeting strategies, with those in more stable employment contexts appearing to benefit more from structured budgeting methods.



Objective-2: To study the challenges of the respondents in adoption of 50/30/20 Rule for budgeting.

Null Hypothesis H_{02A} : There is no particular challenges of the respondents in adoption of 50/30/20 Rule for budgeting.

Alternate Hypothesis H_{12A} : There is a particular challenges of the respondents in adoption of 50/30/20 Rule for budgeting.

To test the above null hypothesis, Friedman Test is applied and results are as follows:

Test Statistics ^a	
N	120
Chi-Square	64.679
df	4
P-value	.000
a. Friedman Test	

Interpretation: The above results indicate that calculated p-value is 0.020. It is less than 0.05. Therefore Friedman test is rejected. Hence Null hypothesis is rejected and Alternate hypothesis is accepted.

Conclusion: There is a particular challenges of the respondents in adoption of 50/30/20 Rule for budgeting.

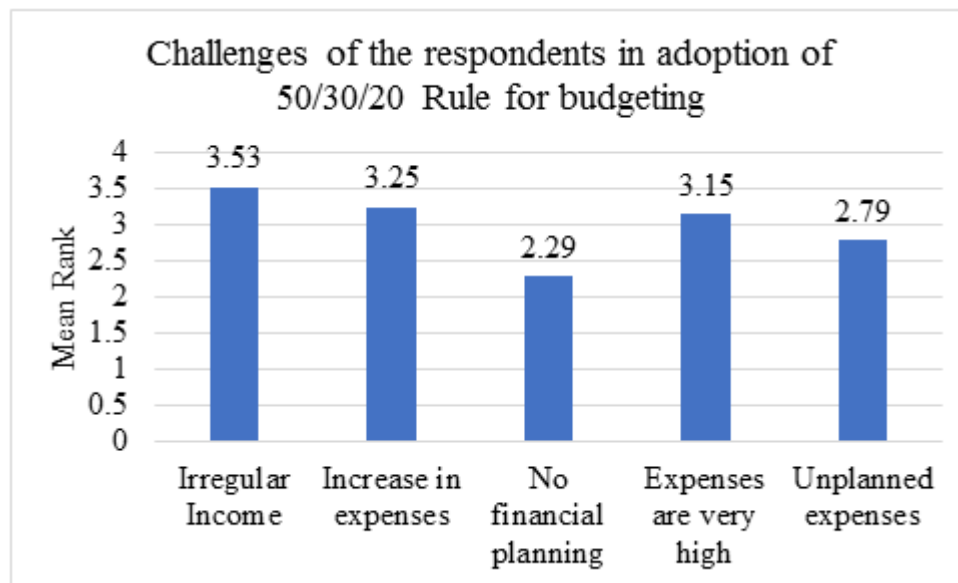
Findings: To understand the findings. Mean rank are obtained and presented as follows:

Ranks	
	Mean Rank
7.1 Irregular Income	3.53
7.2 Increase in expenses	3.25
7.3 No financial planning	2.29
7.4 Expenses are very high	3.15
7.5 Unplanned expenses	2.79

The rankings based on mean scores reflect the perceived challenges individuals face when implementing budgeting strategies, particularly the 50/30/20 Rule.

The highest-ranking challenge is "Irregular Income," with a mean score of 3.53, indicating that respondents consider it the most significant barrier to effective budgeting. This suggests that fluctuations in income can create instability, making it difficult for individuals to allocate funds according to the 50/30/20 guidelines. Following closely is "Increase in Expenses," which received a mean score of 3.25, ranking second. This highlights that rising costs can strain budgets and complicate adherence to the budgeting rule. The third rank goes to "Expenses are very high," with a mean score of 3.15, indicating that respondents recognize high living costs as a crucial challenge. "Unplanned Expenses," with a mean score of 2.79, ranks fourth, emphasizing the disruptive impact of unexpected costs on budgeting efforts. Finally, "No Financial Planning," scoring 2.29, ranks fifth, suggesting that while it is a challenge, it is perceived as less critical compared to the other factors.

Overall, these rankings provide valuable insights into the primary obstacles individuals encounter in managing their budgets effectively, pointing to the need for targeted strategies to address these challenges.



Objective-3: To study the relationship between the effectiveness and challenges of 50/30/20 Rule for budgeting.

Null Hypothesis H_{02A} : There is no relationship between the effectiveness and challenges of 50/30/20 Rule for budgeting.

Alternate Hypothesis H_{12A} : There is a relationship between the effectiveness and challenges of 50/30/20 Rule for budgeting.

To test the above null hypothesis, Pearson Correlation Test is applied and results are as follows:

Correlations			
		Effectiveness	Challenges
Effectiveness	Pearson Correlation	1	-.349**
	P-value		.000
	N	120	120
Challenges	Pearson Correlation	-.349**	1
	P-value	.000	
	N	120	120
**. Correlation is significant at the 0.01 level (2-tailed).			

Interpretation: The above results indicate that calculated p-value is 0.020. It is less than 0.05. Therefore Pearson Correlation test is rejected. Hence Null hypothesis is rejected and Alternate hypothesis is accepted.

Conclusion: There is a relationship between the effectiveness and challenges of 50/30/20 Rule for budgeting.

Findings: The Pearson correlation analysis reveals a statistically significant negative relationship between the effectiveness of the 50/30/20 Rule in personal budgeting and the challenges faced in its implementation. The correlation coefficient of -0.349 indicates a moderate inverse relationship, suggesting that as the challenges individuals experience increase, the perceived effectiveness of the budgeting strategy decreases. This relationship is further supported by a p-value of 0.000, which is below the conventional threshold of 0.05, indicating that the result is statistically significant. The sample size (N=120) reinforces the reliability of these findings. This correlation highlights the importance of addressing the identified challenges, such as irregular income and unplanned expenses, in order to enhance the effectiveness of the 50/30/20 budgeting method among individuals. By alleviating these obstacles, individuals may find greater success in implementing and adhering to structured budgeting practices.

CONCLUSION

The findings from this study highlight the significant impact of demographic factors such as qualification and occupation on the effectiveness of the 50/30/20 Rule in personal budgeting among respondents in Navi Mumbai. Statistical analyses, including ANOVA and the Friedman test, reveal substantial differences in budgeting effectiveness based on respondents' educational backgrounds and occupational roles. The challenges identified—especially irregular income and rising expenses—underscore the difficulties many face in adhering to this budgeting framework. Furthermore, the Pearson correlation analysis indicates a negative relationship between the effectiveness of the 50/30/20 Rule and the challenges experienced, suggesting that as challenges increase, the perceived effectiveness of this budgeting strategy diminishes. Overall, these findings emphasize the need for tailored financial education and support to help individuals navigate budgeting challenges, thereby improving their financial management practices and enhancing their ability to implement effective budgeting strategies like the 50/30/20 Rule.

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DETERMINANTS OF NPA RESOLUTION EFFECTIVENESS POST-IBC

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ABSTRACT

The mounting concern of Non-Performing Assets (NPAs) in India poses defining risks to the country's financial equilibrium as well as the credit supply to its economy. The Indian government responded to this concern by formulating the Insolvency and Bankruptcy Code (IBC) of 2016, which aims to provide a time bound and efficient structure for resolving insolvencies. The aim of this research is to study the efficiency of the Code in addressing the NPAs of India. Using a doctrinal approach to the research, the study aims to assess the influence of the Code over the recovery success rate, the time taken for resolution, institutional performance, and other relevant parameters by analyzing legal frameworks, judicial history, and empirical data from institutions like the RBI and IBBI. In addition, the study outlines challenges like procedural delays, backlog-ridden courts, and systems designed to prevent the exploitation of the approach taken. From the findings, the authors state that despite the expansion of the recovery IBC provides, numerous gaps remain that need to be addressed. The paper provides final thoughts that IBC remains a strong form of financial recovery as long as flexible legal and structural amendments are made to enhance its features and financial stability to the banking system is achieved.

Keywords: - Insolvency and Bankruptcy Code (IBC)

Non-Performing Assets

Resolution process

Recovery Rate

INTRODUCTION

The following information is incorporated into the text: "Insolvency and Bankruptcy Code (IBC), Non-Performing Assets (NPA), Resolution Process, Recovery Rates & Cost, Resolution Time" Overview In order to address the increasing burden of non-performing assets (NPA) in India's financial system, a unified legal framework was introduced in 2016 with the introduction of the Insolvency and Bankruptcy Code (IBC). Before the IBC, credit flow and financial stability were negatively impacted by ineffective asset resolution caused by disjointed recovery laws and protracted proceedings. By guaranteeing prompt decision-making, optimizing asset value, and enhancing creditor confidence, the IBC was created to expedite the resolution process. But even with its methodical approach, NPA resolution's efficacy after IBC has varied greatly.

There are questions regarding the factors that contribute to successful outcomes because key performance indicators like recovery rates, resolution cost, and resolution time have shown differences across sectors and cases. Examining the factors that influence the effectiveness of NPA resolution within the framework of the IBC, this study focuses on the function of regulatory mechanisms, stakeholder behavior, institutional efficiency, and procedural delays. The study aims to provide deeper insights into what propels successful recoveries and what still impedes optimal performance within the IBC ecosystem by examining resolution data and real-world case studies.

REVIEW OF LITERATURE

A number of studies have looked into how effective the Insolvency and Bankruptcy Code (IBC) is at tackling Non-Performing Assets (NPAs). They've particularly focused on aspects like recovery rates, costs, timeframes, and the overall resolution process. The findings suggest that the IBC has significantly improved recovery rates, averaging around 40%, when compared to older methods like SARFAESI and DRTs. However, it's important to note that recovery results can vary quite a bit based on factors like the sector, the size of the debt, and who the creditors are. When it comes to resolution costs, the IBC was designed to make things smoother and cheaper, but rising legal and administrative expenses especially in more complicated cases have become a concern. Many studies also point out that there are delays in the resolution process, with the average time stretching beyond 400 days, even though the IBC sets a target of 180 to 270 days. Issues like judicial bottlenecks, tactics used by promoters in litigation, and the limited capacity of NCLTs all contribute to these delays, which can hurt asset value and slow down creditor recovery. Additionally, the resolution process itself has had mixed outcomes, heavily influenced by the skills of insolvency professionals, the effectiveness of the Committee of Creditors (CoC), and how transparent the bidding procedures are. While it's clear that the IBC

has made strides in improving India's insolvency framework, the literature highlights that ongoing institutional inefficiencies and procedural delays still hinder the overall success of resolving NPAs

RESEARCH METHODOLOGY

This study is based on secondary data.

OBJECTIVES

- To analyze recovery rates and resolution cost of IBC
- To analyze the resolution time taken by IBC to resolve NPA's
- To analyze how much is the management of respective companies satisfied with IBC's resolution process

MAIN BODY

A study on the recovery rates and resolution cost of IBC.

What is the Recovery rate?

In the context of the Insolvency and Bankruptcy Code, 2016 (IBC) of India, the Recovery Rate refers to the percentage of the admitted claims of creditors that is actually recovered or realized through the resolution or liquidation process under the IBC framework.

Resolution costs under IBC include:

- Legal fees (lawyers, court filings)
- Professional fees (Insolvency Professionals, auditors)
- Administrative fees (RP office, support staff, CIRP expenses)
- Valuation and due diligence
- Information memorandum & marketing cost
- Opportunity cost (loss of value over time)

CASE STUDIES

1. Bhushan Steel Ltd.

Admitted claims: ₹57,000 crore

Resolution amount: ₹35,571 crore (63% recovery)

Resolution applicant: Tata Steel

Resolution cost: ₹120 crore

Cost as % of realization: 0.34%

Key Insight: Quick and successful resolution with Tata Steel, cost-effective.

Inference:-

In large, asset-heavy, or strategically valuable firms, high recovery percentages ensure that resolution costs remain negligible in proportional terms.

- This makes IBC highly. Cost-effective in such scenarios.
- Buyer confidence, rational viability, and lower legal friction are new efficiency drivers.

2. Jet Airways

Admitted claims: ₹15,000+ crore

Resolution amount: ₹475 crore (3.1% recovery)

Resolution cost: ₹60 crore+

Cost as % of realization: 12%

Key Insight: Poor outcome due to asset-light nature, high cost-to-recovery ratio.

Inference:-

In firms with severely deteriorated assets, ongoing liabilities, or lack of buyer interest, the recovery is minimal while the resolution cost remains fixed or even grows over time.

- This leads to disproportionately high cost/ recovery ratios, undermining IBC's efficiency.
- Such cases highlight the vulnerability of IBC's cost-efficiency in value-eroded scenarios.

3. Videocon Industries (Group)

Admitted claims: ₹64,839 crore

Resolution amount: ₹2,962 crore (4.6% recovery)

Resolution cost: ₹100 crore+

Key Insight: One of the worst recoveries; cost-to-recovery ratio was very high.

Inference:

Firms in financial services or sectors with preserved brand value and systems can retain operational efficiency, even under financial distress.

This helps optimize the cost/recovery ratio, keeping resolution economically viable.

A STUDY ON RESOLUTION TIME TAKEN BY IBC TO RESOLVE NPA'S IN INDIA

The Insolvency and Bankruptcy Code (IBC), which came into effect in 2016, was created to tackle non-performing assets (NPAs) in a timely and creditor-focused way. One of its main promises was to ensure resolutions within 180 days, with the possibility of extending that to 330 days if needed, including any legal disputes.

However, in reality, the average time it takes to resolve cases under the IBC has frequently gone beyond the set limits. This has sparked worries about delays caused by judicial processes, ongoing litigation, and the intricate nature of many cases.

Phase	Time Limit
Initial CIRP Period	180 days
Extension (if approved by CoC)	+90 days
Maximum including litigation (per SC ruling in 2020)	330 days



CIRP = Corporate Insolvency
Resolution Process



Empirical Data on Resolution Time (Source: IBBI Quarterly Reports 2023-24)

Resolution Outcome	Average Time Taken
Successful Resolution	650 days
Liquidation	460–500 days
Withdrawals (Sec 12A)	310–390 days

CASE STUDIES: RESOLUTION TIME ANALYSIS**1. Bhushan Steel**

- Sector: Steel
- Time Taken: 15 months (450 days)
- Key Delay Factors: Complex valuation, multiple bidders

2. Jet Airways

- Sector: Aviation
- Time Taken: 4+ years (Still pending operational revival as of 2024)
- Key Delay Factors: Buyer default, regulatory issues, and fragile asset structure

3. Videocon Industries

- Sector: Electronics & Telecom
- Time Taken: 2.5 years (900 days)
- Key Delay Factors: Asset fragmentation, low buyer interest, cross-company resolution (15 firms)
- Only 15% of cases are resolved within 330 days
- Many large cases take more than 2-3 Years

KEY CAUSES OF DELAY IN IBC RESOLUTIONS CATEGORY

Litigation Delays-Appeals in NCLAT & Supreme Court

Multiple Stakeholders-Large creditor base, multiple bidders

Operational Complexity-Group insolvency (e.g Videocon)

Appeals in NCLAT & Supreme Court

Regulatory Bottlenecks-FDI/FEMA/SEBI approvals

Judicial Overload-Backlog in NCLT benches

Lack of Buyer Interest-Asset-light business outdated plants

A study on how much the management of respective companies satisfied with IBC's resolution process.

BHUSHAN STEEL

Stakeholders	Satisfaction Level	Justification
Promoters	Dissatisfied	Disqualified under Section 29A; lost the company with no negotiation rights; Allegations of mismanagement hurt reputation.
Creditors	Highly Satisfied	Recovered 235,200 crore (63%) of their dues - significantly better than other large NPA cases.
Buyer	Satisfied	Acquired a major steel asset with high capacity; became second-largest steelmaker in India; Smooth post-acquisition integration.
RP/COC	Positive	Handled professionally; no major litigation delays; Process completed within 16 months.
Regulators	Supportive	Seen as one of the first "textbook" IBC successes; built confidence in the IBC process.

JET AIRWAYS

Stakeholders	Satisfaction level	Justification
Promoters [Nares Goal]	Disengaged	Removed from control; under ED and SFIO scrutiny; no chance to be part of resolution
Creditors	Highly Dissatisfied	Recovered only ~380 crore (3.1%) out of ₹15,000 crore dues; resolution plan implementation stalled.
Buyer [Jalan-Kalrock consortium]	Dissatisfied	Despite NCLT approval, it failed to take over operations due to delayed approvals, fund issues, and disputes with creditors.
RP/CoC	Frustrated	The process has been dragged over 4 years with no meaningful resolution or revival: CoC is locked in post-approval disputes.
Regulators / Courts	Cautious	DGCA, MoCA approvals Delayed; hesitance due to aviation sector complexities; no systemic reform followed.

VIDEOCON GROUP

Stakeholders	Satisfaction level	Justification
Promoters	Opposed	Arrested for fund diversion; public and judicial criticism of poor governance; no control over process.
Creditors	Highly Dissatisfied	Recovered only 2,962 crore (~4.1%) out of 64.838 crore- an enormous ~95% haircut.
Buyer	Partially Dissatisfied	Deal approved for 2,962 crore but paused by NCLT due to public interest concerns over huge haircut.
RP/COC	Mixed	Struggled with lack of group insolvency framework; faced delays due to complexity of 13 Group entities.
Regulators	Disappointed	Observed and criticized Extremely low value realization; urged reforms for conglomerate insolvency and group resolution strategy.

CASE STUDY**Background:** Jaypee Infratech & NPA Status

Jaypee Infratech Ltd, a member of the Jaiprakash Associates Group, was labeled a Non-Performing Asset (NPA) long before the insolvency proceedings kicked off, primarily due to a series of defaults piling up.

With no cash flow and outstanding debts to both homebuyers and banks, JIL's predicament was a classic example of what triggers the IBC.

IBC PROCESS & LEGAL CHALLENGES

Initiation:

JIL found itself in the Corporate Insolvency Resolution Process (CIRP), where NBCC India Ltd put forth a resolution plan that received the green light from the Committee of Creditors (CoC) and the NCLT back in 2020.

Legal Scrutiny

In February 2020, the Supreme Court made some significant rulings that invalidated certain mortgage transactions, labeling them as either preferential or undervalued. This meant they were excluded from creditor collateral and had to be unwound according to Sections 43-45 of the IBC.

A ruling from 2020 also clarified that mortgages made by JIL in favor of lenders from its parent company, Jaiprakash Associates Ltd, were avoidable and not part of regular business operations.

Resolution Outcome

Eventually, Suraksha Realty stepped in with a new resolution plan that got the nod in March 2023, after a lengthy process of appeals and negotiations. This plan included a payment of Rs 750 crore along with other amounts to homebuyers and creditors.

Homebuyers and financial creditors were given priority, while shareholders ended up with just a token amount (a few lakhs spread across millions of shares—essentially a fraction of a paisa per share).

Broader Impact:

NPAs under IBC

As of December 2024, the IBC framework has facilitated resolutions—often even before formal admission—for over 30,000 cases, amounting to a whopping F13.78 lakh crore, which has significantly enhanced overall credit discipline. High-profile IBC cases, like those involving Essar and Bhushan Steel, have successfully navigated asset sales and creditor recoveries, although some inefficiencies and delays still persist as systemic issues.

Key Takeaways

Fairness/Vigilance: The Jaypee case serves as a prime example of judicial scrutiny, particularly when it comes to examining third-party security and the integrity of transactions.

Prioritization of Stakeholders: The IBC clearly outlines a hierarchy, ensuring that homebuyers and secured creditors are prioritized first.

Litigation Delays: The process continues to grapple with legal appeals and delays, which can hinder the sense of urgency.

Creditor Recovery Limited vs Ideal Targets: While creditors do receive their due amounts, the distressed value and lengthy litigation often diminish the overall recoverable value.

Shareholders Bear the Loss: Once debts are settled, the residual value left for equity holders is quite minimal.

CONCLUSION

The implementation of the Insolvency and Bankruptcy Code (IBC), 2016, is a positive initiative towards the restoration of order and time-sensitive, creditor-centric processes in India's insolvency system. It sought to improve the recovery rate of large cases although certain sectors still struggle with recovery results. It still faces significant challenges in highly complex cases, cases with a light asset base, cases with high resolution expenses, and the cases that exceed the IBC's 180 to 330 day timeline.

The impact of the IBC has been limited due to judicial hold ups, administrative boundaries at the NCLT level, and even corporate level interferences. The IBC has been made ineffective due to a lack of robust institutional oversight which is showcased in the Jaypee Infratech case while also lacking the adequate safeguard to defend the interests of multifaceted groups, like the homebuyers.

Recovery results, in large cases still inconsistent across sectors due to systemic challenges, have the IBC encountering an unprecedented gap in judicial capabilities, resolution timelines, and lacking precise legislation. Overall, it is a step in the right direction.

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AN IN-DEPTH STUDY ON INDIAN WOMEN ENTREPRENEURS AND GLOBAL INNOVATION STRATEGIES

¹Mrignayani Thanawala and ^{2*}Dr. Navita Kulkarni¹Research Scholar and ²Assistant Professor, Department of Media and Communications, Usha Pravin Gandhi College of Arts, Science and Commerce, Mumbai**ABSTRACT**

In the global economy, women entrepreneurs are becoming increasingly important for innovation and inclusive growth. The innovative tactics of women entrepreneurs in Sweden, Nigeria, the United States, and India are examined in this cross-national study. It investigates how they propel company expansion while overcoming cultural barriers, restricted capital availability, and gender bias using empirical data and case studies.

Patterns in leadership, digital adoption, and market expansion are shown using a mixed-methods approach that combines quantitative performance data with qualitative interviews. Themes like adaptation, digital transformation, and community focus are common despite regional variations. The report ends with policy recommendations for inclusive innovation ecosystems after highlighting important enablers like international collaborations, digital networks, and government funding.

Keywords: Women Entrepreneurs; Innovation Strategies; Cross-Country Study; Global Business; Gender and Entrepreneurship; Inclusive Innovation; Digital Transformation.

INTRODUCTION

Women's entrepreneurial leadership has increased dramatically in the twenty-first century, defying convention and propelling global economic change (Elam et al., 2019; Acs, Szerb, & Lloyd, 2018). Women continue to demonstrate resilience and innovate for inclusive growth despite sociocultural constraints, restricted access to capital, and systematic gender biases. Through community-based models, sustainable practices, and technology, globalization and digitalization have enabled women to lead enterprises across industries, especially in emerging nations (GEM, 2020; Brush et al., 2018).

To provide comparative insights into how women entrepreneurs in Nigeria, Sweden, India, and the United States navigate various ecosystems to attain business sustainability and socio-economic impact, this study examines their innovative techniques. The results are intended to educate stakeholders and policymakers in support of inclusive, innovation-driven economies.

LITERATURE REVIEW

Global Trends and Barriers: While women's entrepreneurial participation is rising globally, disparities persist due to socio-economic and institutional barriers (Brush et al., 2018; Minniti & Naudé, 2010). Supportive ecosystems are more prevalent in developed economies (Kelley et al., 2017), while patriarchal norms and weak institutions limit women in developing regions (Jamali, 2009; Brixiová et al., 2020). Common challenges include limited capital, constrained networks, and caregiving expectations (Amine & Staub, 2009; Roomi & Parrott, 2008; Welter et al., 2014).

Innovation Strategies in Women-Led Enterprises: Women entrepreneurs often innovate within creative, service, and social sectors, focusing on sustainability and collaboration rather than high-risk disruption (Marlow & McAdam, 2013; Foss et al., 2019; Brush et al., 2006; Gupta & Mirchandani, 2018; Hughes et al., 2012; Alsos et al., 2013).

Cultural and Cross-Country Influences: Cultural norms strongly affect entrepreneurial strategies, with Hofstede's framework explaining variations in leadership and risk-taking (Hofstede, 2001; Hayton et al., 2002). Studies highlight how outcomes differ across Nordic and South Asian contexts based on social capital and policy support (Sarfaraz et al., 2014; Shinnar et al., 2018).

Digital Transformation and Globalization: Digital tools have broadened global access for women entrepreneurs, especially post-pandemic, though gaps remain in low-income areas (OECD, 2021; UNCTAD, 2022; Dwivedi et al., 2021; Web Foundation, 2020).

Policy and Institutional Support: Governmental and institutional backing—including funding, training, and procurement—are critical for fostering women's innovation (Estrin & Mickiewicz, 2011; Terjesen & Lloyd, 2015). Initiatives like WEConnect and SheTrades illustrate successful interventions (ITC, 2020; OECD, 2021), though implementation gaps persist.

Social Innovation and Leadership: Women often lead through participative and ethical models that emphasize community impact and long-term value (Calás et al., 2009; Eagly & Carli, 2003; McKinsey & Company, 2020), offering a gendered innovation approach that blends economic and social goals (Zahra et al., 2009).

RESEARCH OBJECTIVES

1. To analyze the innovation strategies adopted by women entrepreneurs globally, with a focus on how digital transformation and global networks shape their strategic capacities.
2. To examine the socio-cultural, economic, and institutional factors influencing women-led innovation, and compare the challenges and enablers in both developed and developing economies.
3. To provide policy and practice-oriented recommendations for fostering inclusive and innovation-driven women entrepreneurship.

RESEARCH QUESTIONS

1. Despite increasing global recognition of women entrepreneurs, there is limited understanding of how digital transformation and international networks influence their innovation strategies across different regions.
2. Women entrepreneurs continue to face unequal access to resources, institutional support, and market opportunities, with significant variation between developed and developing economies—yet a comparative analysis remains underexplored.
3. There is a lack of evidence-based policy frameworks and practical models that address the unique challenges of women-led innovation and promote inclusive entrepreneurial ecosystems.

THEORETICAL FRAMEWORK

- **Institutional Theory:** Helps analyze how formal institutions (laws, policies) and informal norms (culture, gender roles) shape women's entrepreneurship and innovation strategies (Scott, 2001).
- **Gendered Entrepreneurship Framework:** Developed by Brush et al. (2009), it integrates gender as a central analytical lens in entrepreneurial research, emphasizing how women's experiences are shaped by unique structural challenges.

RESEARCH METHODOLOGY

To investigate the innovative tactics of Indian women entrepreneurs, this study uses a qualitative case study methodology (Yin, 2018). Based on their leadership positions, creative contributions, and quantifiable impact, ten entrepreneurs were chosen from a variety of industries, including technology, agriculture, fashion, wellness, and social entrepreneurship. Information was gathered from publicly accessible sources, including government databases like Startup India and DPIIT, press releases, company websites, media profiles, and published presentations. Cross-case thematic analysis (Miles et al., 2014) was used for the analysis, which allowed for the discovery of recurrent trends in innovation types, strategic approaches, and ecosystem influences. Important aspects like the nature of innovation, strategic choices, gender-specific difficulties, enabling variables, and effect indicators were the focus of the study.

CASE STUDY

Ten Indian women entrepreneurs who have spearheaded innovation in a variety of industries are the subject of this study. Kiran Mazumdar-Shaw (Biocon) promoted cost-effective healthcare by using in-house R&D and reasonably priced biosimilars.

With tech-driven customisation, Falguni Nayar (Nykaa) transformed the cosmetics retail industry and achieved a multibillion-dollar valuation after going public. Via a FemTech platform that Reliance later purchased, Richa Kar (Zivame) made lingerie purchasing more commonplace. In collaboration with UNICEF, Aditi Gupta (Menstrupedia) used digital media and culturally relevant content to overcome menstrual taboos. Radhika Ghai (ShopClues) used localized e-commerce to serve tier-2 and tier-3 areas. With credit scoring and mobile-first solutions, Upasana Taku (MobiKwik) introduced fintech innovation to small-town India. Using scalable AI tools, Neeti Mehta (Automation Anywhere) spearheaded global RPA innovation. In Indian cities, Meena Ganesh of Portea Medical established a network of tech-enabled home healthcare facilities. Vandana Luthra (VLCC) used vocational training and franchising to institutionalize wellness. After going public, Ghazal Alagh's (Mamaearth) sustainable, toxin-free personal care company became a unicorn.

ANALYTICAL WORK

Diverse approaches influenced by societal settings and sectoral demands are reflected in the innovation strategies of these women-led businesses. While Nykaa and Mamaearth made use of digital platforms,

personalization, and influencer marketing, Biocon concentrated on cost-effective, R&D-driven healthcare innovation. Menstrupedia used innovative edutainment to tackle social taboos, and Portea Medical used hybrid service delivery to close healthcare gaps. While Zivame and Portea scaled domestically via niche techniques, Biocon and Nykaa sought international alliances. While Biocon depended on international research collaborations, Nykaa and Mamaearth prospered on network effects and internet branding. The business approaches included bootstrapped acquisitions (Zivame, Portea), venture-funded unicorns (Nykaa, Mamaearth), and R&D-led expansion (Biocon).

Together, these businesspeople upended industries that were dominated by men and incorporated social impact and sustainability into their main tactics.

FINDINGS

The case studies show that innovation played a key role in a variety of industries, including FMCG (Mamaearth), e-commerce (Nykaa, Zivame), biotech (Biocon), healthcare (Portea), and ed-tech (Menstrupedia). Nykaa and Mamaearth spearheaded product and brand innovation with an emphasis on sustainability and personalization, while Biocon and Portea prioritized R&D and tech-driven healthcare. Through consumer-centric solutions, each business filled market gaps: Menstrupedia provided culturally relevant menstrual education, Nykaa and Mamaearth established trust through influencer platforms, and Zivame addressed lingerie taboos. Digital tools were essential because they made it possible to use online content and omnichannel tactics for outreach, branding, and feedback. Different strategies were employed for scaling: Nykaa and Mamaearth chose IPOs and venture capital investment, Zivame and Portea sought acquisitions, and VLCC used franchising. Every entrepreneur exhibited gendered leadership by fusing social impact with business success, whether it was through Menstrupedia's stigma-breaking education, Mamaearth's eco-conscious goal, or Biocon's reasonably priced healthcare.

CONCLUSION

This report emphasizes how important it is for Indian women entrepreneurs to leverage tech-enabled, consumer-focused, and purpose-driven tactics to propel innovation. While creating scalable, socially significant businesses based on empathy and personal experience, these women are shattering stereotypes in fields that are dominated by males. Despite resource limitations, they compete globally by utilizing digital tools and social capital. Their experiences show how innovation can help close the gap between gender equity and economic empowerment. Stronger institutional support, including funding, mentorship, and policy, is necessary for long-term improvement, though, to guarantee that women-led innovation becomes a key component of inclusive development.

RECOMMENDATIONS

Establishing women-centric incubators that tackle gender-specific obstacles like financial disparities, mentorship, and network access is necessary to support women-led innovation. Platforms for cross-border collaboration can offer chances for intellectual property exchange, market integration, and worldwide exposure. Gender criteria should be incorporated into startup funding channels, and venture capital firms should be incentivized to assist funds that are focused on women through government subsidies or tax breaks. Programs for digital and financial literacy are crucial for facilitating scalable innovation, especially for women in rural and semi-urban areas. Gender-inclusive curricula and case studies that showcase a range of leadership styles should also be incorporated into entrepreneurial education.

POLICY IMPLICATIONS

Reforms in public procurement should prioritize women-owned MSMEs to improve market access. A National Gender Innovation Index can track women's contributions through indicators such as patents, digital adoption, exports, and employment. Trade agreements should include provisions that offer women entrepreneurs access to global coworking spaces, R&D funding, and accelerator programs. Simplifying regulatory compliance through single-window systems for GST, FDI, and labor laws will reduce bureaucratic hurdles for women founders.

LIMITATIONS

Although this study provides detail, its geographic focus on Indian women entrepreneurs limits its wider applicability. Because many companies are private, certain financial and strategic data may be dependent on secondary sources that aren't up to date or comprehensive. Furthermore, there is a bias toward industry specialization, with the majority of examples concentrating on the consumer, wellness, and technology sectors and the underrepresentation of capital-intensive and STEM-heavy industries like manufacturing and energy.

SCOPE FOR FUTURE RESEARCH

Future studies can examine women's innovation methods in both established and emerging economies using a cross-country comparative approach. Research could also evaluate how policy initiatives like Startup India or Mudra Yojana affect innovation and exports over the long run. Additionally, to investigate how caste, class, and regional differences impact entrepreneurial access—particularly in India's tier-2/3 cities and tribal areas—intersectional study is required.

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BUSINESS STRATEGY IN A DIVIDED WORLD: ANALYSING THE IMPACT OF GEOPOLITICAL DISRUPTIONS THROUGH CASE STUDIES

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ABSTRACT

In this world ruled by geopolitics many corporates have had to reconsider their course of strategy and explore new solutions. This paper delves into the depths of strategies that are a result of geopolitical upheaval, political alliance changes, unexpected regulatory challenges. All these are studied and verified by understanding the patterns of cases studies of multinational corporates that have faced geopolitical issues. It uncovers patterns, management strategies, foresight of geopolitics and uncertainties that corporates face. Ultimately this paper suggests a framework for corporates to foresee geopolitical consequences and navigate through divided world.

Keywords: Business Strategy, Geopolitics, Global Strategy, External Factors

INTRODUCTION

In the global business landscape, the term divided world has emerged in spite of free will of trade. This is mostly due the geopolitics affecting corporates. Geopolitics has divided the corporation geographically due to the political conflicts going on currently which hinders the corporates workflow. This division is mainly formed due to multipolar power dynamics, regional conflicts, economic protectionism, and intensifying trade wars. Unlike the post- Cold war era of globalisation, the contemporary international orders are disoriented and have vague political and economic agendas. This is a road block to the idea of global integration.

Within this landscape the geopolitical disruption refers to the escalating events rooted in interstate tensions, personal agendas, diplomatic breakdowns that significantly impact the trade, supply chain, markets, and eventually the reputation of a business. Unlike the political instability which is focused on local or domestic issues of a country or economic instability which is often concerned with the financial status, geopolitical are uniquely cross-border, strategic and often long-term in their implication. They may manifest wars, sanctions, trade restrictions, military blockades, or diplomatic standoffs, each of which pose a risk to the multinational operations.

For modern corporations especially those having global supply chain, international customer base and cross-border investments have to consider geopolitics as an integral part of decision making. It influences decisions of market entry or exit, sustaining the markets, expansion strategy, supply chain and customers perspective, compliance, regulations, risk assessment. The COVID-19 pandemic then the Russia- Ukraine War and now US-China trade war are all indications for corporates to consider geopolitics in their plans and accordingly build strategies not get caught in the crossfire.

This paper aims to explore the true effects of geopolitical effects on the corporates' strategies through analysing case studies of well known multinationals and their strategic shifts. This study uncovers patterns of strategic adaption in response to geopolitical shocks. By analysing the strategy implemented by the corporates and its effects on various economies finally a framework is suggested following which the corporates can assess the true damage of geopolitics and initially assess the impacts and what steps they can take to avoid future hazards.

REVIEW OF LITERATURE

Political Risk Theory offers a core framework for understanding how firms navigate uncertainty in volatile regions. Kobrin (1979) defines political risk as disruptions stemming from government actions or instability, while Bremmer (2012) expands this to include non-state actors and transnational threats.

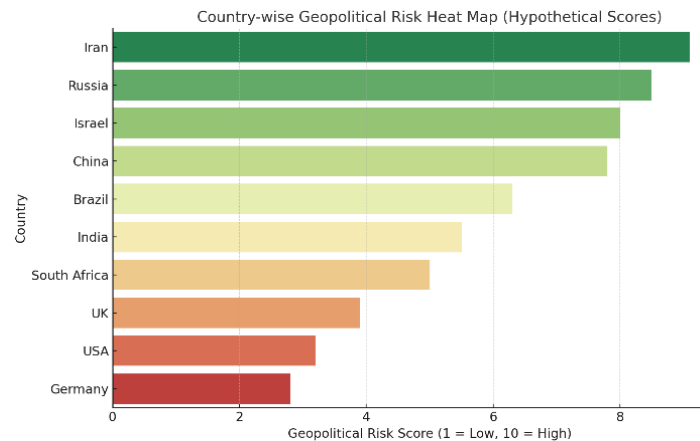
Global Value Chain Fragility has gained prominence post-COVID-19 and amid the Ukraine conflict. Gereffi (2018) highlights the sensitivity of global networks to geopolitical shocks, and Miroudot (2020) notes a shift toward reconfiguring supply chains to reduce reliance on unstable regions.

Stakeholder Theory in Global Markets stresses the need to manage diverse expectations—from shareholders to governments. Donaldson & Preston (1995) laid its foundation, and Doh et al. (2016) stress the importance of strategic neutrality to safeguard reputation in tense geopolitical contexts.

Sanctions and Compliance are increasingly critical. While Kaempfer & Lowenberg (1992) questioned sanction effectiveness,

Biersteker et al. (2016) show how firms now proactively develop legal frameworks and compliance teams to navigate evolving restrictions.

Strategic Hedging and Diversification help firms reduce geopolitical exposure. Ghemawat (2007) introduced the CAGE framework, guiding firms in adapting strategies across global differences. Ramamurti (2020) emphasizes dual supply chains and regional diversification as key hedging tools. Geoeconomics and Decoupling reshape global business thinking. Farrell & Newman (2019) coined “weaponized interdependence,” where control over global systems becomes a geopolitical tool, pushing firms to treat global markets as strategic battlegrounds rather than mere trade zones.



OBJECTIVES

1. To examine the impact of recent geopolitical disruptions on multinational corporate strategy and operations.
2. To analyze real-world case studies of companies affected by major geopolitical conflicts and trade barriers.
3. To compare strategic responses adopted by businesses across different regions and industries.
4. To develop a framework for resilient business strategy in geopolitically fragmented global markets.

RESEARCH METHODOLOGY

This research is conducted using a qualitative approach based entirely on a comparative case study method which examines how multinational corporations respond to geopolitical disruptions such as trade wars, sanctions, military conflicts, and regulatory shifts.

The study draws insights from multiple industries and regions, focusing on companies that have publicly documented their strategic responses to geopolitical challenges. The selection of cases is based on the availability of credible and diverse secondary sources.

HYPOTHESIS

Hypotheses 1:

Null Hypothesis (H_0): Companies affected by geopolitical conflicts or trade sanctions do not significantly change their strategies (e.g., supply chain, market presence).

- Alternative Hypothesis (H_1): Companies affected by geopolitical conflicts or trade sanctions significantly adapt their strategies (e.g., supply chain, market presence).

Hypotheses 2:

- Null Hypothesis (H_0): Companies with proactive geopolitical risk management frameworks do not exhibit greater resilience in geopolitically fragmented markets.
- Alternative Hypothesis (H_1): Companies with proactive geopolitical risk management frameworks exhibit greater resilience in geopolitically fragmented markets.

LIMITATIONS

1. Relies solely on secondary data; lacks access to internal company insights.
2. Case studies focus on large Western MNCs, limiting generalizability.
3. Excludes certain industries and regions
4. Risk of researcher interpretation bias due to subjective thematic analysis of case data.

CASE STUDIES

Case 1: Apple and the US–China Trade War

Background: Apple Inc. ,a US based company was heavily dependent on China for both manufacturing and sales, faced huge disruption during the 2018 due to U.S.– China trade war.

Geopolitical Context: This trade war disrupted the supply chain manufacturing increasing tariffs on electronics and high labour cost in China and eventually loosing a huge customer base in China. This led Apple to explore new markets and exposed to high cost manufacturing.

Strategic Response:

Supply Chain Diversification: Apple began relocating portions of its production: *India:* Partnered with Foxconn, Wistron, and Pegatron to scale local iPhone manufacturing. *Vietnam:* Increased production of AirPods and other peripheral devices.

By 2023, India accounted for over 7% of iPhone production—up from under 1% in 2019 (Bloomberg, 2023).

Procurement & Risk Management: Apple started multi-sourcing and invested in emerging markets like Southeast Asian infrastructure to mitigate bottlenecks and strengthen supply chain.

Geopolitical Hedging: Apple strategically maintained its operations in China and started aligning with India’s Make in India initiative and Vietnam’s investor friendly policies were perfect to enter the market, this helped not only to diversify but also hedge the risk of political exposure.

GRAPHICAL INSIGHT

Apple’s iPhone Production Share by Country (2018–2023)

Year	China	India	Vietnam
	(%)	(%)	(%)
2018	95%	<1%	~0%
2020	88%	2%	1%
2023	80%	7%	3%

ECONOMIC EFFECTS

India: This impacted positively as India gained Foreign Direct Investments, employment levels went up, and it emerged as a credible electronics manufacturing hub due to schemes like Production Linked Incentives (PLI).

Vietnam: Gained traction as a secondary supply chain hub with increased integration into Apple’s value chain.

China: As China was still the leader but it faced potential future threats and higher exposure to geopolitical risks and overdependence on foreign tech companies.

Strategic Implications: Apple integrated the “China+1” strategy, a model which was increasingly adopted by global firms who sought balance between resilience and cost- efficiency. Rather than exiting China, Apple’s smart diversification allowed continuity with risk mitigation.

Conclusion: Apple’s response to geopolitical tensions showcases how global firms can leverage supply chain agility, regional partnerships, and diplomatic neutrality to secure operations. This case shows the importance of strategic diversification in navigating global uncertainty.

CASE 2: JAGUAR LAND ROVER AND BREXIT

Background: Jaguar Land Rover (JLR), a subsidiary of Tata Motors and the UK’s largest automotive manufacturer, was heavily invested into European supply chains. It’s major operations in the UK and sales across the EU, the Brexit referendum in 2016 introduced a dynamic turn in the operational flow and strategic resilience.

Geopolitical Context: Brexit posed risks of tariff barriers, regulatory divergence, and border delays—particularly impacting just- in-time automotive supply chains. The EU accounted for a large share of JLR’s exports, while components for its UK factories flowed freely from Europe pre-Brexit. The potential for a “no-deal” scenario further heightened uncertainty over trade, labour mobility, and compliance standards.

Strategic Response

Supply Chain Realignment: JLR strategically increases its production in order to buffer against customs delays. It also diversified its suppliers in the non-EU regions to mitigate overdependence.

Operational Restructuring: JLR temporarily shut its UK plants in early 2019 to prepare for expected border disruptions. Instead it invested in manufacturing facilities outside the UK (e.g., Slovakia) to ensure tariff-free access to the EU post-Brexit.

Policy Advocacy & Planning: It actively engaged with UK policymakers and auto industry groups to advocate for favourable trade terms. Developed plans for multiple unforeseen Brexit scenarios

Graphical Insight

Figure 2: JLR's Investment and Plant Distribution Shift (2016–2021)

Year	UK Production (Units)	Production (Units)	Inventory Holdings (£M)
2016	544,000	0	200
2019	385,000	50,000	600
2021	300,000	10,000	750

Source: JLR Annual Reports, Financial Times, ACEA

ECONOMIC EFFECTS

UK: In the short-run it did face disruptions and job uncertainties but in the long run all of it faded and automotive investments were reduced because of the Brexit friction.

EU (Slovakia): This diversification proved fruitful as Slovakia benefited from the new plant at Nitra and created jobs and boost the automotive exports

India (Tata Motors): The earnings very severely impacted due to uncertain UK-EU trade dynamics.

STRATEGIC IMPLICATIONS

JLR exemplified a "multi-location hedging" model—investing abroad while lobbying for clarity at home. This strategy preserved market access and stabilized production amid rising geopolitical complexity.

Conclusion

Brexit affected the fragility of deeply integrated supply chains under political disruption. JLR's phased restructuring, risk planning, and geographic hedging reflect how multinational firms can adapt to preserve competitiveness in uncertain regulatory landscapes.

CASE 3: STARBUCKS' EXIT FROM RUSSIA AMID THE RUSSIA-UKRAINE WAR

Background

Starbucks a global coffeehouse having its headquarters at US entered the Russian market in 2007. By early 2022, the company had expanded to 130 stores across Russia, operating by a licensed partner. However the Russia's invasion in Ukraine in February in 2022, made Starbucks rethink its operation decision. Leading to revoking from Russia by May 2022.

Strategic Geopolitical Disruption

The Russia-Ukraine War triggered a wave of corporate exits from Russia, particularly among Western consumer-facing brands. The invasion led to:

Global condemnation of Russia's actions.

Sanctions by the U.S. and its allies.

Rising reputational risk for companies continuing to operate in the region.

Starbucks' Strategic Response:

Ethical Alignment over Short-Term Profits

Starbucks choice of ethics over profits bought it high appeal in the Western market and promises of ESG, and expansion in the west. This not only was ethical but indirectly economically beneficial.

Exit Highlights:

Starbucks ceased all operations and terminated brand use in Russia.

Continued to support employees financially for six months post-exit.
Avoided potential brand damage in other global markets.

GRAPHICAL INSIGHT

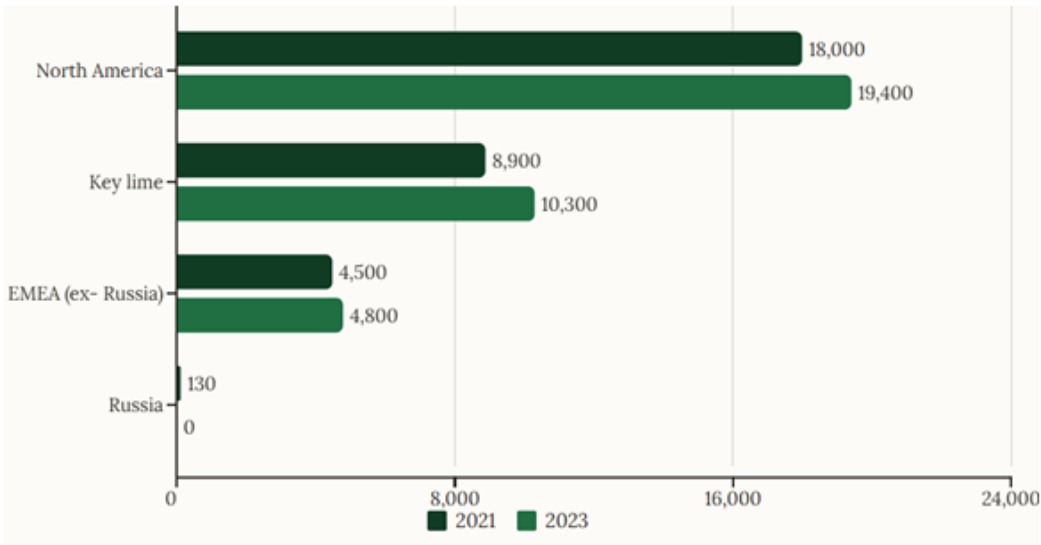


Figure 1: Starbucks Store Count by Region (2021–2023)
(Post-Russia exit, with redirection to Asia-Pacific markets)

IMPACT ANALYSIS ON STARBUCKS

Starbuck faced a relatively minor loss of less that 1% in turn it boosted its brand equity in the western market due to ethical consistency. This also led to operational flexibility by exploring new regions like APAC and Middle East.

On Russia:

For Russia the loss was symbolic as a global brand due to de-westernization of urban consumer landscape. Local brand Stars Coffee replaced Starbucks in 2022, using similar branding.

On Global Markets:

This move reinforced “ethical exits” during geopolitical conflicts if a nation doesn’t align with u retics or goals. This contributed to deglobalization specially for consumer lifestyle brands.



Strategic Themes: Starbucks’ strategic response to the Russia-Ukraine conflict highlights key themes in modern corporate geopolitics. From an ESG integration lens, the company prioritized ethics over market share by exiting the Russian market, reinforcing its commitment to human rights and corporate responsibility. This move significantly enhanced stakeholder trust and brand credibility across global markets. In terms of geopolitical risk management, Starbucks acted swiftly to mitigate operational and reputational exposure, positioning itself as a proactive and values- driven enterprise. Finally, through brand diplomacy, the company aligned its actions with public sentiment in its home country and allied nations, which in turn strengthened customer loyalty and preserved long-term brand equity.

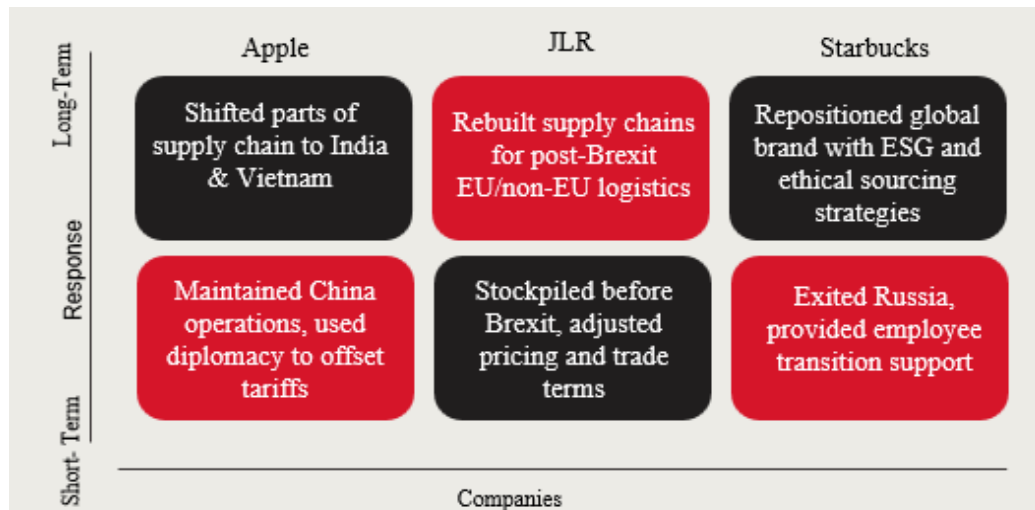


Fig 1: Strategic Response Matrix – A Comparison of Short- and Long-Term Actions by Apple, JLR, and Starbucks in Response to Geopolitical Risks.

CASE STUDY ANALYSIS

1. Industry Matters:

- Apple which operates in a high-tech, globally integrated industry had to first focus on de-risking its production through manufacturing diversification in different regions and markets which was time consuming and infrastructure intensive solution.
- Jaguar Land Rover, in a capital and trade sensitive industry implemented operational adjustments through navigating evolving tariff and regulatory regions.
- Starbucks, a consumer-facing lifestyle brand, responded to an ethical and reputational crisis by withdrawing entirely from the affected geography, leveraging CSR to preserve brand equity. Also prioritizing ethics over profits gaining mass appeal.

2. Regional Sensitivities Shaped Strategies:

- Apple's strategy was shaped by superpower rivalry and required diplomatic and operational agility without antagonizing either side.
- JLR's dual exposure to Brexit and Russia required multi-layered logistical recalibration to maintain access to both EU and non-EU markets.
- Starbucks' withdrawal from Russia was influenced by Western public pressure and symbolic corporate solidarity with Ukraine.

3. Resilience vs. Cost Efficiency:

- Apple and JLR were focused on profits and swiftly took action to balance resilience and efficiency while maintain market share in the long run
- Starbucks, prioritized values over profit, absorbing short-term losses for long-term ethical alignment.

4. Workforce and Stakeholder Engagement:

- All three companies considered employee welfare—Apple via training and rehiring; JLR via EU workforce management; Starbucks via financial support to ex- employees—demonstrating that human capital strategy is a vital part of geopolitical response.

FRAMEWORK FOR CORPORATES

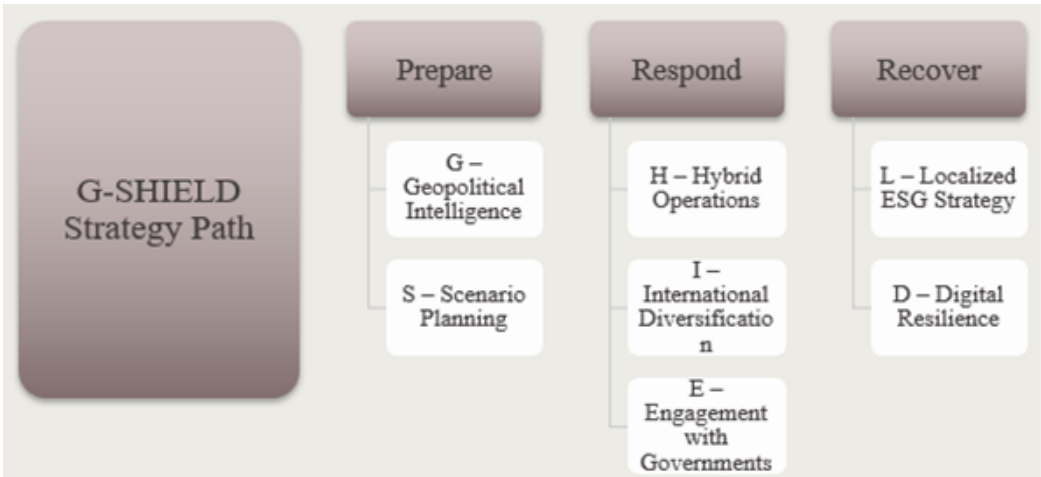
4-Pillar Model for Strategic Resilience



G-SHIELD: A Corporate Framework to Navigate Geopolitical Disruptions

The world is being shaped by geopolitical instability, businesses need a comprehensive and proactive approach. The G-SHIELD framework offers seven interlinked pillars that empower organizations to foresee, interpret, and adapt to geopolitical shocks.

Below is a detailed explanation of each strategic pillar.



G – Geopolitical Intelligence System

Companies must establish a geopolitical intelligence system this can be done by setting up an internal Geopolitical Risk Unit or collaborating with specialized agencies. The primary work of this unit will be to assess and monitor geopolitical developments in ways like sanctions, new regulations, trade relations and barriers, elections, and regional conflicts. Critical data can be sourced from international institutions like the World Bank, UN, IMF, WTO, and defence think tanks. For instance, Apple nurtured close ties with trade analysts and policy advisors during the US-China tariff standoff, which enabled it to adapt quickly and avoid reactive strategies.

S – Scenario-Based Strategic Planning

Firms should implement scenario-based planning by listing and analysing multiple crisis that could take place due to one change and according make plans- base, optimistic, and worst-case and link it with customized responses.

These include supply chain management, pricing, inventory levels. Annual war- gaming exercises with senior leadership can sharpen reflexes and readiness. Real Options Analysis (ROA) is an effective tool for quantifying flexible decision paths under uncertainty. Jaguar Land Rover (JLR), for example, used such scenario modelling to navigate Brexit, preparing contingency plans for both a deal and no-deal outcome, allowing seamless transitions.

H – Hybrid Operations Model (HQ–Local Split)

A hybrid operations model is suggested to ensure companies avoid complete shutdown and can help separate core intellectual functions such as R&D to the headquarters from localized sales, services, and logistics functions, firms reduce exposure while maintaining local relevance. Product customization and regulatory compliance must be locally managed to preserve stakeholder trust. Starbucks exemplified this by sustaining its global values yet fostering strong local partnerships, ensuring resilience and adaptability in diverse markets.

I – International Diversification Matrix

In order to mitigate geopolitical risk, companies must diversify their operations across manufacturing, suppliers, distribution, and revenue streams, especially avoiding overreliance on politically unstable areas. This “International Diversification Matrix” must consider both neutral and stable geographies across all critical functions—supply chain, human capital, and market access. Apple’s shift of iPhone manufacturing to India and Vietnam is a prime case of reducing dependence on China while sustaining global output levels.

E – Engagement with Governments & Institutions

There should be continuous engagement with government and regulatory bodies, chambers of commerce, and international organizations. This incorporates corporate diplomacy and non-market strategies such as lobbying and coalition-building. Company should train its managers in institutional relationships during crises. JLR effectively navigated the Brexit turbulence by coordinating with UK and EU officials, while also investing in public communications to shape sentiment and retain brand integrity.

L – Localized ESG Strategy

A localized ESG strategy helps firms to align with the right region in line with their ethics. Whether it’s gender equity in the Middle East or sustainability in the EU ESG initiatives help to ensure compliance and credibility. Starbucks’ decision to exit Russia in light of its global ESG commitments demonstrated alignment with both values and consumer sentiment, bolstering its brand.

D – Digital Resilience and Redundancy

In this digitally advanced era where all the work is happens on the cloud and is susceptible to infringement or hacking businesses must build digital infrastructure that is resilient and geopolitically redundant. This includes preparing for cyber-attacks by political tensions, adhering to the jurisdictions, maintaining backups ethically. During the Russia-Ukraine conflict, many tech firms swiftly relocated servers out of conflict zones and upgraded encryption, ensuring operational continuity.

HYPOTHESIS TESTING 1: STRATEGIC ADAPTATION AND GEOPOLITICAL DISRUPTION

H₀ (Null): Geopolitical conflicts and trade sanctions do not significantly affect corporate strategy.

H₁ (Alternative): Geopolitical conflicts and trade sanctions significantly influence strategic adaptation.

Using qualitative analysis of three case studies—Apple (US–China trade war), Jaguar Land Rover (Brexit), and Starbucks (Russia-Ukraine conflict)—the research examined changes in supply chains, market presence, and risk management.

Across all cases, a strong pattern emerged linking geopolitical disruption with visible, high-level strategic response: Apple diversified production away from China to India and Vietnam in response to tariff escalation. Jaguar Land Rover restructured its EU operations and adjusted inventory strategies during Brexit uncertainty. Starbucks exited the Russian market, prioritizing ethical alignment and brand equity over market share.

This confirms that geopolitical disruptions significantly influence how companies reconfigure their operations, market strategies, and stakeholder engagement. While the scale and nature of response vary, companies facing geopolitical pressure do not remain passive; they actively restructure in response to changing global realities.

HYPOTHESIS TESTING 2: RISK MANAGEMENT AND RESILIENCE

H₀ (Null): Companies with proactive geopolitical risk management frameworks do not exhibit greater resilience in geopolitically fragmented markets.

H₁ (Alternative): Companies with proactive geopolitical risk management frameworks exhibit greater resilience in geopolitically fragmented markets.

A comparative case study approach was used to assess the role of structured risk management in company resilience. Apple, Jaguar Land Rover, and Starbucks were analyzed for strategic foresight, scenario planning, supply chain flexibility, and stakeholder communication.

Across all cases, a strong pattern emerged linking structured geopolitical risk management with improved business resilience: Apple diversified production from China to India and Vietnam as a buffer against trade war volatility and tariffs. Jaguar Land Rover adopted scenario planning and restructured EU operations to navigate Brexit-related uncertainties. Starbucks exited the Russian market proactively, aligning with ethical values while preserving global brand loyalty.

This consistent strategic foresight and responsiveness across sectors highlight a significant causal relationship between risk management frameworks and organizational resilience.

SCOPE FOR FUTURE

1. Explore other industries like pharma, energy, or finance for sector-specific geopolitical strategies.
2. Study regional differences, especially in emerging markets.
3. Conduct long-term studies to assess strategy effectiveness over time.
4. Investigate the role of corporate diplomacy and lobbying in conflict-prone zones.

CONCLUSION

Geopolitical uncertainty is no longer a distant risk—it is a central force shaping business strategy. The case studies of Apple, Jaguar Land Rover, and Starbucks illustrate how global companies are being compelled to rethink operations, ethics, and resilience in response to shifting political landscapes.

The proposed G-SHIELD framework offers a strategic roadmap for navigating this complexity, emphasizing proactive intelligence, diversification, stakeholder engagement, and adaptability. Key lessons include the value of scenario planning, region-specific strategies, and the integration of ESG and corporate diplomacy into core decision-making.

As the global order becomes increasingly fragmented, businesses that embed geopolitical awareness into their strategy will be best positioned to thrive—not just survive—in the divided world ahead.

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ENHANCING ACCESS TO FIXED-INCOME SECURITIES: THE IMPACT OF ONLINE BOND PLATFORMS ON RETAIL INVESTORS

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ABSTRACT

The Indian bond market is paving its way into the capital markets by enhancing retail participation. Newer innovations and technology are being introduced to make that possible. One of them is Online Bond Platform Providers (OBPPs). This research examines the role of OBPPs in increasing awareness and accessibility for retail investors in India. These platforms provide authentic information about the listed bonds as well as a SEBI registered page to invest through. The findings indicate that due to regulations and simplified interfaces, the bond market has seen a rise in the retail participation. The OBPPs are playing a crucial role in gaining more investment in the fixed-income market and helping investors diversify their portfolio.

Key Words: Bond market, OBPPs, retail investors.

INTRODUCTION

The bond market in India began during the British rule, when it needed support for railway construction. Traditionally it has been dominated by the institutional investors like banks, insurance companies and mutual funds. It was difficult for retail investors to invest in bonds due to limited accessibility, high ticket sizes and no proper infrastructure. However, due to recent regulatory changes and technological advancements, retail investors can invest in bonds and diversify their portfolio. One such advancement is of Online Bond Platform Providers (OBPPs).

ONLINE BOND PLATFORM PROVIDERS

According to SEBI Regulation 51A, an Online Bond Platform is any electronic system, other than a recognised stock exchange or an electronic book provider platform, on which debt securities that are listed or proposed to be listed are offered and transacted.¹ An OBPP is a person or entity operating or providing an Online Bond Platform. They act as intermediaries between bond issuers and retail investors. OBPPs use technology to simplify the bond investment process, making it efficient for non-institutional participants. Through these platforms, investors can now invest in government securities (G-sec), corporate bonds, PSU bonds, tax-free bonds, non-convertible debentures and fixed deposits. This online ecosystem helps in seamless transactions and provide comprehensive information about variety of bonds. Investors can browse through different bonds, compare them, review their credit ratings, maturities, risk-return profile before taking any investment decisions.

History of OBPPs:

OBPPs started gaining momentum in the past decade in India due to the rise of fintech. It started gaining regulatory shape and visibility around 2020-22. The formal regulatory framework was laid down by SEBI in Nov 2022. Thereafter, SEBI implemented various measures for improving market transparency and strengthening OBPP governance. It also reduced the minimum investment amounts from Rs.10 lakhs to Rs.1000 to make it more accessible. All of this helped retail investors enter the bond market without much hassle. OBPPs have provided accessibility, transparency, convenience and cost efficiency.

Features of OBPPs:

1. Low minimum investment & low cost
2. Disclosure of information
3. Tools
4. AI based recommendations Execution of Trades:

All orders of the listed bond securities have to be routed through the Request for Quote (RFQ) platform of recognised stock exchanges and are settled through respective clearing corporations only.

REVIEW OF LITERATURE**1. Bond market for retail investors in India, 2025 (Shyamala Krishnamurthy, Vanathi Vembar)²**

This paper studies the Indian bond market in depth and what it offers to the retail investors. It focuses on the technicalities of bond investment which includes factors like interest rates, inflation and liquidity. The research is backed by statistical data that analyses historical performance and risk-adjusted returns of bond investments.

2. Regulating Online Bond Platforms: One Step Forward or Two Steps Back? 2023 (Sangita Sharma, Prachya J. Bhattacharya)³

This research article studies the regulatory framework provided by SEBI for online bond platforms. It examines the regulatory circular provided for the same. The paper focuses on the irregularities in the initial regulatory framework and recommends SEBI to revisit its policies and improve its structure pertaining to bond platforms.

3. Bridging the gap: Unlocking retail participation in India's bond market, 2025 (Sanskriti Gupta, Keertana Kujur, Ojas Arora)⁴

This paper studies the reasons for low retail participation in the fixed-income securities market. It proposes a model to enhance the participation through better regulations, investor education, tax benefits and other related aspects.

STATEMENT OF THE PROBLEM

This research studies the role of Online Bond Platform Providers (OBPPs) in the bond market and its impact on retail investors in India.

RESEARCH METHODOLOGY

This research is conducted using secondary sources. The information and data are collected from articles and reports published by the Securities and Exchange Board of India (SEBI), registered Online Bond Platform Providers (OBPPs), newspaper articles and other reliable online sources.

Limitation: Reliance on secondary source of data.

RESEARCH OBJECTIVES

1. To study the significance of OBPPs in the bond market.
2. To analyse the impact of OBPPs on retail investors in India.
3. To examine the growth and advancements in the Indian bond market.

ANALYSIS

The Indian capital market is growing at a swift pace. This research shows how the growth is backed not just by the equity market but a substantial contribution from the bond market. India's population provides a higher opportunity for retail participation in the markets. Back in the day, investment on the bond market was not very sought after by retail investors due to challenges and complexities it came with. One of the major hurdles faced was lack of awareness about the fixed income securities market and the instruments available for investment, high ticket size, lack of transparent pricing and lengthy process. With the advancements in technology and rise of platforms like Online Bond Platform Providers (OBPPs), these challenges could be overcome. OBPPs play a dual role by providing authentic information of different categories of listed bonds as well as a SEBI registered platform to invest on. The platforms also simplify access and enhance transparency. The minimum face value that investors can invest in is Rs. 1000 and Rs.100 for government bonds, which has given a major boost to the retail investors. The regulators have announced various reforms to increase the retail participation which led to awareness about different bond instruments and increase in the capacity to invest in the fixed-income market. The rise of OBPPs are fulfilling the need of retail investors for a stable income through fixed-income products in a volatile equity environment. Data reveals a steady rise in retail participation in listed debt securities. This suggests that OBPPs are helping to broaden the financial inclusion in the fixed-income market.

STATISTICAL ANALYSIS

- The size of the Indian bond market is a massive \$2.6 trillion USD with a CAGR of 25% over the past decade.⁵
- During the FY24, investment from retail investors on OBPPs rose 30-40% for the collective amount invested and 60-80% on individual platforms.⁶

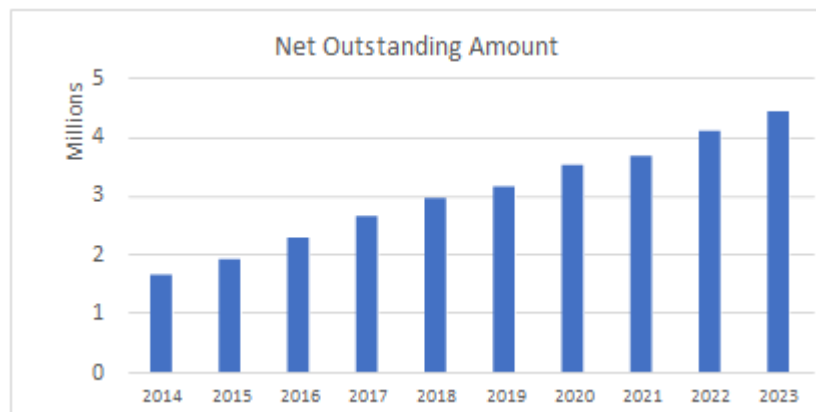


Fig 1: Net outstanding amount of bonds

- Net outstanding amount of government securities (G-secs) and corporate bonds is consistently growing at a stable rate.
- As per SEBI, corporate bonds outstanding in 2014 were Rs 16.49 lakh crore, which increased to Rs 44.16 lakh crore in 2023. Similarly, government borrowings through G-Secs, which stood at Rs 5.79 lakh crore in 2014, climbed to Rs 15.43 lakh crore in FY24 .⁷



Fig 2: Volume of retail investors

- The data provided indicates that retail participation is increasing in each financial year. It has seen a significant change in the FY22.
- The number of investors has grown from 901 in FY21 to 29,971 in FY23.⁸
- The total number of clients registered on OBPP platforms has increased from 3.5 lakh in FY24 to 5.6 lakh in FY25.⁹

CONCLUSION

With SEBI's regulations, the OBPPs have brought a boost in the Indian bond market. Retail investors with limited knowledge and resources have gained wider access to the bond market due to the online bond platforms. They have simplified the investment process and helped the investors create a diversified portfolio. The investors are understanding and gaining confidence with how the OBPPs work. In the course of time, due to more awareness, more investments are expected.

Platforms may introduce more structured fixed-income products to create diversity. Continued advancements in fintech will make bond investments more efficient and transparent. Hence, OBPPs are the future of the bond market.

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STUDY ON GEN Z ENTREPRENEURS IN INDIA: CREATING STARTUPS BEFORE GRADUATION

Vishakha Rajput and Siddhi Thakkar^{1,2}Third year BMS, SVKM's Usha Pravin Gandhi College of Arts, Science and Commerce¹vishakharajput0224@gmail.com and ²siddhithakkar0810@gmail.com**ABSTRACT**

India has witnessed the trend of startup culture among students in the recent past, but particularly among the Generation Zers born between the period of January 1, 1997, and December 31, 2012. With enhanced exposure to technology, the virtual world, and venture creation, people are setting up businesses even before graduation. This research explores the reasons, issues, and culture of the Gen Z entrepreneurs who begin working on their startups before graduation. The research attempts to understand the reasons for the same and whether the current institutional and policy changes are prepared to serve this young and ambitious generation.

Keywords: Gen Z, Entrepreneurship, College Startups, Student Founders, Startup Ecosystem, India, Business Motivation

INTRODUCTION

Entrepreneurship in India has been linked with experienced professionals or postgraduates in the past; however, over the past decade, a revolutionary change has been noticed. New generations of young entrepreneurs, i.e., those in the age group of Generation Z (1997–2012), are making their entry into the entrepreneurial space even while studying for undergraduate degrees. They are digitally native, socially aware, and innovation- and autonomy-focused. Entrepreneurship for them is not merely making bucks—it's about mission, passion, and impact creation.

Social media, e-learning platforms, and the ability to track global trends have brought down the previously restricting factors for entrepreneurship. Students are now able to initiate a digital business from the confines of a college dorm with little more than a laptop and an internet connection. From developing mobile applications to initiating handmade product startups on Instagram, these student businesses are gradually giving shape to the contours of India's startup ecosystem.

LITERATURE REVIEW

Over the past decade, there has been a keen interest among researchers and players in the industry to research youth entrepreneurship, especially in emerging economies like India. Various studies indicate that Gen Z, unlike previous generations, is more technology literate, risk-taking, and value-driven rather than money-driven (Agarwal, 2023; Kapoor, 2022). The availability of tech, social media, and virtual networks has greatly eased access of entry for young entrepreneurs (Seth, 2024).

Studies by institutions like NASSCOM and TiE Delhi-NCR also point out college incubators and entrepreneurship clubs as the major ones for nurturing startup ideas among students (NASSCOM & Zinnov, 2021; TiE Delhi-NCR, 2023). Further, policy initiatives like Startup India have significantly contributed in encouraging youth to build a startup venture at a young age (Ministry of Skill Development and Entrepreneurship, 2022).

But while these are positive trends, most young entrepreneurs are still facing the challenge of juggling school and business, restricted access to capital, and absence of mentorship (YourStory, 2023). Several qualitative studies appreciate the value for additional specialized support structures that cater to specific demand of Gen Z entrepreneurs while in school (Agarwal, 2023; Startup India, 2023).

This literature offers that as the ecosystem changes, the path of student entrepreneurs is multi-layered and complicated, encompassing not only business acumen but also and social integration. Drawing from these findings, this research aims to explore further the motivations, concerns, and support systems surrounding Gen Z entrepreneurs in India.

OBJECTIVES OF THE STUDY

1. To determine the primary reasons Gen Z students start businesses before graduation.
2. To investigate the difficulties student entrepreneurs, experience balancing business startup and academic life.
3. To determine the effect of government and institutional support on Gen Z entrepreneurship.

4. To explore whether the Indian startup environment is open and approachable to student entrepreneurs.

STATEMENT OF THE PROBLEM

Although India's Gen Z students are highly entrepreneurial in their interests, they have huge challenges in front of them, including juggling studies with entrepreneurship, scarce resources for financing and support, and social pressures. There is limited overall knowledge about these challenges and how far existing support systems are addressing their needs. This research seeks to investigate these gaps so that support can be built up for young student entrepreneurs.

SCOPE OF THE STUDY

The study highlighted Indian undergraduate students belonging to Generation Zers (born between 1997 and 2012) and involved in entrepreneurship or had attempted to be an entrepreneur before graduation. It focuses on different streams such as emerging business in technology, e-commerce businesses, service businesses, and creative industries. The study uses qualitative and quantitative survey data, interview data, and secondary data from start-up data collection and findings.

RESEARCH METHODOLOGY

Research design

Primary data collection supports the quantitative research design used in this study. A structured questionnaire with primarily multiple-choice questions and one open-ended question to capture individual viewpoints served as the primary tool. The purpose of the questionnaire was to evaluate the entrepreneurial goals, inclinations, and difficulties encountered by Gen Z students who intend to launch a business prior to graduation.

Target respondents

College students enrolled in second-, third-, and final-year undergraduate programs made up the target population. Although participants from science, the arts, and other disciplines were also included to maintain dataset diversity, the majority of respondents were from the commerce stream.

Method of Sampling

A non-probability sampling method—more precisely, a mix of convenience and random sampling—was used in the study. In addition to randomly disseminating the survey link among college communities, participants were chosen from the researchers' academic and personal networks.

Data Gathering Instrument

Google Forms was used to gather the primary data, enabling the survey to be disseminated digitally to different student groups.

Time Spent Gathering Data

The information was gathered in July and August of 2025. For the purposes of this study, a total of 77 valid responses were received and examined.

DATA INTERPRETATION AND ANALYSIS

The data was collected using the following questions:

1. What is your age group?

Through the data collected, it has been observed that the majority of people were of age 18-20. From 77 people, 49 belonged to the age group of 18-20 and 20 belonged to 20-22.

2. What is your academic background?

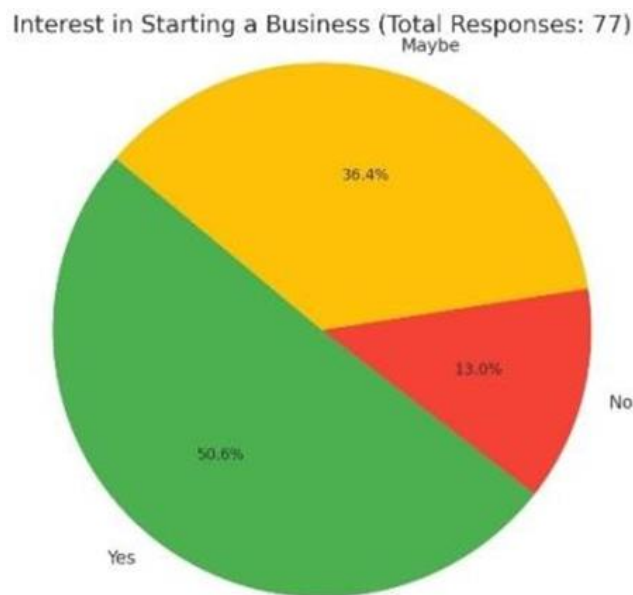
Science	13 (16.9%)
Arts	3 (3.9%)
Commerce	58 (75.3%)
Others	3 (3.9%)

It has been observed that majority were from management and commerce background which is been followed by science students. The data reveals the diversity from all the backgrounds.

3. Which year of college are you in?

1 st year	6 (7.7%)
2 nd year	4 (5.1%)
3 rd year	45 (57.7%)
Final year	23 (29.3%)

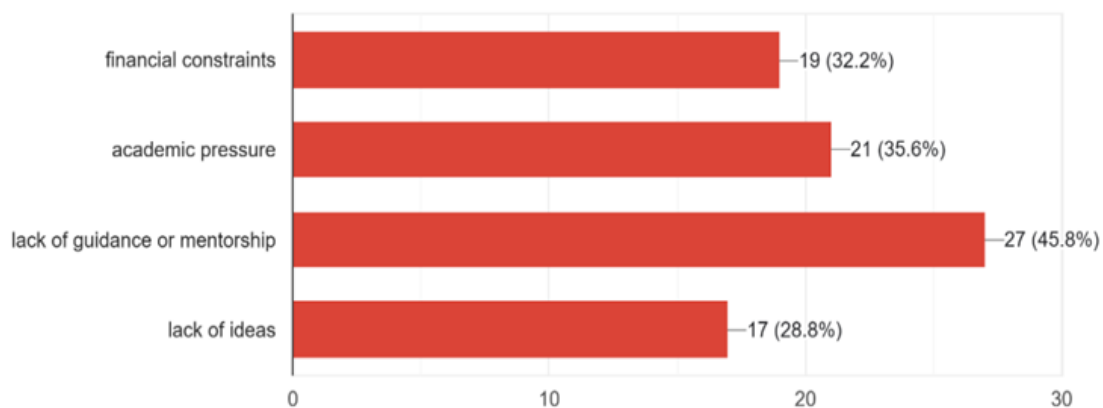
4. Are you interested in starting your own startup?



The data shows the genZ are more interested in starting their own business. 50.6% young are more into startups and 36.4% are still not sure. But from the data its clearly visible only 13% of the student's don't want to start their own business.

5. If yes when would you prefer to start your venture?

From this question we got to know that around 14% students are willing to start their startup even before completing their ug course. 18% of the student are ready to start their business while studying in pg program. This shows that todays youth want to start with their career as soon as possible. While many students still want to complete their graduation first and then start their own startups.

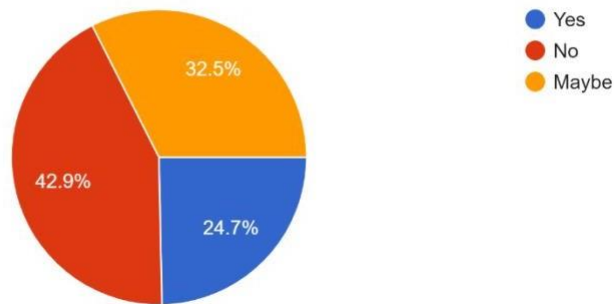


From the above data, it shows that around 45.8% of the students are facing the problem of guidance from mentors. The students want to start building their career but are facing the problem of mentorship from their college. And the data also reveal that many are not able to start their business because of academic pressure and financial constraints.

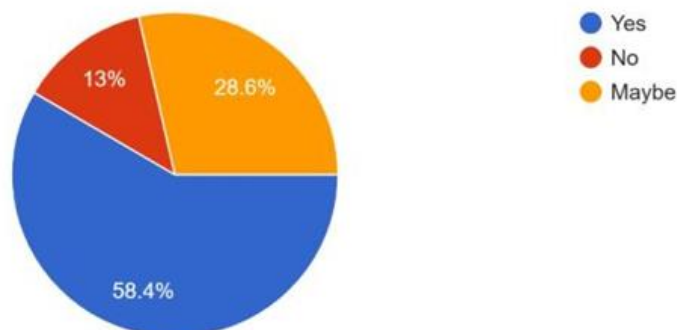
6. Do u have a startup idea but haven't taken action due to fear of failure?

The survey shows that many are still with no ideas even though they want to start their own business. The other side of the survey also says many have ideas ready with them, and have not taken action because they still fear of failure

Do u have a startup idea but haven't taken action due to fear of failure?
77 responses



Would you consider joining a startup instead of working at a corporate job?
77 responses

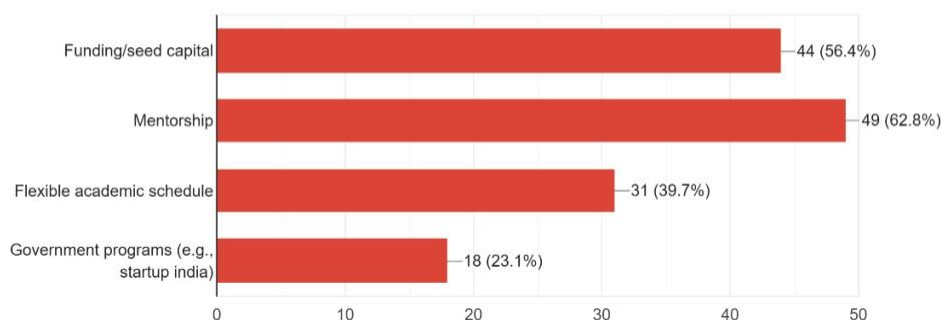


Today the genz are more interested in starting their won business are not in much fair of corporate world. This revels that the upcoming youth is much interesting in creating the jobs rather than doing the jobs. 58.4% of students are not interesting in working under someone else.

7. Do you believe that Gen Z is more entrepreneurial than previous generation? why or why not?

This was the open ended question in our survey to study what students think about entrepreneurship. Almost everyone thinks that todays youth is much more creative and are more into starting something new rather than following the old same cycle like the previous generations.

What kind of support would help you become a student entrepreneur?
78 responses



CONCLUSION

The entrepreneurial spirit of Generation Z college students in India is positive and encouraging. These technology natives do not hesitate to leverage technology and trends to disrupt business models. Their ride is not smooth, however. There is a very real need for greater institutional support, networks of mentors, and more adaptable academic frameworks. If India is to join the global startup culture, it must begin empowering its youngest entrepreneurs who stay in college. With adequate resources and guidance, Gen Z can be the force behind a new wave of sustainable and meaningful businesses.

RECOMMENDATIONS

In order to support student entrepreneurs, universities should improve their mentorship programs by connecting student founders with accomplished businesspeople who can guide them through challenges in the real world.

If credit-based projects or electives tailored to entrepreneurship are offered, student entrepreneurs could feel less pressured to perform well academically. Colleges could also increase the availability of grants and seed money for student-run enterprises. Teaching pupils the principles of business, money, and law is essential to laying a strong foundation. Universities should be encouraged to set up incubation facilities and host startup boot camps in order to provide practical assistance. If educational institutions and government programs like Startup India collaborate more successfully, students will have access to the full range of resources. Young entrepreneurs can use yearly student startup fairs as a platform to advertise their businesses and raise capital. Finally, in order to assist student entrepreneurs in managing stress, pressure, and the difficulties of juggling business and academics, mental health services are crucial.

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UPI - STEPPING STONE TOWARDS DIGITAL INDIA

Rushi Jatawadia and Shreya Ramani

ABSTRACT

The present research paper identifies how the Unified Payments Interface (UPI) has supported the expansion of India's digital economy, especially in the informal sector. UPI has made it easier for small enterprises and individuals to take part in digital payments since its inception, thus formalizing small transactions. The research also points out how UPI has enabled India's youth= who were earlier dependent on cash to a large extent= to make payments fast, secure, and convenient via smartphones. The paper further elaborates on how the ease of UPI, combined with the incentives like rewards, cashbacks, and discounts, has made people spend more digitally. It also speaks about how UPI has enhanced cash flow management and facilitated India's journey towards becoming more formal and transparent in economic activities. With surveys and analysis, the study illustrates the way UPI is revolutionizing the engagement between formal and informal markets and bringing the country closer to an exponential digital economy.

Keywords: Unified Payments Interface (UPI), digital economy, informal sector, small enterprises, micro-transactions, formalization, youth empowerment, cashless transactions, mobile payments, incentives, rewards, cashbacks, discounts, convenience, spending habits, cash flow management, economic formalization, transparency, analysis of surveys, market transformation, financial inclusion.

INTRODUCTION

Though most powerful nations are still dependent on cash payments, India is taking the lead in going digital through the Unified Payments Interface (UPI), created by the National Payments Corporation of India (NPCI). UPI is an India-made-for-Indians payment system, and it has seen tremendous growth since its launch. The Unified Payments Interface was launched in April 2016 as a quick and revolutionary digital payment mechanism.

It allows users to transfer money instantly from one bank account to another through their mobile phone. UPI became a huge hit during the 2016 demonetization campaign, when the government urged citizens to minimize the use of cash and move towards digital payments. Consequently, UPI covered the length and breadth of the nation, touching areas from Kashmir to Kanyakumari and including both small local shops and large corporations like Amazon and Flipkart. UPI works by connecting several bank accounts to a single mobile application. A person can send or receive money simply by using a Virtual Payment Address (VPA), a mobile number, or a QR code, without having to provide complete account information. The service is available 24/7, offers transactions between individuals and businesses, and offers a seamless, secure, and easy mode of carrying out transactions. This innovation has revolutionized payments across different sectors, making India the world leader in instant digital payments.

REVIEW OF LITERATURE

Singh and Pathak (2018) analyzed the revolutionary effect of electronic payment systems in India with specific reference to the Unified Payments Interface (UPI). Through their research, they bring out how UPI has facilitated small and medium enterprises and informal vendors to enter digital transactions, minimize the use of cash, and enhance bookkeeping. The authors point out that extensive usage of UPI has played a key role in bringing the informal economy into the digital mainstream.

Kumar et al. (2021) examined how UPI is empowering India's youth and fueling a cashless environment. According to their findings, easy access to UPI applications on mobile phones, instant money transfer, and low costs for transactions have prompted young people to abandon the use of cash. The study concluded that, in addition to altering payment behavior, UPI is also enhancing financial literacy and inclusion for younger populations.

Sharma and Chaudhary (2020) also studied consumer behavior and concluded that incentives by UPI platforms—prizes, cashback, and discounts—have a significant impact on the pattern of transactions. Their study concludes that not only do these incentives make people conduct more digital transactions but also lead consumers to try new traders and services. The results show that campaigns are an important driving force for the transition from cash to digital payments in the informal economy.

Reddy and Das (2019) studied the role of UPI in enabling greater regulation of cash flows across India's economy by enabling transparency in monetary transactions and facilitating real-time tracking. Based on their results, it is evident that UPI performs well in detecting transactions and is transparent.

OBJECTIVES

1. Explore how UPI has formalized micro-transactions between individuals and small businesses in the informal economy of India.
2. Evaluate how UPI helps regulate cash flow and promote transparency in economic transactions.
3. Understand UPI's role in supporting government demonetization efforts and its impact on reducing cash dependence.

RESEARCH METHODOLOGY

The study focuses on users of the Unified Payments Interface (UPI) within India's informal economy, particularly targeting youth and small business owners engaged in micro-transactions. To gather data, convenience sampling was employed, reaching out to individuals willing to participate via an online survey created with Google Forms. The survey consisted of ten questions that explored the frequency of UPI usage, transaction history, consumption habits, preferred UPI apps, and expectations regarding rewards and usability. A total of 50 respondents from various demographic backgrounds contributed to the study, providing valuable insights into how UPI is transforming payment behaviors, promoting cashless transactions, and influencing cash flow in informal economies.

HYPOTHESES**Hypothesis 1: UPI Awareness in the Informal Economy**

- Null Hypothesis (H_0): There is no significant UPI adoption among local shops and street vendors.
- Alternative Hypothesis (H_1): There is significant UPI adoption among local shops and street vendors.

Hypothesis 2: UPI, Cash Flow, & Transparency

- Null Hypothesis (H_0): UPI usage does not significantly help regulate cash flow or promote transparency in financial transactions.
- Alternative Hypothesis (H_1): UPI usage significantly helps regulate cash flow and promotes transparency in financial transactions.

Hypothesis 3: UPI and Cash Dependency Post-Demonetization

- Null Hypothesis (H_0): UPI has not significantly contributed to reducing cash dependency post-demonetization.
- Alternative Hypothesis (H_1): UPI has significantly contributed to reducing cash dependency post-demonetization.

SIGNIFICANCE OF THE STUDY

This research sheds light on how the Unified Payments Interface (UPI) has evolved within India's informal economy, particularly focusing on how street vendors and small shopkeepers are adapting to digital payments. To boost UPI usage, we need to tackle challenges such as low digital literacy, inadequate infrastructure, and regulatory hurdles.

The project aims to:

- Develop targeted education and outreach initiatives for micro-entrepreneurs.
- Improve access to affordable and reliable digital payment systems.

LIMITATIONS OF THE STUDY

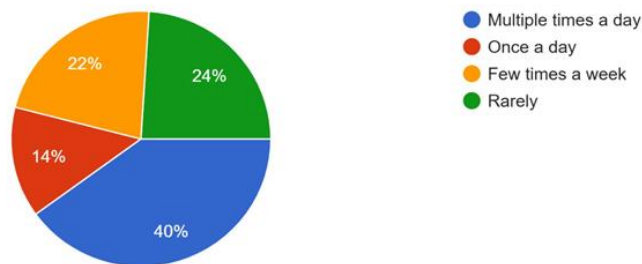
Sample was small traders, hence results cannot reflect the whole informal market fully. Answers are based on user experience, which could lead to subjective bias.

DATA ANALYSIS

An analysis of the provided survey on Unified Payments Interface (UPI) usage, based on 50 responses, reveals significant trends in its adoption, user behavior, and impact on spending habits. Below are the 5 questions out of 10 Questions which were asked and the summary of responses

How often do you use UPI?

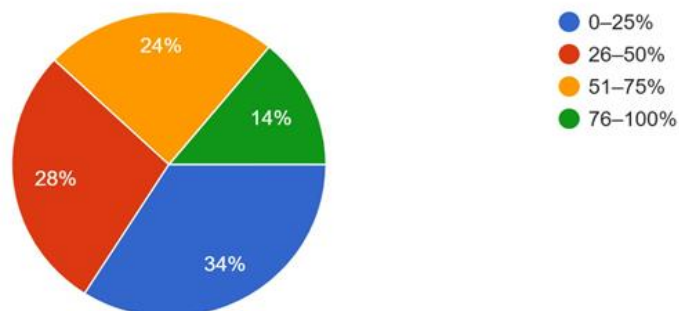
How often do you use UPI?
50 responses

**HIGH FREQUENCY AND DOMINANCE IN SMALL TRANSACTIONS**

The survey indicates a strong reliance on UPI for daily financial activities. A significant 64% of respondents use UPI at least once a day, with 40% using it multiple times a day. This frequent usage is particularly prominent for small-value transactions under ₹500, where 64% of users report using it "Always" or "Often". This suggests that UPI has become the preferred method for everyday minor purchases.

What percentage of your total transactions are made via UPI?

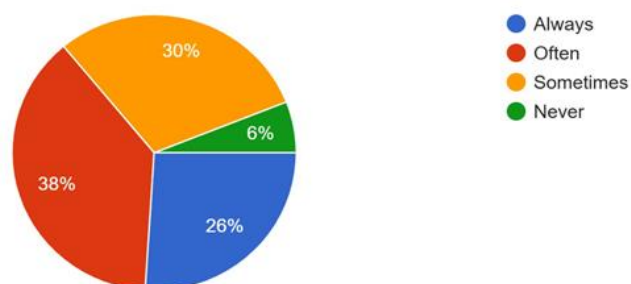
What percentage of your total transactions are made via UPI?
50 responses

**UPI AS A PRIMARY TRANSACTION METHOD**

For a substantial portion of the surveyed individuals, UPI is not just a supplementary payment option but a primary method for conducting their financial transactions. Nearly half of the respondents (48%) make more than 50% of their total transactions via UPI, with 14% conducting over 76% of their transactions through the platform. This highlights a significant shift away from traditional payment methods like cash and cards towards this digital platform.

Do you use UPI for small-value transactions (under ₹500)?

Do you use UPI for small-value transactions (under ₹500)?
50 responses

**HIGH FREQUENCY AND DOMINANCE IN SMALL TRANSACTIONS**

The survey indicates a strong reliance on UPI for daily financial activities. A significant 64% of respondents use UPI at least once a day, with 40% using it multiple times a day.

This frequent usage is particularly prominent for small-value transactions under ₹500, where 64% of users report using it "Always" or "Often". This suggests that UPI has become the preferred method for everyday minor purchases.

HYPOTHESES

Hypothesis 1: UPI Awareness in the Informal Economy

- Null Hypothesis (H_0): There is no significant UPI adoption among local shops and street vendors.
- Alternative Hypothesis (H_1): There is significant UPI adoption among local shops and street vendors.

Statistical Test:

A Chi-Square Goodness-of-Fit test was conducted to determine if the observed adoption of UPI by local vendors was statistically significant. The test compares the observed frequencies of "Yes" and "No" responses from the survey to the frequencies that would be expected if there were no significant adoption (i.e., a 50/50 split).

- **Chi-Square Statistic:** 26.46
- **p-value:** < 0.00001
- **Significance Level (α):** 0.05

Interpretation:

The p-value is significantly less than the standard 0.05 significance level. This extremely small p-value indicates that the observed result—the overwhelming majority of respondents noticing UPI adoption by local vendors—is statistically significant and highly unlikely to be due to random chance. The data provides powerful evidence against the null hypothesis.

Therefore, we reject the null hypothesis and accept the alternative hypothesis. The findings confirm that there is a significant and widespread adoption of UPI among local shops and street vendors, highlighting its deep penetration into India's informal economy.

Hypothesis 2: UPI, Cash Flow, & Transparency

- Null Hypothesis (H_0): UPI usage does not significantly help regulate cash flow or promote transparency in financial transactions.
- Alternative Hypothesis (H_1): UPI usage significantly helps regulate cash flow and promotes transparency in financial transactions.

Statistical Test:

A Chi-Square Goodness-of-Fit test was performed to assess whether UPI significantly improves users' ability to track financial records, which serves as a proxy for regulating cash flow and promoting transparency.

- **Chi-Square Statistic:** 21.78
- **p-value:** < 0.00001
- **Significance Level (α):** 0.05

Interpretation:

The p-value obtained is substantially smaller than the 0.05 threshold. This indicates that the perception of UPI as a tool for easier financial tracking is statistically significant. The strong agreement among users demonstrates a clear trend that is not a result of chance. The ease of tracking transactions digitally is a direct measure of enhanced financial transparency and better personal cash flow management.

We reject the null hypothesis and accept the alternative hypothesis. The statistical evidence confirms that UPI usage significantly helps regulate cash flow and promotes transparency by making it substantially easier for users to track their financial transactions.

Hypothesis 3: UPI and Cash Dependency Post-Demonetization

- Null Hypothesis (H_0): UPI has not significantly contributed to reducing cash dependency post-demonetization.
- Alternative Hypothesis (H_1): UPI has significantly contributed to reducing cash dependency post-demonetization.

Statistical Test:

A Chi-Square Goodness-of-Fit test was conducted to evaluate if the use of UPI for small-value transactions (under ₹500)—a domain traditionally dominated by cash—is significant enough to indicate a reduction in cash dependency.

- **Chi-Square Statistic:** 6.08
- **p-value:** 0.013
- **Significance Level (α):** 0.05

Interpretation:

The resulting p-value of 0.013 is less than the significance level of 0.05. This demonstrates that a statistically significant number of users frequently rely on UPI for small-value transactions, which directly displaces the use of physical cash. The pattern of preferring UPI over cash for everyday, small-ticket purchases is unlikely to be a product of random variation.

We **reject the null hypothesis** and accept the alternative hypothesis. The findings statistically support the conclusion that UPI has significantly contributed to reducing cash dependency in the post-demonetization era by becoming a preferred mode of payment for daily, low-value transactions.

SCOPE FOR FUTURE

1. **Long-Term UPI Adoption Trends:** Future studies can analyze how continued use of UPI impacts informal businesses over time.
2. Compare the success and challenges of India's UPI model for the informal economy with similar real-time payment systems
3. Researchers can evaluate the success of Digital India policies by comparing similar payment systems in other developing countries to identify global best practices.
4. Further research can investigate cybersecurity risks and digital literacy gaps in UPI usage.
5. Studies can evaluate whether UPI encourages informal businesses to participate in the formal tax system.

CONCLUSION

This research verifies that the Unified Payments Interface (UPI) has been a revolutionary catalyst in the Indian economy, serving as a pivotal stepping stone toward a digitally-oriented future. The study verifies that UPI has not merely transformed payment habits but has also significantly reshaped the interaction between India's formal and informal economic systems.

The results conclusively indicate that the adoption of UPI by small businesses and street vendors is extensive and statistically substantial. By facilitating frictionless, secure, and real-time micro-transactions, UPI has been able to integrate a large part of the informal economy into the digital mainstream. This solves one of the central research goals, establishing that UPI is an effective tool for economic formalization at the base level.

In addition, the evidence firmly indicates that UPI strengthens cash flow management and transparency. To individuals, especially the youth, it has converted the tracking of money from a tedious process to an easy, automatic one. This increased transparency has empowered people, although at the same time it has driven them to spend more online because the system is convenient and rewarding.

Lastly, statistically, the research attests to UPI's pivotal position in mitigating dependence on physical cash, one of the main objectives of the 2016 demonetization exercise. In becoming the mode of choice for regular, low-value transactions, UPI has been able to supplant physical cash in an area where it was previously unassailable.

In short, UPI is not only a payment system; it is a tool of financial inclusion and a driver of market change. Through digital bridge and empowerment of crores, it is building the road for an exponential digital economy, making India the world leader in real-time digital payments.

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A STUDY ON ASSET RECONSTRUCTION COMPANIES

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ABSTRACT

This research paper aims at understanding the market of Asset Reconstruction Companies (ARCs). It also analyses the growth in the sector and aims to analyse the various trends in the ARC segment with regards to issuance, subscription and redemption of Security Receipts. The study will highlight various aspects of the ARCs in an attempt to analyse the sector and determine the challenges ahead.

Keywords – Asset Reconstruction Companies (ARCs), NPA

INTRODUCTION

Under the aegis of The Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002, (SARFAESI Act) Asset Reconstruction Companies (ARCs) could be set up as a specialised financial institution which would help in alleviating the Non-Performing Asset (NPA) crisis in the Indian banking sector. The objective behind permitting ARCs and thereby securitisation of loans was to reduce the NPAs as the ARCs would buy the bad loans of banks essentially cleaning up the books of banks which were burdened by stressed assets. Thus, reconstruction of banks' assets is done by ARCs which are incorporated as companies under Companies Act and registered with RBI under SARFAESI Act. Under the securitisation process the ARCs issue Security Receipts (SRs) on the underlying stressed assets that have been purchased from the banks. These Security Receipts are purchased by Qualified Buyers, which include entities such as large financial institutions – banks, Non-Banking Financial Companies (NBFCs), insurance companies, asset management companies, etc. There has been a relaxation in minimum asset size requirement for NBFCs and Housing Finance Companies (HFCs) in 2025 thereby easing the eligibility for entities to register as QBs, which can increase the investor base for the SRs and give a boost to the securitisation market of ARCs by widening their capital base.¹

REVIEW OF LITERATURE

Meher and Puntambekar (2018) analysed the correlation between profitability growth rate of ARC (ARCIL) and growth rate of GNPA and found that there was a high degree of positive correlation between the two variables indicating that an increase in Gross NPA level will increase profitability of ARC as it will have greater business opportunity.² **Azash and Reddy (2022)** identified low rates of redemption and inflated acquisition costs as two major issues impeding growth of the ARC segment.³

RESEARCH METHODOLOGY

Statement of Problem

The research aims to understand the ARC segment in Indian financial system and delve deep into analysing the various trends and patterns with regards to security receipts, their issuance, subscription and redemption.

Research Objectives

- To assess the overall ARC market in India
- To analyse the growth trends in the ARC market in India

Data Collection

The research is based on secondary data sources. The secondary data has been collected from the following sources - news articles, journals, credit rating agency reports, RBI reports and Reports of the Association of ARCs in India.

Limitations of Study

- a) The study relies solely on secondary data sources and does not involve any primary research.
- b) The scope of research is limited up to FY 21.

DATA ANALYSIS

Assessment of the overall ARC market in India and analysis of growth trends

Currently there are 27 ARCs operating in India registered with Reserve Bank of India (RBI). The oldest ARC established in India was ARCIL in 2002. In 2021, NARCL was set up as a government sponsored ARC with public sector banks being the majority stakeholders. The ARCs have seen the following growth trend with

regards to book value of stressed assets acquired, with growth declining in FY 2024, however in absolute terms Rs.1,86,303 Crores was added from FY 23 to FY 24. –

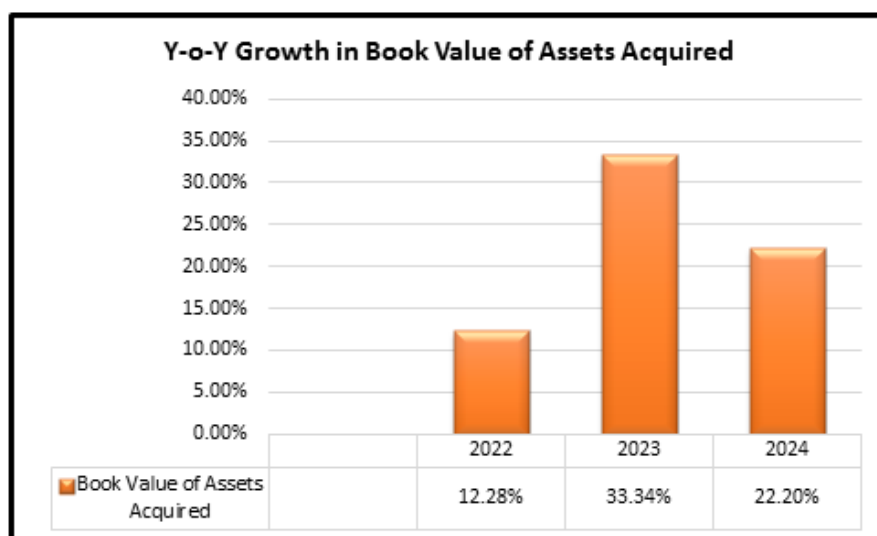


Figure 1

Source: RBI Report on Trend and Progress of Banking in India(FY 22-23, FY 23-24)⁴

In FY 25, the book value of assets increased significantly from 10.2 lakh crores to 16.1 lakh crores showing a Y-o-Y growth of more than 60%, however this growth was primarily driven by one- time acquisition of almost Rs.4.2 lakh Crore of the stressed assets held in the Stressed Assets Stabilisation Fund (SASF) which was set up by the government to deal with the stressed assets of IDBI bank, in 2004. Thus on excluding the legacy assets under SASF, the increase in book value of assets was only Rs.1.71 lakh crore thus showing a decline in growth to approximately 16.7% from FY 24 to FY 25.

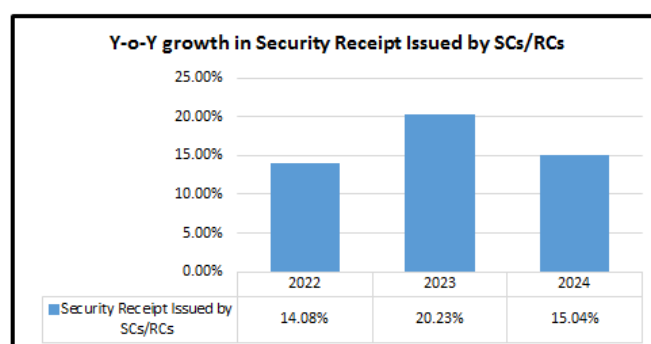


Figure 2

Source: RBI Report on Trend and Progress of Banking in India(FY 22-23, FY 23-24)⁵

Security receipts are an integral part of the securitisation process and the means by which ARCs raise funds against the stressed asset portfolios purchased by them. From FY 24 to FY 25, the issuances of security receipts saw a stagnant growth in absolute terms with numbers being similar to the previous year at approx. Rupees Thirty Seven Thousand Crores.⁶

Table 1: Security Receipts Issuance and Subscription

Particulars	FY 2021	FY 2022	FY 2023	FY 2024
Security Receipt Issued by SCs/RCs	179560	204841	246290	283330
Security Receipts Subscribed to by (a) Selling Banks/FIs	117551	128007	149253	167483
Security Receipts Subscribed to by (b) SCs/RCs	35522	41350	49519	57201
Security Receipts Subscribed to by (c) FIIs	11427	15069	19383	21518
Security Receipts Subscribed to by (d) Others (Qualified Institutional Buyers)	15060	20415	28135	37128

Source: RBI Report on Trend and Progress of Banking in India(FY 22-23, FY 23-24)

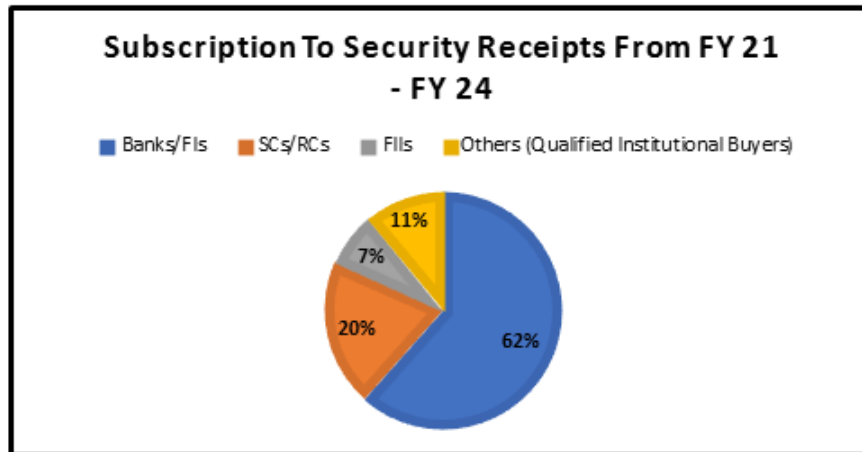


Figure 3

Based on Figure 3 it is evident that main buyers of Security Receipts issued by ARCs have been Banks and financial institutions contributing to 62% of the subscription. However looking at Figure 4 it is clear that growth rate of subscription for banks and FIs has not shown much increase. With FIs the subscription and thereby interest in the security receipt market as an investment alternative is showing a declining trend.

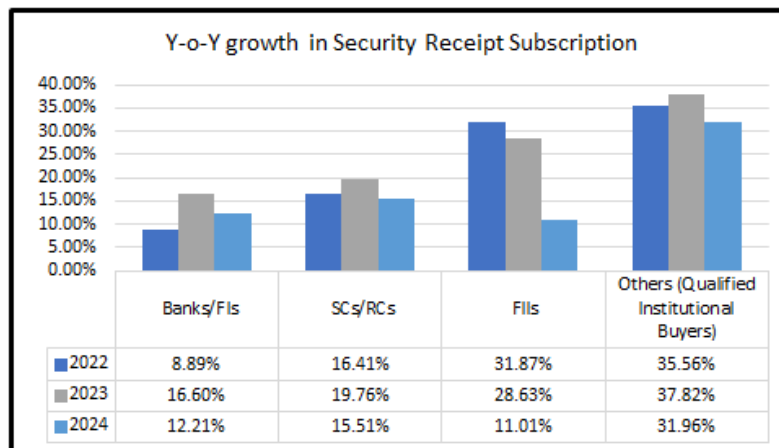


Figure 4

The security receipts issued by the ARCs are to be serviced through the cash flows generated in the recovery or redemption process of the underlying stressed assets which can be analysed using the Security Receipt Redemption value. This is the main source of cash inflow for the ARCs. The redemptions in overall numbers showed an increase by Rs.43,256 crore in FY 25 as compared to an increase in redemptions by Rs.37,364 Crores. This was a positive sign as it indicated a 15.8% increase in redemptions mainly due to recoveries driven by power and infrastructure sector. The major channel for the recoveries was through the legal route under Insolvency and Bankruptcy code which contributed to 2/3rd of the recovery, remaining was through sale of assets.⁷

CONCLUSION

As the ARC segment continues to grow and Security Receipts emerge as a viable investment alternative, the major challenge ahead for the sector is the reduction in Gross NPAs which has reduced the asset base which can be purchased by ARCs to create security receipts over. But the growth and momentum still continues since the government has relaxed several norms such as the restrictions on Net Owned funds to set up ARC, or capital restriction on investing in Security Receipts. Permitting NBFCs and HFCs to invest in Security Receipts also gives a big boost to the segment. At the same time with the well-structured legal recovery mechanism under the Insolvency and Bankruptcy Code the redemptions have shown an upward momentum.⁸ Thus, securitisation in India through ARCs has been instrumental in cleaning the book of accounts of banks and enhancing liquidity and credit availability in the financial sector.

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PERCEPTIONS AND IMPLICATIONS OF ETHICAL BRANDING IN E-COMMERCE: A CONSUMER PERSPECTIVE

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ABSTRACT

“Ethics is knowing the difference between what you have a right to do and what is right to do” - Potter Stewart

The purpose of this paper is to understand and analyze consumer perception on Ethical branding in E-commerce business. The rise of ethical branding in E-commerce is immensely influencing consumer behavior, demonstrating an increasing trend towards socially responsible patterns of consumption. The study explores consumer perceptions on ethical branding and its implications within the online marketplace.

The research further examines awareness and understanding levels of consumer on ethical branding in e-commerce. The research explores the familiarity of respondents towards ethical branding and their perception on the significance of ethical practices. Through a comprehensive analysis of responses, the study identifies the key factors that contribute to influence consumer purchase intentions and behaviors on ethical branding in e-commerce. The study further tries to highlight the positive influence of ethical branding on consumers that can enhance the trust on e-commerce brands. The study also aims at emphasizing on the fact that consumers perceive ethical branding can accelerate the brand value of a brand indicating the role of ethics in today's digital world.

Keywords: Ethical branding, Consumer perception, E-commerce, Purchase Intentions, Brand Value

OBJECTIVES

- To examine Consumer Awareness and Understanding of Ethical Branding in E-Commerce.
- To analyze the Influence of Ethical Branding on Consumer Purchase Intentions and Behavior in E-Commerce
- To assess the Impact of Ethical Branding on Brand Value of E-Commerce

RESEARCH METHODOLOGY

Research Design: The research employs mixed approach including both descriptive and exploratory in nature.

Data Sources: The study includes data from both primary and secondary sources. Primary data is collected using a structured questionnaire. Secondary data was gathered from various sources, including websites, journals, and articles.

Sampling method: The convenience sampling method was used for collecting primary data through a structured questionnaire directed to a sample of 71 respondents from Mumbai.

Data Analysis: The survey data was analyzed using descriptive statistics to summarize and describe the data collected. Measures of frequency distribution, mean, median and mode, standard deviation, sample variance, kurtosis and skewness.

SIGNIFICANCE OF THE STUDY

The study aims at understanding the consumer perceptions and implication of ethical branding in e-commerce. It also explains the level of awareness and understanding of consumers about ethical branding in e-commerce. The study will further help to explore the influence of ethical branding on consumer purchase intentions and behaviours. Understanding and exploring the perceptions and implications of ethical branding will direct e-commerce businesses to manage and implement suitable brand management strategies so as to achieve long-term objectives. The study further can be extended to brick-and-mortar business models in the future as ethical branding is a universal concept applicable to all streams and areas of business either online or offline.

The study aims to understand consumer perceptions and the implications of ethical branding in e-commerce. It examines the level of awareness and comprehension consumers have regarding ethical branding in the online marketplace. Additionally, the research explores how ethical branding influences consumer purchase intentions and behaviors. By investigating these perceptions and implications, the study provides valuable insights that can

guide e-commerce businesses in developing and implementing effective brand management strategies to achieve long-term goals. The findings may also be applicable to brick-and-mortar business models in the future, as ethical branding is a universal concept relevant to all types of businesses, whether online or offline.

Literature Review

- Alwi, Sharifah & Ali, Sulaiman & Nguyen, Bang. (2017). The study highlights the vital role of ethics in branding. It explores how ethical branding facilitates between a company's reputation and loyalty. The study reveals that the company with strong ethical branding not only boosts its reputation among consumers but also accelerates consumer brand loyalty to a higher level. The research emphasizes that the ethical practices significantly impact consumer perceptions and behaviors towards brands. The findings demonstrate that a brand functional and emotional values such as product quality, perceived price and service quality affect the company's reputation influencing ethical branding practices.
- Sharma, Gajendra & Lijuan, Wang. (2014). The research investigates the diverse factors that influence trust and privacy of consumer on e-commerce platforms. It also identifies various ethical factors that impact consumers perceptions towards buying from e-commerce sites. The findings revealed that the ethical demonstrations of e-commerce companies will facilitate rise in trust among consumers which in turn will improve long term commitment and loyalty for the brand. The study suggested security and privacy are the two major driving forces that lead to consumers develop trust on digital platforms.
- Adam, Avshalom & PhD, Avshalom & Sadeh, Arik. (2007). The study explores the significance of ethical factors and its impact on consumers' willingness to purchase online. The study further investigates factors considered by consumers, one is commercial factors (pricing and quality aspects), and other is ethical factors (privacy and security, accountability and accurate product description). The study although reflects on the positive impact of ethical considerations on consumers buying behavior, the findings underscore the adherence to ethical practices by online marketers to attract and retain e-consumers.

INTRODUCTION & BACKGROUND

Meaning of Ethical Branding

Ethical branding refers to the practice of prioritizing and promoting ethical principles and values in businesses. This involves exhibiting socially responsible and morally acceptable actions. Ethical branding ensures practicing positive actions that leads to minimal detrimental effect to public and environment. The Ethical branding also leads to changing perceptions of consumers and considering buying products and services from the marketers who follow moral principles and ethics. This also involves displaying transparency, honesty and social responsibility in all aspects of business. In this digital age, consumers are gradually being more conscious and demanding for the products and services from the marketers that contribute towards sustainable ways of doing business. Ethical branding in business refers to being further responsible and causing no harm towards public, society, environment etc. It refers to build strategies and values that is ethically and morally acceptable by consumers and the society at large.

One of the significant aspects of ethical branding is maintaining transparency. This means the marketers exhibit honesty and sincerity in sharing detailed information about their products and services. This involves information on the materials used, quality details,

Another significant aspect of ethical branding is social responsibility. This involves considering the impact of the company's operations on people, environment and society. The marketers need to implement practices that minimize the negative effects and promote sustainable ways of undertaking business.

Ethical branding also involves treating and considering all stakeholders of business with fairness, respect and equality. The stakeholders include customers, employees, suppliers, creditors, general public, government, investors etc. A fair and constructive business practices are needs to be promoted and displayed by the marketers.

Overall, ethical branding is crucial for building trust and confidence with consumers and creating a positive reputation for a company. By demonstrating a commitment to ethical principles and values, businesses can attract and retain customers who value transparency, social responsibility, and fairness. By following ethical branding practices, a company can set apart its image from its competitors and lead to long-term success. Ethical branding not only builds better reputation but also helps to attain consumer trust and loyalty with positive word of mouth.

ETHICAL BRANDING IN E-COMMERCE

Even though we live in a digital era fueled with technology all across, customers may express a dilemma of trusting from an online marketplace as compared to physical store. Thus, it is vital for online marketers to exhibit ethical practices so as to gain the trust and loyalty of customers. Ethical branding in E-commerce helps to combine the company's values and principles along with its business operations to maintain its brand identity.

Ethical branding in E-commerce leads to responsible practices that aligns business operations with social responsibility demonstrating positive effects and minimize harm to people and environment.

Some of the core values and principles of ethical branding practices in E-commerce could be:

Sustainable Development: Using materials that are eco-friendly, easily recyclable, and biodegradable so as to reduce the negative impact on environment and its resources. Brands need to emphasize their commitment towards environment and its resources.

Transparent Communication: Maintaining and corresponding adequate and clear information to all the stakeholders as and when required is the key to gaining trust among customers.

Honest marketing: Accurately demonstrating the facts and information about the products and services will help retain positive customer relationships. Deceptive, false and misleading claims will affect the credibility of business.

Protecting Customer Privacy: Protecting customer privacy and confidentiality is of utmost priority for businesses. Any breach of the same shall impact on the credibility and image of the brand significantly. Prioritize customer to be the first and last chain of any business operations.

Fair trading practices: Demonstrating fair trade practices signifies brands commitment towards social responsibility. It also establishes a positive and respectable image in the consumers mind changing their attitudes and perceptions towards a company.

Empowering and educating consumers: Consumers are the deciders in today's digital age. Their views and knowledge about the products and services are most valued and considered in the online marketplace. Hence empowering them with required information will help build trust and confidence amongst consumer groups.

Social Initiatives: Brands that participate and contribute towards social causes develop a lasting and positive image in the market. Contribution to education, healthcare, environment conservation, people welfare activities help to foster goodwill and respect from all the stakeholders.

In today's digital era, consumers expect companies to display rightful and correct image of their brand that benefits all the consumers as well as the society at large. By adopting ethical practices, brands can accelerate their growth and success, meanwhile building trust, fostering customer loyalty and gaining a competitive advantage over their competitors in the online marketplace.

DATA ANALYSIS AND INTERPRETATION

This section gives the demographic details of the respondents of the survey.

Table 1: Profile of the respondents

Particulars	Frequency (N=71)	Percentage
Gender		
Female	40	56.3%
Male	31	43.6%
Age (in years)		
Up to 24	26	36.6%
25 to 35	16	22.5%
36 to 46	22	30.9%
47 to 56	5	7%
Above 56	2	2.8%

Source: Survey Data

Table 1 shows that there is an unequal distribution of females and males amidst the respondents. Majority of the respondents are in the age group of up to 24 followed by 36 to 46 years.

Table 2: Channels Used for Shopping

Channel	Frequency	Percentage based on number of respondents
Both	65	92%
Offline	4	5%
Online	2	3%

Source: Survey Data

Table 2 indicates that out of the total sample size, the majority of respondents (65) use both online and offline channels for their shopping needs. A smaller number of respondents (4) use offline channels and even smaller (2) use only online channels. The results indicates that the respondents prefer to optimize both the online and offline channels, helping them to avail the best of products and services from both platforms.

Table 3: Familiarity with the concept of Ethical Branding in E-commerce

Familiarity Scale	Frequency	Percentage based on number of respondents
Very familiar	17	24%
Somewhat familiar	35	49%
Neutral	16	23%
Somewhat unfamiliar	2	3%
Very unfamiliar	1	1%

Source: Survey Data

Table 3 highlights the respondent's familiarity with the concept of Ethical branding in E-commerce. As per the study, out of the total 71 respondents surveyed, 49% of the respondents are Somewhat familiar with the ethical branding concept, and about 24% of the respondents are Very familiar, followed by 23% being Neutral about their familiarity. Respondents who are not familiar or unfamiliar falls in the range of 3% and 1% which indicates that majority of the sampled respondents are aware and familiar with Ethical branding concept E-commerce. The results provide an overview of respondents having an understanding of ethical practices that may be considered and influence their decisions while purchasing from online market places.

Table 4: Importance of Ethical Branding in E-commerce

Scales	Frequency	Percentage based on number of respondents
1-Not important at all	Nil	0
2-Slightly important	1	1%
3-Moderately important	16	22%
4-Very important	19	27%
5- Extremely important	35	49%

Source: Survey Data

The Table 4 contains statistical data on how important respondents think ethical branding is for e-commerce companies rated on a scale of 1 to 5. From the data significant majority of respondents 35% consider ethical branding to be 'Extremely important' and 27% rating it as 'Very important'. 22% of the respondents consider ethical branding as 'Moderately important' acknowledging ethical branding as less critical but still consider it important. Only 1% of respondent rated as 'Slightly important' whereas, there are no respondents who view ethical branding as 'Not important at all'. The overall survey results reinforces the importance of ethical branding for E-commerce companies.

Table 5: Descriptive Statistics of Data (Importance of Ethical Branding in E-commerce)

Mean	Median	Mode	Standard Deviation	Sample Variance	Kurtosis	Skewness
4.239	4	5	0.852	0.727	-0.937	-0.629

Range	3
Minimum	2
Maximum	5
Count	71

Table 5 show the high mean, median, and mode values indicate that the majority of respondents surveyed

consider ethical branding to be very important for e-commerce companies. The moderate standard deviation and sample variance indicate that while maximum respondents agree on the importance, there is some variability in the degree of importance they assign. The negative skewness and kurtosis suggest that there is a tendency towards higher ratings, with relatively few with very low ratings. Thus, the data implies that there is strong consensus among respondents that ethical branding is vital for e-commerce companies.

Table 6: Brand engaged in Ethical Branding are Trustworthy

Particulars	Frequency	Percentage based on number of respondents
Yes	47	66%
No	2	3%
Maybe	22	31%

Source: Survey Data

Table 6 highlight the respondents' belief that brands that engage in ethical practices are more trustworthy than those that do not. The findings of the study shows that a substantial majority of the respondents (66%) perceive brands that engage in ethical practices as more trustworthy. The higher favorable response suggests a strong preference for ethical branding. However, with the 31% of respondents being uncertain, indicates even though ethical branding is vital, there are also other factors that determines brands trustworthiness among consumers.

Table 7: Trust a Brand based on the specific Ethical Claims

Ethical Claims	Frequency	Percentage based on number of respondents
Company website information	39	39%
Third-party certifications	31	31%
Customer reviews	77	77%
Visible impact of ethical practices	57	57%
Social media presence	23	23%
Celebrity endorsements	8	8%

Source: Survey Data

$N=100$ Multiple Response Rate (MRR)= $235/100= 2.35$

Table 7 shows the respondents perceived trust on a brand based on specific ethical claims. The respondents were asked to check out from the specific ethical claims mentioned. According to the MRR=2.35, each respondent has checked out a minimum of 2 boxes. The most preferred ethical claim to trust an e-commerce brand is from Customer reviews (77%) followed by Visible impact of ethical practices (57%) and then Company website information (39%) along with Third-party certifications (31%). The fewer respondents selected Social media presence (23%) and even more fewer selected Celebrity endorsements (8%). The data indicates that customers trust and belief customer reviews to learn about the ethical claims made by the e-commerce companies, while the results also indicate that celebrity endorsements are not adequate to make customers trust a brand.

Table 8: Perception of the Brand Value of an E-commerce company that practices Ethical Branding

Perception of the Brand Value	Frequency	Percentage based on number of respondents
Much Higher	21	29%
Higher	41	58%
Same	9	13%
Lower	Nil	0
Much Lower	Nil	0

Source: Survey Data

Table 8 shows the perception of respondents with respect to the brand value of an e-commerce company that practices ethical branding. The findings of the study reveals that the majority of respondents (58%) perceive the brand value of an e-commerce company that practices ethical branding as "Higher", while other 29% respondents perceive "Much higher". This indicates the respondent's strong positive perception towards ethical branding. The minority set of respondents (9%) indicate they are indifferent towards any change in the brand value due to ethical branding.

The respondents with substantial majority suggest that they view an e-commerce brand value upraises due to following ethical branding practices. No respondents perceive the brand value to be “Lower” or “Much lower”. This signifies that ethical branding does not undermine the brand value perception of respondents, emphasizing the idea that practicing ethical branding will either be beneficial or same but not does not reduce the brand value of e-commerce company.

MANAGERIAL IMPLICATION

The findings of the study have several critical managerial implications for e-commerce businesses. By implementing these strategies e-commerce businesses can fulfill ethical expectations and help their businesses to achieve their objectives.

Maintain transparency: E-commerce businesses should ensure to share detailed information about the products and services they offer.

Highlight Ethical practices: E-commerce companies should highlight the ethical practices that they follow through marketing campaigns. Companies should emphasize fair trade practices, sustainability, social initiatives etc which can help attract ethically conscious customers.

Display Customer testimonials and reviews: Customers rely on other customer reviews to verify claims of companies, hence promoting and displaying customer reviews and testimonials can help instill trust amongst customers.

Third-Party Certifications: Procuring third-party certifications from recognized authorities for ethical practices and displaying the same can further strengthen customer trust. Certifications validate the claims made by the companies.

Ethical Sourcing: The companies should ensure to follow sustainable sourcing for their products and services. It includes using eco-friendly materials, fair trade and labour practices, reducing environmental impact through sustainable development.

Social initiatives: E-commerce companies should ensure to contribute to various social causes that will display their social responsibility towards society and people. Social contributions to healthcare, education, environment protection, welfare activities will leave a strong positive impact on customers and also will gain positive image for the company.

CONCLUSION

The awareness on ethics amongst customers is a major challenge for the marketers to withstand customer trust and loyalty. The rise of ethical branding is reflecting an increasing trend for e-commerce companies driving towards socially responsible practices in business. Ethical branding is thus significantly influencing consumer behavior on a larger scale. The study explores the consumer perception and understanding of ethical practices and its impact on their trust and loyalty within the online marketplace. The findings of the study reveal that consumers are familiar with the concept of ethical branding and consider ethical practices as critical determinant for e-commerce business. Another aspect of the findings revealed that customer reviews play a significant role in determining the trust on an e-commerce brand, meanwhile the study underscores the inadequacy of the celebrity endorsements for trusting a brand. Additionally, the findings also illustrated on the perception of respondents, that the brand value of an e-commerce brand significantly enhances by practicing ethical branding.

The research offers valuable insight for e-commerce companies aiming to enhance their brand value by promoting ethical branding. These findings will also broaden the horizon in understanding the factors that influence consumer perception towards ethical branding and also will help build branding strategies that will instill trust amongst consumers and guide towards building sustainable growth practices in business.

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A STUDY OF JOB INSECURITY IN THE FILM INDUSTRY AMONG FREELANCE ACTORS IN MUMBAI WITH REFERENCE TO MENTAL HEALTH, PERSONAL RELATIONSHIPS AND FAMILY WELL-BEING

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ABSTRACT

Mumbai, the city of dreams, is home to India's fast-paced film industry, where many young actors dream of making it big. But behind the glamour, freelance work often means no fixed income, uncertain schedules, and constant pressure. This study looks at actors aged 20–30 who work per project or per day basis, and how this unstable work life affects their mental health, emotions and personal relationships, and family life. Using the DASS-21 scale, it examines and tracks links to stress, anxiety, and depression.

Keywords: job insecurity, freelancers, film industry, Mumbai, mental health, emotional wellbeing, family wellbeing, anxiety, depression, and self-confidence, financial instability, personal relationships, emotional disconnect, family tension

INTRODUCTION

Historical evolution of Indian Film Industry

The Indian film industry, deeply tied to the nation's socio-cultural evolution, began with the Lumière brothers' screening in 1896. Dadasaheb Phalke's *Raja Harishchandra* (1913) marked the birth of Indian cinema. The first talkie, *Alam Ara* (1931), revolutionised filmmaking, followed by regional cinema like *Ayodhecha Raja* (1932). The 1950s-60s were cinema's golden era, while the 1970s popularised masala films. The 1990s saw new stars like Shah Rukh Khan, Madhuri Dixit, Aamir Khan emerge who reshaped Bollywood's reach. Post-2008, Indian cinema gained global recognition, with OTT platforms reshaping viewership post-2020. Films like *RRR* (2022) achieved international acclaim, reflecting Indian cinema's dynamic growth through bold storytelling, technological innovation, and global collaborations.

Film Industry and Mumbai

The Indian film industry, the world's second-largest, produces around 1,500 films annually, with Mumbai as its epicentre. Known as the "City of Dreams," Mumbai is synonymous with Bollywood and attracts countless aspirants seeking success in cinema. Its role as India's film capital stems from historical, cultural, and economic factors, dating back to colonial times when it evolved into a creative hub.

Mumbai's diverse population inspires varied storytelling, while its financial status supports large-scale productions. However, intense competition, financial instability, and uncertain career paths pose challenges, making Mumbai both a land of opportunities and struggles for aspiring artists.

Job Insecurity in the Film Industry

The Indian film industry is inherently volatile, with project-based employment creating job insecurity for both aspiring and seasoned professionals. Careers are marked by fluctuating activity, with success often dependent on a single film's performance, changing audience preferences, and market trends. Behind-the-scenes workers face financial instability, lack of formal contracts, and inconsistent incomes. Fierce competition, reliance on networking over merit, and the pressures of maintaining a public persona via social media add to the challenges. Freelancers lack benefits like health insurance, while limited union support exacerbates risks. This instability impacts financial security, mental health, and personal well-being across the industry.

Job Insecurity and Mental Health

Job insecurity is a pervasive challenge in the film industry due to project-based employment and unstable career trajectories, leading to prolonged stress and financial instability. Professionals face immense pressure to excel, cope with rejections, and navigate industry politics, affecting emotional resilience. Anxiety is common, fuelled by unpredictable job opportunities, the need to stay relevant, and social media scrutiny. This vulnerability often impacts mental well-being. Depression, driven by rejection, financial struggles, and isolation, is a major concern, with stigma hindering access to support. Addressing these issues requires greater awareness of industry pressures and the promotion of sustainable mental health support systems.

Job insecurity and emotional well-being

Job insecurity in the film industry deeply impacts emotional well-being, with constant rejections, project cancellations, and the fear of being forgotten eroding self-esteem. The pressure to succeed and fear of failure create a stressful cycle, leaving little time to emotionally recover. The blurring of personal and professional lives, compounded by the need to maintain a positive public persona, adds to emotional strain. Social media exacerbates feelings of isolation, as many professionals struggle to express vulnerability. To support emotional wellbeing, it is crucial to raise awareness and foster a culture of support within the industry.

Job insecurity and family well-being

Job insecurity in the film industry not only affects professionals but also their families. The uncertainty of income, irregular schedules, and frequent travel create emotional and financial instability at home. Many conservative families, sceptical of the film industry's glamour, struggle to accept unconventional career paths, leading to misunderstandings and emotional distance. The pressure to balance work and family life often results in neglect, straining relationships. Additionally, societal stigma surrounding the industry exacerbates conflicts, as family members face criticism for their association. The intersection of job insecurity and familial stress makes family well-being in the film industry particularly challenging.

DASS – 21

The DASS-21 (Depression, Anxiety, and Stress Scale) is a widely used tool to assess mental health, particularly depression, anxiety, and stress. In the context of the Indian film industry, where job insecurity is prevalent, the DASS-21 is crucial for understanding the mental health challenges faced by professionals. The unpredictability of work, competition, and public scrutiny often lead to anxiety and depression, impacting both personal well-being and professional performance. The DASS-21 provides a structured approach to identify these issues, enabling timely interventions and raising awareness about the need for mental health support and sustainable solutions in the industry.

SIGNIFICANCE OF THE STUDY

To understand the emotional and psychological effects of job insecurity in Mumbai's freelance film community.

To evaluate how irregular work affects personal relationships and family life.

To bring attention to the unstructured, unpredictable nature of employment in the Indian film industry. To provide data-driven insights using DASS-21 on depression, anxiety, and stress levels.

To recommend actionable solutions for stakeholders and policymakers.

RESEARCH GAP

While several studies examine freelance work in general, there is limited research focusing specifically on freelance actors in the Indian film industry. Mental health, emotional strain, and family implications are often underexplored in this context. This study bridges that gap using psychological measurement tools like DASS-21.

AIM

The aim of the research study is to understand the prevalence of job insecurity among freelancers (actors) in the film industry of age group 20-30 residing in the city of Mumbai and examine its effects on the mental health, personal relationships and family well-being.

OBJECTIVES

1. To assess the impact of job insecurity among actors on their mental health with reference to stress, anxiety and depression.
2. To evaluate the effects of job insecurity among actors on their emotional well-being affecting personal relationships.
3. To evaluate the effects of job insecurity among actors on their family well-being.

HYPOTHESIS**Hypothesis 1**

Null Hypothesis (H_0): Job insecurity has no significant effect on actors' mental health (depression, anxiety, and stress).

Alternative Hypothesis (H_1): Job insecurity among actors has a significant effect on their mental health (depression, anxiety, and stress).

Hypothesis 2

Null Hypothesis (H_0): Job insecurity among actors has no significant impact on emotional well-being affecting personal relationships.

Alternative Hypothesis (H_2): Job insecurity among actors significantly impacts emotional well-being affecting personal relationships.

Hypothesis 3

Null Hypothesis (H_0): Job insecurity among actors has no significant impact on family well-being. Alternative Hypothesis (H_3): Job insecurity among actors has a significant impact on family well-being.

LIMITATIONS

Time Limitation

Study is concluded in a short time span.

Sample Size & Generalisability

The study is limited to 100 participants in the age group of 20-30, which may not fully represent all freelance actors in Mumbai.

Geographic Scope

The study is restricted to Mumbai, Thane, Navi Mumbai, and Palghar, limiting applicability to other cities.

Industry-Specific Factors

Results may not apply to freelancers in other creative industries.

REVIEW OF LITERATURE

Indian Film Industry – Market Size

The Indian film industry, second only to Hollywood, is a global entertainment powerhouse, contributing significantly to employment and economic growth (Zacharias & Parekh, n.d.). It received industry status in 2001, covering Bollywood and regional cinemas like Marathi, Kannada, Punjabi, and Malayalam.

By 2025, the industry is projected to generate US\$5.01 billion, reaching US\$6.05 billion by 2029, with an audience base of 653.2 million (Statista, 2024). India ranks second in global cinema revenue, expected to reach US\$23.52 billion by 2025, driven by technological advancements and evolving storytelling (Statista, 2024; Arora, 2021). Mumbai remains the hub, producing 1,000–2,000 films annually.

Freelancing in India

India's economy, projected to be the third largest globally by 2030, is shifting toward freelance-driven employment (Moritz & Krishan, n.d.). The Indian freelancing sector, with 15 million professionals, is expected to be worth \$50 billion by 2032, forming 50% of the workforce by 2025 (Jain & Live Mint, 2024; Daniel & Obillia, 2024).

Freelancers work in arts, journalism, education, business consulting, and medicine, aligning with Germany's tax definition of independent professionals (Akhmetshin et al., 2018). A 2021 report estimated that 64% of freelancers are aged 24-38, with major hubs in Bengaluru, Delhi, and Mumbai (NITI Aayog, 2022). The India Freelance Platforms Market, valued at USD 187.5 million in 2023, is projected to grow at a CAGR of 22.5%, reaching USD 775.6 million by 2030 (India Freelance Platforms Market Size & Outlook, 2024-2030, n.d.).

60% of freelancers are under 30, with 23% earning over Rs. 40 lakhs annually (Daniel & Obillia, 2024). Indian freelancers earn \$22 per hour, higher than \$19 in Asia (Pandey, 2023).

Rising Demand and Competition Among Freelancers

Freelancing is highly competitive, with 69% of Indian freelancers reporting increased competition by 2025, surpassing the global average of 59% (Pandey, 2023).

Despite growth, freelancers struggle with irregular payments, tax complexities (GST and income tax), branding issues, and lack of efficient digital payment solutions, increasing financial instability (Daniel & Obillia, 2024).

Job Insecurity and Well-being

Job insecurity, defined as fear of job loss or worsening work conditions, leads to stress, anxiety, and economic instability (Van Vuuren, 1990; De Witte, 2005). It is classified into:

- Quantitative job insecurity – fear of losing employment entirely, causing financial distress.
- Qualitative job insecurity – fear of deteriorating job conditions, such as lower wages or reduced career opportunities (Hellgren et al., 1999).

Studies confirm job insecurity is a subjective experience, shaped by career instability and economic fluctuations (Sverke et al., 2006). It correlates with chronic stress, depression, and low job satisfaction (Ashford et al., 1989; Boya et al., 2008), along with emotional exhaustion, sleep disorders, and decreased motivation (Mattiasson et al., 1990; Mohr, 2000).

Among affected employees, 97% report clinical anxiety, and 86% suffer from depression (Nella et al., 2015). Workplace engagement and productivity also decline, as insecure employees avoid career investments and withdraw from responsibilities (Barling & Kelloway, 1996; Hartley et al., 1991). Freelancers and part-time workers face higher insecurity than permanent employees, though severity varies by profession (Still, 1983; Näswall & De Witte, 2003).

The impact extends to family life, disrupting financial stability, emotional well-being, and relationships (Hanappi & Lipps, 2019; Elder, Johnson, & Crosnoe, 2003). Finnish research shows job stress affects family dynamics, increasing household tension and emotional distance (Mauno & University of Jyväskylä, 1999). Long-term insecurity links to high blood pressure, cardiovascular risks, and chronic fatigue (Mattiasson et al., 1990; Menéndez-Espina et al., 2019).

Studies suggest social support (partners, family, and external networks) helps mitigate negative effects (Hobfoll, 1989; Hobfoll, 2001).

Indian Film Industry and Job Insecurity

Mumbai's film industry relies on temporary, project-based work, creating widespread job insecurity (Ganti, 2012). In 2017, over 5 million workers were employed in film-related jobs, rising to 6 million by 2019 (Gupta & Mohapatra, 2022; Arora, 2021). However, employment dropped from 7.41 lakh to 2.56 lakh by 2020 (Deloitte, 2020).

75% of stunt artists live below the poverty line, with only 5% achieving financial security (Gupta & Mohapatra, 2022). The 2008 Bollywood strike exposed low wages, long hours, and lack of contracts, yet systemic issues persist (BBC, 2008).

Global Perspective

Job insecurity is a global issue in creative industries, causing financial instability and mental health challenges (Rowland, 2009). A UK study found only 1,200 of 15,000 film freelancers secured jobs, forcing 22% to work outside the industry (J Mackie, 2015).

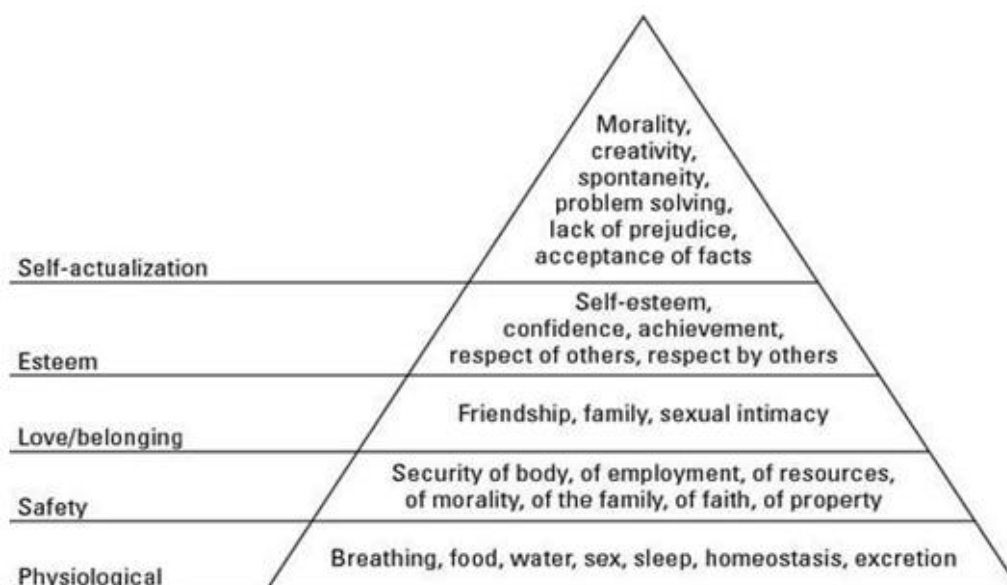
Similarly, in the UK music industry, 68.5% of musicians reported depression, and 71% experienced anxiety due to economic instability (Gross et al., 2020). The COVID-19 pandemic worsened freelancer distress, causing depression and anxiety rates to quadruple in the US (Czeisler et al., 2020; Ettman et al., 2020).

DASS-21

The Depression Anxiety Stress Scale - 21 (DASS-21) is a widely used tool for assessing psychological distress, measuring depression, anxiety, and stress levels (Lovibond & Lovibond, 1995; Antony et al., 1998). Research confirms its validity across different populations, including Portuguese adults and Australian actors (Laranjeira et al., 2023; Szabo et al., 2022).

Theoretical Framework

Maslow's Hierarchy of Needs explains how job insecurity disrupts psychological well-being. The levels are physiological needs (food, clothing), safety needs (job security), love and belonging (friendship, relationships), esteem (self-respect, recognition) and self-actualisation (achieving one's full potential). According to Maslow, basic needs like food and safety must be met before a person can focus on higher-level needs like self-esteem and personal growth (Maslow, 1943, 1954). Stable employment provides financial security, social support, and career growth, but persistent uncertainty blocks self-actualization, increasing stress (Jalil et al., 2023; McLeod, 2024).



RESEARCH METHODOLOGY

Sample Selection

The study focused on freelance or project-based actors aged between 20 to 30 years, living in Mumbai or the Mumbai Metropolitan Region (MMR) for at least one year. Participants were chosen using a combination of convenience sampling (selecting individuals who were easily accessible) and snowball sampling (participants recommending others from similar backgrounds). This approach was used to reach a wider network of actors who fit the study criteria.

Sample Size and Justification

A total of 100 participants were included in the study. This sample size was chosen to allow for meaningful statistical analysis while keeping the research practical and manageable. It provides enough data to identify general trends and relationships between job insecurity and mental health outcomes among young actors in Mumbai.

Tools Used

The main tool used for this study was a structured online questionnaire that included the DASS-21 (Depression, Anxiety, and Stress Scale – 21 items). This is a widely accepted and reliable psychological assessment used to measure the emotional states of depression, anxiety, and stress.

Procedure

Data was collected through online forms circulated among the target group. Participants filled out the questionnaire anonymously to ensure honesty and privacy. The responses were then analysed using both descriptive statistics (mean, median, mode, and standard deviation) and inferential statistics. A one-sample chi-square test was applied to explore the relationship between job insecurity and mental health variables measured by the DASS-21 scale.

DATA ANALYSIS AND INTERPRETATION

Demographic Summary

The study surveyed 100 freelance actors aged 20–30, living in Mumbai and the surrounding MMR region, to understand the impact of job insecurity on their mental health and overall well-being.

Gender Distribution

65% of respondents were male, and 35% were female, indicating more male participation, which may reflect broader gender trends in the industry.

Educational Background

A large portion of actors were graduates (56%), followed by postgraduates (26%), and undergraduates (18%). This highlights that many aspiring actors today are well-educated.

Employment Status

Only 20% reported being regularly employed in acting. 50% were occasionally employed, and 30% were currently unemployed but actively looking, showing the unstable nature of work in the field.

Secondary Income

40% of actors had a secondary source of income, while 29% earned from side jobs occasionally. 31% depended solely on acting, indicating a financial risk for many.

Financial Dependents

53% had one or more family members they financially supported, adding pressure to maintain some form of steady income.

Perceived Job Security

The average job security score was 3.09 out of 5, suggesting that most actors feel moderately secure. Still, 30% felt insecure about their future in acting, while only 33% reported feeling secure. The wide range of responses highlights how perceptions of job security vary widely among individuals.

Hypothesis 1

Null Hypothesis (H_0): Job insecurity has no significant effect on actors' mental health (depression, anxiety, and stress).

Alternative Hypothesis (H_1): Job insecurity among actors has a significant effect on their mental health (depression, anxiety, and stress).

Statements	Chi-square Value	Degrees of Freedom (df)	Significance (p-value)
Depression	25.220	2	<0.001
Anxiety	85.940	2	<0.001
Stress	44.800	4	<0.001

Interpretation:

The one-sample chi-square results clearly show that the actual mental health responses do not follow a normal or expected pattern. Instead, they reflect significantly higher rates of depression, anxiety, and stress. Since, all values are statistically significant ($p < 0.05$), all the mental health variables are accepted thus rejecting the null hypothesis (H_0) and accepting the alternative hypothesis (H_1).

Hypothesis 2

Null Hypothesis (H_0): Job insecurity has no significant impact on emotional well-being affecting personal relationships.

Alternative Hypothesis (H_2): Job insecurity among actors significantly impacts emotional well-being affecting personal relationships.

Statements	Chi-square Value	Degrees of Freedom (df)	Significance (p-value)
Stress from your acting career often affects your ability to communicate with friends.	24.800	4	0.000
You avoid spending time with friends because of work-related worries.	15.500	4	0.004
You often feel guilty for prioritising your acting career over your personal relationships.	16.700	4	0.002
Uncertainty about your acting career has led to arguments or misunderstandings with your friends.	20.700	4	0.000
Your personal relationships are negatively affected by your focus on finding acting work.	20.000	4	0.000

Interpretation:

The one-sample chi-square results clearly show that the actual responses related to emotional well-being and personal relationships do not follow a normal or expected pattern. Instead, they reflect significantly higher levels of communication breakdowns, emotional withdrawal, guilt, and relational tension among freelance actors. Since all p-values are statistically significant ($p < 0.05$), each variable under emotional well-being is accepted, thereby rejecting the null hypothesis (H_0) and accepting the alternative hypothesis (H_1). This confirms that job insecurity has a significant negative impact on emotional well-being and personal relationships.

Hypothesis 3

Null Hypothesis (H_0): Job insecurity among actors has no significant impact on family well-being. Alternative Hypothesis (H_3): Job insecurity among actors has a significant impact on family well-being.

Statements	Chi-square Value	Degrees of Freedom (df)	Significance (p-value)
Your family has supported your decision to have a career as an actor.	77.600	4	0.000
Financial insecurities in your acting career often cause tension within your family.	24.300	4	0.000
You feel pressure from your family to switch to a more stable career.	9.100	4	0.059
You often feel like you are not meeting your family's expectations because of your acting career.	17.100	4	0.002
Job insecurity in acting has strained your ability to provide emotional or financial support to your family	21.600	4	0.000

Interpretation:

The results clearly show that job insecurity is affecting the family lives and overall well-being of freelance actors. The answers from participants were not evenly spread—they leaned heavily towards experiences like family tension, unmet expectations, and struggles with emotional or financial support. Since most of the results were statistically significant ($p < 0.05$), we can say with confidence that these effects are real and not just due to chance. So, the original idea (that job insecurity has no effect) is rejected, and we accept that job insecurity is having a serious impact on the family well-being of freelance actors.

OBSERVATIONS

The findings of this study reveal the pervasive impact of job insecurity on actors in the Mumbai-based film industry, influencing their mental health, personal relationships, and family dynamics. The results indicate a high level of job insecurity, with only 20% of respondents being regularly employed in acting projects, while 50% are occasionally employed, and 30% are unemployed but actively looking for work. This reflects the highly unstable nature of employment in the industry, consistent with previous literature that highlights the precarious conditions of freelancers in creative industries (Ganti, 2012; Gupta & Mohapatra, 2022).

Impact on Mental Health

The irregular employment pattern in Mumbai's film industry, combined with the uncertainty of securing future roles, contributes to heightened psychological distress. A majority of respondents reported experiencing severe or extremely severe levels of these mental health conditions, confirming a significant relationship between job insecurity and mental health outcomes. The Chi-square test results (p-values) for depression, anxiety, and stress are all below 0.05, confirming statistical significance which validate and are aligned with previous studies that establish job insecurity as a major stressor leading to poor psychological outcomes (Ashford et al., 1989; De Witte, 1999). The mean job security score of this study is 3.09 on a scale of 1 to 5, indicating moderate job security with considerable variation among actors. This aligns with previous findings that uncertainty in employment leads to increased anxiety and stress (Sverke et al., 2006; Llosa et al., 2018). The literature further suggests that the perception of a potential threat to job stability plays a crucial role in influencing mental health (Van Vuuren, 1990).

Impact on Personal Relationships

The results also highlight the impact of job insecurity on actors' emotional well-being and social relationships. More than 60% of respondents have reported that career stress affected their ability to communicate with friends, leading to avoidance of social interactions. The statistical significance of these findings supports prior research, which indicates that unstable work conditions often result in isolation, reduced social engagement, and emotional exhaustion (Rowland, 2009; Mackie, 2015). Additionally, actors frequently reported feelings of guilt for prioritising their careers over personal relationships. This supports findings from studies on precarious employment in the creative industry, which indicate that the pressure to secure roles often leads to work-life conflicts (Gross et al., 2018). The competitive nature of the film industry adds another layer of stress, reinforcing feelings of inadequacy and affecting interpersonal relationships.

Impact on Family Well-being

The study demonstrates how job insecurity affects family well-being. Financial instability emerged as a significant source of tension within family dynamics, with many respondents acknowledging that their uncertain career path strained their ability to provide financial and emotional support. 53% of actors have reported supporting dependents while struggling to maintain financial security, 44% of actors feel they are not meeting family expectations, and 46% reported an inability to provide adequate emotional or financial support. These findings are consistent with research on job insecurity, which highlights its spillover effects on family life (Mauno & University of Jyväskylä, 1999; Hanappi & Lipps, 2019). Despite financial struggles, a majority of 53% actors reported feeling supported by their families, suggesting that emotional support acts as a buffer against career uncertainty. However, a substantial portion of respondents expressed concerns about failing to meet family expectations, reinforcing the psychological burden of job insecurity. These results align with previous studies showing that job insecurity negatively impacts family well-being and self-esteem (Jahoda, 1982; Hobfoll, 2001).

The study highlights how job insecurity affects actors in Mumbai's film industry across all levels of Maslow's Hierarchy of Needs (1943). At the physiological level, financial instability is evident, with 50% of actors occasionally employed and 30% unemployed, forcing many to rely on secondary income. The safety need is compromised, as high job uncertainty contributes to extremely severe levels of depression (57%), anxiety (77%), and stress (39%). Social belonging is affected, with career stress straining friendships and family relationships. At the esteem level, actors experience low self-worth due to unstable careers, despite high education levels (56% graduates, 26% postgraduates). Finally, self-actualisation is hindered, as actors struggle to achieve creative fulfilment due to career uncertainty.

The study confirms that job insecurity among actors in Mumbai's film industry is a significant concern, with profound effects on mental health, emotional well-being, and family life. The findings validate previous literature on the precarious nature of freelance work, reinforcing the need for systemic support mechanisms. The psychological burden of job insecurity, combined with financial unpredictability, affects not only the actors but also their social and familial relationships, and addressing these challenges requires industry reforms, financial security measures, and mental health support.

RECOMMENDATIONS

Given the severe implications of job insecurity, the study suggests several interventions:

1. Mental Health Support

Industry-specific counselling services should be made accessible to actors to help them cope with career-related stress. Awareness campaigns about the mental health challenges of freelancing should be implemented.

2. Financial Stability Measures

Actors should be encouraged to diversify their income sources, reducing reliance on acting alone. Financial planning workshops and industry-backed savings schemes could help mitigate financial uncertainty.

3. Industry Reforms

Labour regulations should be strengthened to ensure fair wages and timely payments for freelance actors. Contractual protections should be improved to reduce exploitation and promote job stability.

4. Social Support Networks

Actors should be encouraged to engage in peer-support groups to share experiences and coping strategies. Building stronger community support within the industry could help mitigate feelings of isolation and uncertainty.

CONCLUSION

This research highlights the far reaching consequences of job insecurity in the Mumbai-based film industry, particularly among freelance actors. The findings confirm that employment instability significantly impacts mental health, personal relationships, and family well-being reinforcing previous literature on the precarious nature of freelancing in creative industries (Ganti, 2012; Sverke et al., 2006).

The results indicate that job insecurity is a key determinant of poor mental health among actors, with a majority experiencing moderate to extremely severe levels of depression, anxiety, and stress. The unpredictability of work opportunities and financial instability contribute to chronic stress, which aligns with research highlighting the psychological consequences of job uncertainty (Mohr, 2000; Menéndez-Espina et al., 2019). The study also supports the use of psychological frameworks such as Maslow's Hierarchy of Needs, which suggests that

job stability is a fundamental requirement for overall well-being (Maslow, 1943) and it is evident that uncertainty in employment disrupts all levels of well-being, from basic survival to self-actualisation.

Job insecurity not only affects individual mental health but also impacts actors' social interactions and emotional stability. The study found significant evidence that career-related stress leads to social withdrawal, guilt, and strained relationships with friends and partners. These findings correspond with literature on the gig economy, which emphasizes the emotional exhaustion and isolation experienced by freelancers (Mackie, 2015; Gross et al., 2018).

The research further highlights the spillover effect of job insecurity on family life. Many actors reported financial insecurity as a major source of family tension, with a significant proportion feeling pressure to switch to more stable careers. However, family support played a mitigating role, providing emotional resilience despite economic challenges. This reflects the findings of previous studies, which emphasize the importance of strong social and familial support in coping with job insecurity (Hanappi & Lipps, 2019).

This study underscores the urgent need for structural reforms and mental health interventions to support freelance actors navigating Mumbai's film industry. While job insecurity is an inherent challenge in the creative sector, strategic measures can alleviate its impact on well-being and career sustainability. Addressing these challenges requires industry reforms, financial planning support, and mental health interventions to promote stability and well-being in the profession.

Future research should explore long-term coping mechanisms, policy interventions, and the role of digital platforms in shaping employment opportunities for actors. A broad study across all the stakeholders of the industry such as producers, directors, writers, cinematographers, etc will also help to understand the issues of the industry as a whole. By addressing these systemic challenges, the industry can foster a healthier work environment, ensuring the sustainability of careers in acting while safeguarding mental and emotional and family well-being.

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AI-POWERED EMPLOYEE PERFORMANCE MANAGEMENT: TRANSFORMING TALENT THROUGH DATA AND INTELLIGENCE

¹Yashi Srivastava and ²Dr. (Prof) Archana Sharma¹Business Management, Amity University, Lucknow campus²Reskilling and Upskilling Strategies for Industry 4.0: A Cross-Cultural Study of Global Workforce Adaptation**ABSTRACT**

The workforce in the digital era - Industry 4.0 The emergence of the fourth industrial revolution, Industry 4.0 which refers to the fusion of cyber-physical systems, artificial intelligence, robotics and big data in manufacturing and service organisations is revolutionising the global workforce. The explosive velocity of digital transformation requires a drastic change in the skilling of the workforce, making it imperative for companies to accelerate efforts to reskill and upskill employees. This article offers cross-national research on how countries and organizations are responding to these challenges. Theories, such as trust, may shed some insight on possible reasons of different compliance data among these organizations.

INTRODUCTION

The onset of the Fourth Industrial Revolution, also referred to as Industry 4.0, is reshaping the character of work worldwide. Fueled by high-speed technological innovations like artificial intelligence (AI), machine learning, the Internet of Things (IoT), robotics, and cloud computing, Industry 4.0 is merging the physical, digital, and biological worlds. As intelligent systems and automation get embedded in production and service networks, a double challenge is faced by organizations: leveraging the new technologies' efficiencies while avoiding the displacement of labour.

Classic jobs are being reclassified or made obsolete, and wholly new types of employment are coming into being. This continuous evolution necessitates a realignment of workforce capabilities, highlighting the need for reskilling—aligning employees with new skill sets for new roles—and upskilling—enhancing current skills to adapt to changing job demands. As these requirements gain urgency, reskilling and upskilling are no longer mere choices but are increasingly becoming economic resilience, competitiveness, and individual employability strategic necessities.

Yet, the organization and implementation of successful reskilling and upskilling are significantly shaped by cultural, institutional, and socio-economic considerations. There are important variations between countries in their views on education, technological transformation, work-life balance, and employer-employee relations. For example, whereas certain countries have well-structured vocational training systems or ICT infrastructure, others face poor technology access or decentralized labor markets.

These differences highlight the importance of cross-cultural analysis to determine the forms and ways in which workforce adaptation strategies are formed and implemented within particular national contexts.

This paper delves into how four economically and culturally varied nations—Germany, Japan, India, and Brazil—are getting their workforces ready for Industry 4.0.

It analyses the impact that each nation's cultural orientation, policy environment, and industrial configuration has on its reskilling and upskilling agenda. By discovering best practices, challenges, and enablers in context, this research hopes to contribute to an understanding of how world workforces can be ready for the future of work in a manner that is inclusive, context-sensitive, and forward-looking.

In the process, the study supports a deeper understanding of global workforce development in the digital age and presents strategic advice for policymakers, business stakeholders, and education institutions to develop adaptive and resilient human capital systems.

LITERATURE REVIEW**Industry 4.0 and Disruption of Skills**

Researchers contend that Industry 4.0 creates a "skills bifurcation" (Schwab, 2017), where advanced cognitive and technical skills are increasingly valued, with routine and manual work being automated. McKinsey Global Institute (2020) research puts the number of workers worldwide who will have to change occupational categories by 2030 at 375 million.

Defining Reskilling and Upskilling:

Reskilling is about training staff for a different job function.

According to World Economic Forum (2020):

"Reskilling means providing training that allows workers to switch careers or take up entirely different job functions."

McKinsey & Company (2020) defined reskilling as:

"Reskilling is the process of learning new skills to perform a different job or function."

OECD (2019) defined it as:

"Reskilling is the process of developing new skills for a different job or occupation, often in response to labour market disruptions."

Upskilling is the improvement of the existing skill base in order to match changing job demands.

According to World Economic Forum (2020):

"Upskilling refers to teaching employees new skills to help them advance within their current job or industry."

Deloitte (2019) defined upskilling as:

"Upskilling is about equipping employees with the competencies they need to remain in their current roles and perform them more effectively."

McKinsey & Company (2020) said:

"Upskilling involves building on existing skill sets to enhance performance and adaptability in a current role."

Cultural Dimensions and Workforce Development; Hofstede (1984) cultural dimensions highlight that national culture influences learning attitudes, uncertainty, and authority and all these influence the way societies engage with lifelong learning.

The Future of Jobs Report 2023 of the World Economic Forum provides an in-depth analysis of the way in which international labour markets are evolving because of technological, environmental, and socio-economic changes. Through a survey of 803 companies in 27 industries and 45 economies, the report finds that 23% of occupations will shift by 2027, with 69 million new jobs being created—mainly in green industries, education, and digital trade— while 83 million current jobs, particularly in administration and clerical functions, could be lost. Technological changes, especially in AI, big data, and cloud computing, are foremost among these disruptors, but only robotics are expected to lead to net job losses. The report added that 44% of employees will require reskilling, with the top skills required being analytical thinking, creative thinking, and digital literacy. Firms are spending more on training and on-the-job learning to bridge skill gaps. Although the green transition creates opportunities for jobs, skill shortages and uneven recovery from pandemic effects—particularly in developing economies and among groups vulnerable to it like women and youth—are major challenges. Finally, the report highlights the imperative need for joint action between businesses, governments, and schools to drive inclusive growth and build a resilient, future-fit workforce.

Germany modernizes its VET provision further: renewing curricula through employer- union cooperation, improving digital infrastructure and teacher qualifications (e.g., "Vocational schools 4.0"), and promoting lifelong learning through initiatives such as the National Skills Strategy, InnoVET flagship projects, and compulsory continuing training mentors.

Closer integration with higher education, international mobility objectives (20 % benchmark), and simplified recognition of foreign qualifications are focus areas for the BMBF to fight skilled-labour shortages. Overall, the report highlights Germany's dual-system strength, solid employment linkages, and forward-looking reforms targeting digitalization, inclusivity, and lifelong upskilling, making its VET system responsive and future-oriented.

The International Labour Organization's "Skills for a Greener Future" (2021) report describes the imperative of reskilling and upskilling as economies make the shift towards sustainability. Drawing on 32 country studies, it concludes that although green policy produces more jobs in aggregate, workers, particularly those in carbon-intensive sectors, will have to learn new skills to adjust. The report is insistent that marginal groups can be left behind unless social protection systems and inclusive training are put in place.

It requests harmonized action by governments, employers, and educators to reconcile skills development with environmental objectives, making the statement of a fair and equitable green transition.

The report of the Government of India's Skill India Mission (2020) emphasizes initiatives for training and re-skilling more than 40 crore individuals to address industry needs. Initiated in 2015, the mission is highlighted by flagship programs such as PMKVY, Skill Loan Scheme, and Jan Shikshan Sansthan. As of 2021, more than 2.5 crore persons were trained across industries. The mission is aimed at increasing employability, entrepreneurship, rural and women candidates, and bridging digital and technical skills. While it has widened access to training across the country, job placements, infrastructure, and awareness remain challenges.

The McKinsey Global Institute's "The Future of Work in the Age of Automation" (2020) analyzes how AI and automation are transforming global labor markets. As much as 30% of work activities might be automated by 2030, with most jobs being partly transformed instead of replaced. Between 75 to 375 million workers could be forced to change occupations and reskill. While there will be reduced demand for low-level physical and routine cognitive tasks, there will be more demand for sophisticated tech abilities, emotional intelligence, and cognitive skills of higher order. While net employment growth is anticipated, it might also create wage polarization. The report calls for innovative reskilling, continuous learning, and more robust social protection schemes in order to effect a smooth and inclusive transition of the workforce.

Klaus Schwab's *The Fourth Industrial Revolution* (2017) examines how new technologies—artificial intelligence, robotics, biotechnology, and the Internet of Things—are reshaping industries, societies, and human existence at a rate never seen before. While past industrial revolutions changed the way things work, this revolution is characterized by the intersection of physical, digital, and biological systems.

Schwab stresses that this change is taking place exponentially and will influence every conceivable aspect of our work and living.

He advocates for nimble governance, moral leadership, and inter-sector collaboration to ensure that technology is human-cantered and benefits the greater good.

Geert Hofstede's *Culture's Consequences: International Differences in Work-Related Values* (1984) is the seminal book in cross-cultural research, examining how national culture affects workplace values and behaviour. From a comprehensive survey of IBM workers in more than 40 nations, Hofstede developed the important cultural dimensions—power distance, individualism vs. collectivism, uncertainty avoidance, masculinity vs. femininity, and long-term vs. short-term orientation. These dimensions account for the way individuals from various societies view authority, work motivation, risk, and cooperation. The text highlights the fact that cultural differences need to be understood in order to achieve effective international management, communication, and organizational performance in today's globalized world.

Georgian academic Ineza Gagnidze's "The Role of the Education System for Responding to the Challenges of Industry 4.0" (2020) highlights the extent to which the Fourth Industrial Revolution necessitates a fundamental transformation in education. Focusing on Georgia as a case study, Gagnidze contends that in order to adjust to Industry 4.0, education systems, and particularly universities, need to promote better cooperation between academia, industry, and government.

She emphasizes the emergence of entrepreneurial universities that facilitate reskilling, commercialization, and innovation through the so-called "triple helix" model. The most important reforms are revising curricula, improving practical lab work, and creating interdisciplinary project-based learning. The research emphasizes that digital, technical, social, and collaborative skills are needed, and that educational institutions have to adopt iterative, authentic task design to equip students for fast technological evolution.

The authors point out that reskilling and upskilling current employees is cheaper than recruitment. Organizations that invest in ongoing workforce development realize better employee skills, greater retention, and more revenue. As technology changes, keeping workers' skills up to date is critical to both individual career endurance and business competitiveness. Effective strategies involve customized learning journeys, utilizing digital training technologies (such as adaptive systems and VR), and creating a culture of continuous learning. It not only enables firms to remain agile in fluctuating markets but also enables workers to develop and evolve.

Díaz and Halkias (2021) stress the necessity for business schools to reimagine executive education to equip leaders for the Fourth Industrial Revolution (4IR).

Their overview points out that prevailing models are not enough, and urges the development of novel, industry-connected education systems.

These systems must embed practical projects, lifelong learning, and partnership with industry and government. The authors believe that such strategies can align leadership development more effectively with changing

market demands and global sustainability objectives, making business schools major drivers of social and economic advancement.

Mishra and Painoli (2024) discuss the ways in which higher education human resource practices during the COVID-19 pandemic evolved to aid employee upskilling through focused learning and development (L&D) interventions. The research identifies that the transition to online platforms and hybrid working necessitated immediate skills gaps among staff and faculty, leading institutions to spend on virtual training, digital literacy, and adaptive learning models. The authors stress strategic HR planning, leadership commitment, and learning culture to develop future readiness and resilience.

Their conclusion is that effectively designed L&D initiatives can boost institutional performance and employees' ability to adapt during a crisis situation.

Mayer (2024) examines leaders' views of leadership and skill development during the Fourth Industrial Revolution (4IR). Qualitative interviews found that leaders identify adaptability, emotional intelligence, digital competencies, and ongoing learning as key skills for the 4IR age. They advocate for transformational leadership to drive innovation, teamwork, and ethical decision-making. Mayer concludes that organizations need to invest in leadership development programs that incorporate both technical and soft skills to successfully meet the quick changes triggered by digital and technological developments.

METHODOLOGY

To study how various nations are addressing reskilling and upskilling in the Industry 4.0 context, the research utilizes a qualitative cross-cultural comparative approach. Participants from various nations are sought to explore the patterns, variations, and culturally contextualized practices affecting workforce development strategies in different nations.

Research Approach:

A comparative case study approach was used to facilitate an in-depth examination of reskilling and upskilling initiatives in four nations—Germany, Japan, India, and Brazil. These nations were selected purposefully based on their divergence in:

Technological maturity.

Cultural dimensions (on the basis of Hofstede's model) Economic development status Institutional support for training the workforce

This method facilitates an examination of the impact of cultural, economic, and political variables on skill development programs and their relative effectiveness.

DATA COLLECTION METHODS

The research employed a multi-source data triangulation strategy that encompasses:

a) Secondary Data Analysis

Reports and datasets by international organizations such as:

World Economic Forum (WEF)

International Labour Organization (ILO)

Organisation for Economic Co-operation and Development (OECD)

National skill development policies and labour ministry reports

Country-specific workforce development strategies (for example, Germany's BMBF, India's NSDC)

b) Documentary Analysis:

Scholarly journals, think tank reports, and white papers of governments Corporate training paradigms and curriculum structures

c) Commentary from Experts

Addition of qualitative analysis and commentary by industry experts, policy makers, and educationists published in interviews, webinars, and conference proceedings.

These countries were selected for their varying levels of technological maturity and cultural orientation.

FINDINGS AND DISCUSSION

Germany: Dual Vocational Training and Industry Cooperation

Germany's workforce adaptability success stems primarily from its dual vocational training scheme, which integrates classroom learning with work-based training. Industry- educational institution cooperation provides for ongoing curriculum revision according to current technological requirements.

Cultural Insight: High uncertainty avoidance and low power distance facilitate systematic planning and participatory learning.

Japan: Lifelong Employment and Internal Training

Japanese companies make substantial investments in in-house rotations and training schemes.

The lifelong employment culture facilitates long-term investment in people development. Hierarchy, however, can at times hinder quick skill transformation.

Cultural Insight: Long-term orientation and collectivism enable steady upskilling but may result in lagging innovation adoption.

India: Digital Skilling Through Public-Private Partnerships

India's massive and youthful workforce is being trained through national programs like Skill India, in partnership with tech giants (e.g., Google, Microsoft). However, skill mismatch and regional disparities remain challenges.

Cultural Insight: High power distance and moderate individualism require blended learning models that balance authority and autonomy.

Brazil: Informal Sector Challenges and Innovation Labs

Brazil has used innovation labs and community training models to target informal sector workers. Promising pilots exist but institutional instability hinders scalability.

Cultural Insight: Low institutional trust and high uncertainty avoidance require grassroots and community-focused training programs.

COMPARATIVE ANALYSIS

Country Strategy Focus Institutional Support Cultural Facilitators Key Challenges

Germany Dual education Strong public-private cooperation High structure orientation Integration of migrant labour Japan Internal rotation Corporate loyalty Long-term orientation Inflexibility in change India National skilling PPPs & digital tools Youth demographics Tasking Infrastructure & inequality Brazil Innovation labs Local initiatives Community bonds Governance & funding.

The next section brings together the conclusions from country case studies to reveal overarching trends, individual national strategies, and the impact of cultural and institutional factors on workforce development for Industry 4.0.

Comparative Analysis in tabulation form:

Country	Strategy Focus	Institutional Support	Cultural Facilitators	Key Challenges
Germany	Dual education	Strong public-private collaboration	High structure orientation	Integration of migrant labor
Japan	Internal rotation	Corporate loyalty	Long-term focus	Inflexibility in change
India	National skilling	PPPs & digital tools	Youth demographics	Infrastructure & inequality
Brazil	Innovation labs	Local initiatives	Community bonds	Governance & funding

STRATEGIC ORIENTATION AND IMPLEMENTATION MODELS

Every country represents a particular strategic approach to workforce transformation, guided by its socio-economic agenda and industrial advancement:

Germany promotes a dual education system based on its traditional partnership between industry and vocational schools. Anticipatory upskilling is emphasized, with curricula changing in tandem with industry needs, especially in advanced manufacturing.

Japan favours internal corporate training and incremental reskilling through long-term employment approaches. The approach is loyalty and in-house skill building driven rather than speedy reskilling for market flexibility.

India uses digital platforms and public-private partnerships (PPPs) to expand national skilling programs such as Skill India. With a large youth and diversity workforce, the approach emphasizes accessibility and inclusion, especially in new technologies.

Brazil uses a bottom-up approach with innovation nodes, civil society, and regional training centres to reach disadvantaged groups, particularly the informal sector. The strategy is experimental and adaptive but not centrally coordinated.

These diverse approaches highlight the importance of contextual design, where one-size-fits-all solutions are unlikely to succeed.

ROLE OF INSTITUTIONAL SUPPORT AND GOVERNANCE

The robustness and coordination of institutional ecosystems directly impact the scalability and sustainability of reskilling initiatives:

Germany benefits from strong inter-ministerial coordination, with the Federal Ministry of Education and Research (BMBF) playing a central role in aligning educational outcomes with industrial needs. This model ensures accountability and long-term commitment.

The private sector in Japan dominates the majority of upskilling efforts. Government support is modest but enabling, mainly in terms of tax breaks and policy enablement.

India has a heavily centralized but digitally empowered framework within the Ministry of Skill Development and Entrepreneurship (MSDE). Even so, the sheer volume of population and geographical inequalities complicate the effectiveness of implementation.

Brazil exhibits weak central control and dispersed policy implementation, frequently using non-governmental and local institutions. In spite of this, innovation at the base level fills necessary gaps, particularly among underprivileged communities.

Therefore, robust institutional systems are commonly associated with more efficient, long-term skill-building programs.

NATIONAL CULTURE INFLUENCE

Culture performs an unobtrusive yet important role in determining how societies react towards educational reforms and technological disruption:

Low power distance and high uncertainty avoidance in Germany allow structured, open skill development environments where workers are encouraged to initiate things.

The collectivist and long-term orientation of Japan induces strong corporate allegiance, which makes workers more amenable to company-initiated training schemes but at the expense of labour mobility from the outside.

India's high power distance and nascent individualism present a double challenge: while digital learning is adopted, teacher-guided, hierarchical models remain prevalent. The key is to marry digital resources with human guidance.

Brazil's high uncertainty avoidance and low institutional trust support dependence on models of community-guided learning, particularly in the informal labor market. Peer-to-peer learning and local content appeal more to the population than standardized certifications.

Understanding these cultural dynamics is essential when creating training interventions that aim for real participation and sustained behavioural change.

Scalability and Digital Readiness

The capacity to scale workforce development initiatives relies significantly on digital infrastructure and adoption of technology:

Germany and Japan have high digital infrastructure, and developed industrial bases, allowing for targeted high-tech skilling (e.g., robotics, mechatronics).

India has seen considerable advances in digital access (e.g., Digital India Initiative) so that mobile-based skilling now reaches rural areas. Connectivity and quality, however, still are concerns in remote areas.

Brazil also experiences digital imbalances between urban and rural areas. Internet access and digital resources are not equally present, limiting reach and consistency of training quality.

Therefore, nations with digital infrastructure parity have a considerable edge in being able to provide scalable and accessible upskilling programs.

Main Challenges and Opportunities

There are distinct challenges as well as opportunities for each country in executing successful workforce transformation initiatives and respective opportunities:

Germany needs to resolve integration problems with migrant workers and mid-career career retraining of older workers.

Japan's traditional corporate culture can slow down the quick uptake of new-age skills and inter-industry mobility. Yet, its aging population presents fresh opportunities in Health-tech and care robotics.

India has the challenge of skilling tens of millions of first-time employees, most of whom are from rural, non-English-speaking backgrounds. The potential is to use multilingual digital platforms and local-language content.

Brazil has to contend with governance and funding irregularities, but its community-based initiative and lab-based innovation potential can be turned into inclusive, scalable models.

Together, these findings highlight that there is no universal reskilling model applicable to all situations. Yet, localized innovation, cultural fit, and technological infrastructure are the universal enablers for successful adaptation.

6. CONCLUSION

Embrace Culturally Adaptive Models: Workforce approaches need to match local values and learning habits.

Create Public-Private Partnerships: Cross-sector partnership guarantees relevance and scalability.

Invest in Digital Infrastructure: Particularly vital for developing economies with rural segments.

Emphasize Lifelong Learning Mindsets: Encourage learning outside formal school systems.

Employ Data-Driven Skills Forecasting: AI and analytics have the ability to predict future workforce requirements.

Industry 4.0 calls for a comprehensive rethink of human capital approaches. Cross-cultural findings show that as the technological target is the same, the routes to preparedness differ considerably by environment. Countries and organizations that introduce cultural intelligence to their upskilling and reskilling initiatives have a better chance of success in the digital economy.

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AI-DRIVEN PERSONALIZATION IN E-COMMERCE: A COMPETITIVE ADVANTAGE THROUGH DIGITAL MARKETING

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ABSTRACT

Artificial Intelligence (AI) is playing a major role in transforming how e-commerce businesses reach and serve their customers. Today, people expect online shopping experiences that feel personal—like seeing product suggestions based on their preferences, getting real-time answers from chatbots, or receiving special discounts tailored just for them. This research explores how AI tools such as recommendation engines, chatbots, predictive analytics, and dynamic pricing help online businesses grow, increase customer satisfaction, and stay ahead of their competitors.

*To understand the real impact of these technologies, I used both **primary data** and **secondary data** (from industry reports, research papers, and online publications). The results show that when businesses use AI effectively, they can better understand customer behavior, make smarter marketing decisions, and offer more relevant experiences to shoppers. This leads to higher sales, stronger brand loyalty, and long-term growth.*

However, the study also points out some challenges, such as concerns about data privacy, high costs of AI tools, and the need for skilled professionals. Based on these insights, the paper provides practical recommendations for e-commerce companies that want to adopt AI-powered personalization in a responsible, ethical, and effective way.

Keywords: Artificial Intelligence, Personalization, E-Commerce, Digital Marketing, Customer Experience, Predictive Analytics, Competitive Advantage.

1. INTRODUCTION

In the age of digital commerce, customers expect tailored experiences. Generic marketing is no longer effective. AI technologies enable marketers to deliver personalized content, product recommendations, and user journeys that are tailored to individual behavior, preferences, and purchase history. This research examines how AI-powered personalization strategies are reshaping the e-commerce landscape and driving business growth.

In today's digital-first world, shopping online has become more than just a convenience—it's a daily part of life for millions of people. With so many websites and brands competing for our attention, customers now expect more than just a wide selection or fast delivery. They want experiences that feel personal, relevant, and tailored to their needs. That's where Artificial Intelligence (AI) steps in.

AI is transforming how businesses interact with their customers by helping them offer smarter, more personalized experiences. From suggesting the right products to sending customized offers or providing real-time help through chatbots, AI is changing the way digital marketing works in e-commerce. Instead of using one-size-fits-all advertisements, companies can now use customer data to understand preferences, habits, and shopping behavior and respond with exactly what the shopper wants to see.

Personalization powered by AI is not just a tech trend; it's a powerful business strategy. Companies that adopt it early are seeing better customer engagement, higher sales, and stronger brand loyalty. Platforms like Amazon, Netflix, and Flipkart have already shown how AI can be used to make every customer feel like the experience was made just for them.

This research aims to explore how e-commerce businesses are using AI to create personalized digital marketing strategies and how these strategies help them grow and gain a competitive edge. It looks at real-world examples, industry insights, and feedback from online shoppers to understand the impact of AI-driven personalization. The study also considers some important questions: How much do consumers really like personalization? Does it affect their buying decisions? Are there any downsides, like privacy concerns?

By combining real data from customers and businesses with existing research, this paper takes a closer look at how personalization through AI is reshaping the future of online shopping—and why it's becoming essential for success in the e-commerce world.

2. OBJECTIVES OF THE STUDY

- To analyze the role of AI in delivering personalized e-commerce experiences.

- To assess the impact of personalization on consumer engagement and sales growth.
- To examine how digital marketers can strategically adopt AI for competitive advantage.
- To explore the challenges of privacy, ethics, and algorithmic bias in personalization.

3. LITERATURE REVIEW

1. Market Growth of AI in E-Commerce

Artificial Intelligence (AI) is changing the way online shopping works. More and more e-commerce companies are using AI to give customers better, faster, and more personal shopping experiences. Tools like smart product suggestions, chatbots, and customized ads are helping businesses understand what customers want and offer it to them at the right time. According to Statista (2024), the AI market in e-commerce is expected to grow to around USD 24.5 billion by 2027.

Experts from Gartner (2023) say that by 2025, over 80% of customer interactions in online shopping will be handled by AI. This means most of the time when customers talk to a brand online, it will be through AI-powered systems. In India too, AI is gaining popularity. A report by NASSCOM and Zinnov (2023) says that more than half of Indian online businesses are using AI to improve how they market and sell their products.

2. Personalization and Customer Engagement

Today's online shoppers expect more than just a variety of products—they want websites to understand their tastes and show them what they actually like. That's where AI-powered personalization plays a big role. It helps e-commerce platforms show each customer products and offers that match their preferences, making shopping easier and more enjoyable.

A report by McKinsey (2023) shows that using AI for personalization can increase sales by **20% to 30%**, because customers are more likely to buy things that feel relevant to them. Similarly, Salesforce (2022) found that **73% of customers** expect businesses to know what they like and offer personalized experiences. When websites do this well, customers are more satisfied and more likely to come back again.

3. Impact of AI Recommendations

Have you ever noticed how online shopping sites seem to “know” what you like? That's because of AI-powered recommendation systems. These systems look at what you've searched for, what you've bought before, and even what similar people like—then suggest products just for you. It makes shopping feel easier and more personal.

This approach really works. For example, Amazon says that more than **35% of its sales** come from product recommendations made by AI. That means a big part of their success comes from showing people the right products at the right time. Even platforms like Netflix (which uses AI to suggest shows and movies) show how powerful these systems can be—**80% of what people watch** comes from recommendations.

4. AI Chatbots and Customer Support

AI chatbots are helping businesses save a lot of time and money by handling customer questions automatically. According to IBM (2022), companies using AI chatbots can reduce their customer service costs by up to **30%**. These bots can answer common questions, assist with orders, and solve problems without needing a human agent.

Juniper Research (2023) predicts that by 2025, AI chatbots will help the global e-commerce industry save over **USD 11 billion** every year by speeding up service and reducing the need for large support teams.

5. Consumer Behavior Toward Personalization

People generally respond well to personalization—if it's done right. A report by Segment (2023) found that **69% of consumers** like getting personalized offers, as long as they've shared their data willingly. Interestingly, **49% of people** said they've made unplanned or impulse purchases just because of AI-driven product suggestions.

Another report by Epsilon (2022) found that **80% of consumers** are more likely to buy from brands that personalize their shopping experience.

6. Email Marketing and Personalization

Emails tailored to the customer's interests are much more effective than generic ones. According to Invesp (2022), **personalized emails** generate **six times more sales** than non-personalized ones. This proves that using AI to send targeted messages can significantly boost online sales and improve marketing results.

7. Indian Market Insights

In India, e-commerce is growing rapidly—and AI is playing a big part in that growth. As per **IAMAI & Kantar (2023)**, India's online shopping industry is expected to grow to **USD 200 billion by 2026**, with AI tools being a major contributor.

Indian companies like **Flipkart** and **Nykaa** are already using AI to make the shopping experience smoother. Flipkart uses AI that understands the context of what users are searching for, especially during festive sales, to show better results on its homepage.

Nykaa has seen a **25% increase in repeat customers** by recommending beauty products based on things like skin tone, past purchases, and browsing behavior.

8. Privacy and Ethical Challenges

Even though AI brings many benefits, not everyone is comfortable with how their data is used. According to **Harvard Business Review (2021)**, **41% of consumers** feel uneasy when companies seem to know too much about them. This raises concerns about privacy and data misuse.

To address these issues, the **Indian Digital Personal Data Protection Act (2023)** stresses that companies must use customer data in a transparent and ethical way—especially when AI is involved in making personalized suggestions or decisions.

4. SECONDARY DATA

Artificial Intelligence (AI) has emerged as a powerful tool in reshaping e-commerce strategies, especially in the area of customer personalization. Various secondary sources such as industry reports, business studies, and company insights show that leading e-commerce platforms are using AI technologies to enhance customer experiences. Through tools like recommendation engines, virtual assistants, and predictive algorithms, businesses are able to tailor their services to individual shopper preferences. These technologies help in creating more relevant content, product suggestions, and marketing messages, making the shopping journey smoother and more engaging.

Globally, companies like Amazon and Netflix have set the benchmark for AI-driven personalization. Amazon's entire shopping experience—from homepage suggestions to dynamic pricing is guided by AI systems that track user behavior and purchase history. Netflix, although a streaming platform, serves as a model for how AI can understand viewing patterns to offer tailored recommendations. In the e-commerce space, AI is being used to reduce product discovery time, improve customer satisfaction, and encourage repeat purchases through customized user journeys.

In India, several e-commerce platforms have also adopted AI to strengthen their market position. Flipkart has implemented machine learning to personalize homepage content, search results, and promotional banners, especially during large-scale shopping events. Nykaa uses AI to suggest beauty products that match customers' skin tones, past purchases, and browsing behavior. Meesho, a growing social commerce platform, leverages AI for catalog curation and personalized feeds, helping sellers reach the right customer segments.

These examples reflect how AI is not limited to multinational giants—it is actively shaping the strategies of homegrown Indian startups as well.

Secondary sources also draw attention to the increasing focus on responsible AI use. As personalization relies heavily on consumer data, there is growing concern about transparency, ethical data collection, and user consent. Reports and policy documents stress the need for businesses to use AI in a way that protects privacy while still offering value. This balance between innovation and ethics is now considered critical for long-term success in AI-driven digital marketing.

5. RESEARCH METHODOLOGY

- **Design:** Descriptive and analytical
- **Primary Data:** Primary data was collected using a **structured questionnaire** administered to **52 respondents**, primarily online shoppers who have interacted with AI-powered features such as product recommendations, chatbots, and personalized offers on e-commerce platforms.
- **Sampling Technique:** A **convenience sampling** method was adopted due to accessibility and feasibility constraints. Respondents were selected based on their availability and willingness to participate in the study, particularly those with regular experience in online shopping.

- **Data Analysis:** Responses from the structured questionnaire were analyzed using the **percentage method** to identify trends and consumer preferences. Additionally, **thematic analysis** was used to interpret open-ended responses and interview insights, allowing for qualitative understanding of user perceptions regarding AI-driven personalization.
- **Secondary Sources:** To complement the primary data, extensive secondary research was conducted. Sources included:
 1. **Academic journals** on digital marketing, AI, and e-commerce
 2. **Industry reports** from consulting firms.
 3. **Global databases** such as those from the **World Bank** and **United Nations**, especially regarding AI and digital transformation
 4. **Government of India policies** and reports on digital innovation, e-commerce, and the startup ecosystem
 5. **Company whitepapers and studies** from leading **EdTech and e-commerce platforms** (e.g., Amazon, Flipkart, Meesho) showcasing the application of AI in customer personalization.

6. SIGNIFICANCE OF THE STUDY

This study is significant in the context of today's rapidly evolving digital economy, where e-commerce platforms face intense competition and shifting consumer expectations. As artificial intelligence (AI) becomes more sophisticated, its integration into digital marketing strategies particularly through personalized content, recommendations, and customer engagement offers e-commerce businesses a powerful tool to differentiate themselves.

The findings of this research will provide valuable insights into how AI-driven personalization enhances customer experiences, fosters loyalty, and improves conversion rates, thereby offering a competitive edge in the crowded digital marketplace. For **e-commerce businesses**, the study will serve as a strategic guide for implementing AI tools effectively in their digital marketing efforts.

For **digital marketing professionals**, this study will highlight best practices, potential challenges, and the evolving role of AI in crafting data-driven marketing strategies. It also contributes to the academic and practical understanding of consumer behavior in the age of AI, offering a foundation for future research and technological development in the field.

Furthermore, the research holds policy-level significance by shedding light on ethical considerations, data privacy issues, and the need for responsible AI adoption in e-commerce. This makes the study relevant not only for businesses and marketers but also for regulators and technology developers.

7. QUESTIONNAIRE FOR RESPONDENTS - AN INSTRUMENT FOR THE STUDY

https://docs.google.com/forms/d/e/1FAIpQLSeQjH7uo27_fFj7ITYbMW0dviEht1ok1UImdWpsjWsKr7zwyQ/viewform?usp=header

SECTION A: DEMOGRAPHIC INFORMATION

1. **Age:**
☐ Below 18 ☐ 18–25 ☐ 26–35 ☐ 36–45 ☐ 46 and above
2. **Gender:**
☐ Male ☐ Female ☐ Other
3. **Occupation:**
☐ Student ☐ Professional ☐ Business ☐ Homemaker ☐ Other
4. **How often do you shop online?**
☐ Daily ☐ Weekly ☐ Monthly ☐ Rarely

SECTION B: ONLINE SHOPPING HABITS

5. **Which e-commerce platforms do you use regularly? (Select all that apply)**
☐ Amazon ☐ Flipkart ☐ Nykaa ☐ Meesho

6. **Have you noticed product recommendations on these platforms based on your previous purchases or searches?**

☐ Yes ☐ No

7. **Do you interact with chatbots during your shopping experience?**

☐ Frequently ☐ Occasionally ☐ Never

8. **Do you feel these recommendations are relevant to your interests?**

☐ Very Relevant ☐ Somewhat Relevant ☐ Not Relevant

SECTION C: PERCEPTION OF PERSONALIZATION

9. **Do personalized suggestions increase your chances of buying a product?**

☐ Yes, significantly ☐ Sometimes ☐ No difference

10. **How would you rate your overall experience with AI-based personalization?**

☐ Excellent ☐ Good ☐ Average ☐ Poor

11. **What kind of personalization do you value most?**

☐ Product Recommendations

☐ Discounts/Offer Based on Browsing

☐ Email/SMS Alerts

☐ Dynamic Pricing

☐ Others:

SECTION D: CONCERNS AND TRUST

12. **Are you concerned about how your data is collected and used for personalization?**

☐ Yes ☐ No ☐ Not Sure

13. **Do you trust e-commerce platforms to use AI responsibly?**

☐ Yes ☐ No ☐ Maybe

14. **Would you prefer less personalization if it meant better data privacy?**

☐ Yes ☐ No ☐ Maybe

SECTION E: PREFERENCES AND SUGGESTIONS

15. **Which type of personalization do you prefer most?**

☐ Product suggestions

☐ Discount alerts

☐ Search result customization

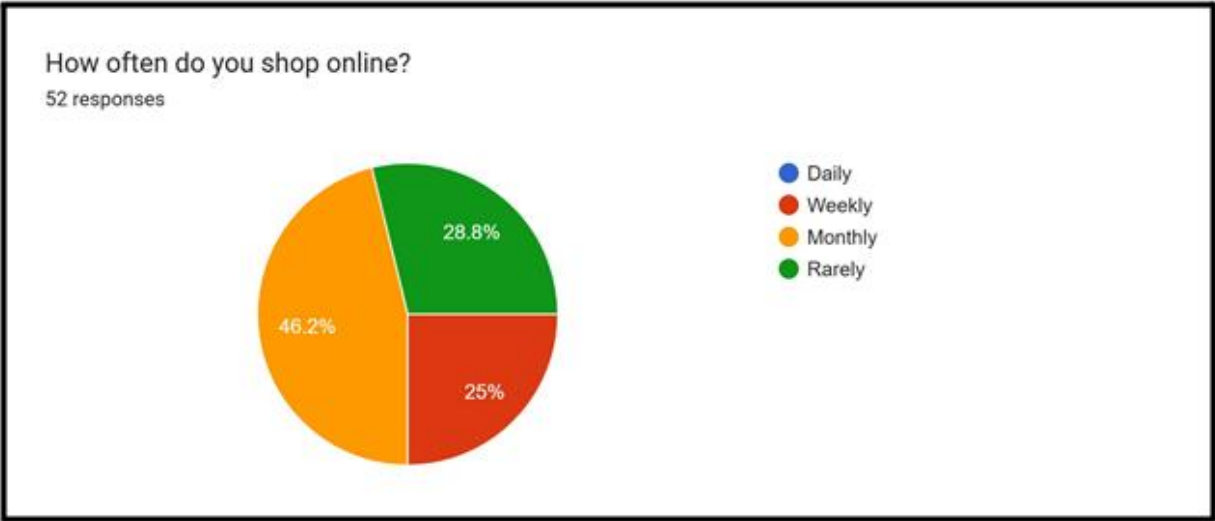
☐ Personalized emails/SMS

☐ Chat support

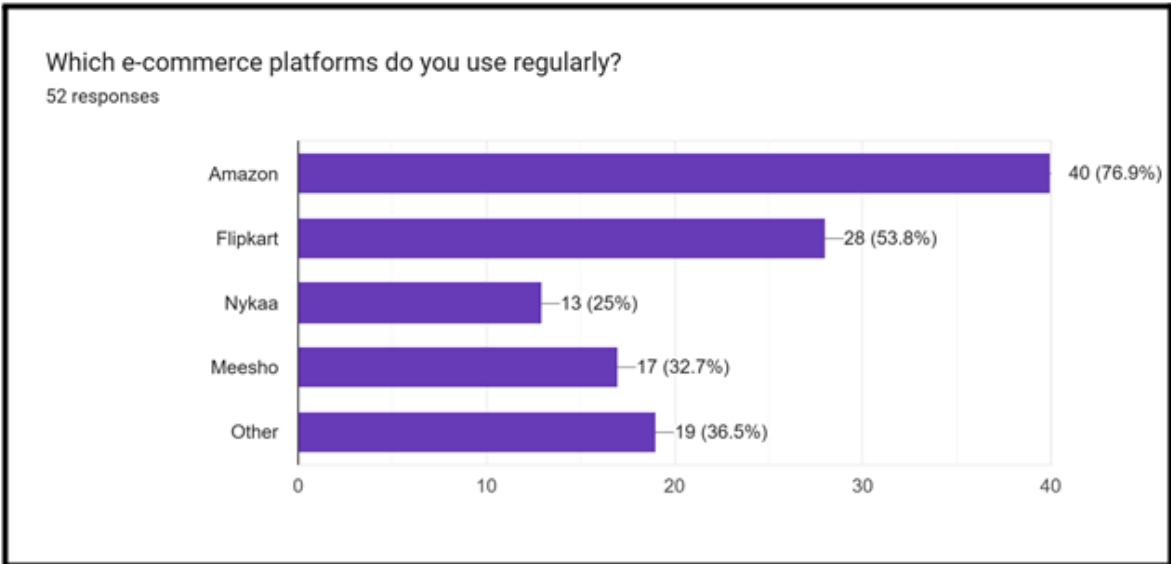
15. **In your opinion, how can AI-driven personalization be improved in e-commerce?**

8. PIE-CHART OUTPUT OF FEEDBACK FROM RESPONDENTS ON EACH QUESTIONNAIRE :

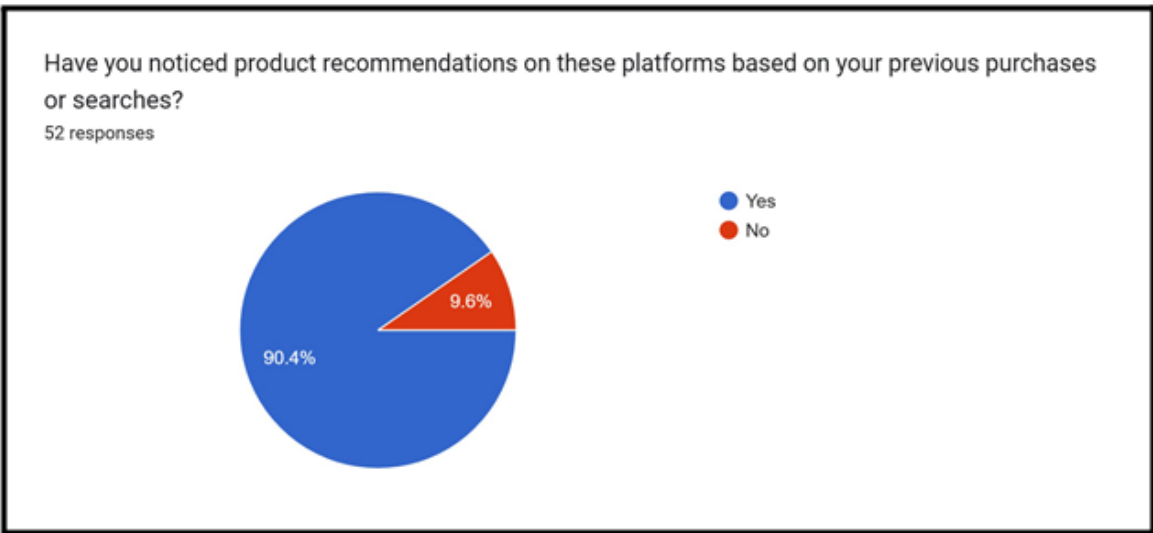
1. How often do you shop online?



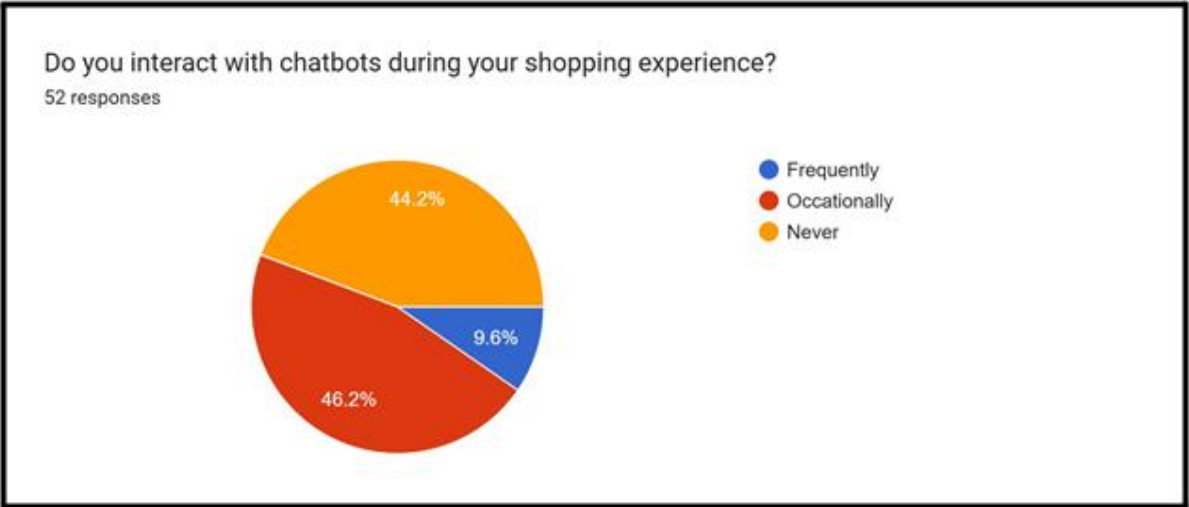
2. Which e-commerce platforms do you use regularly?



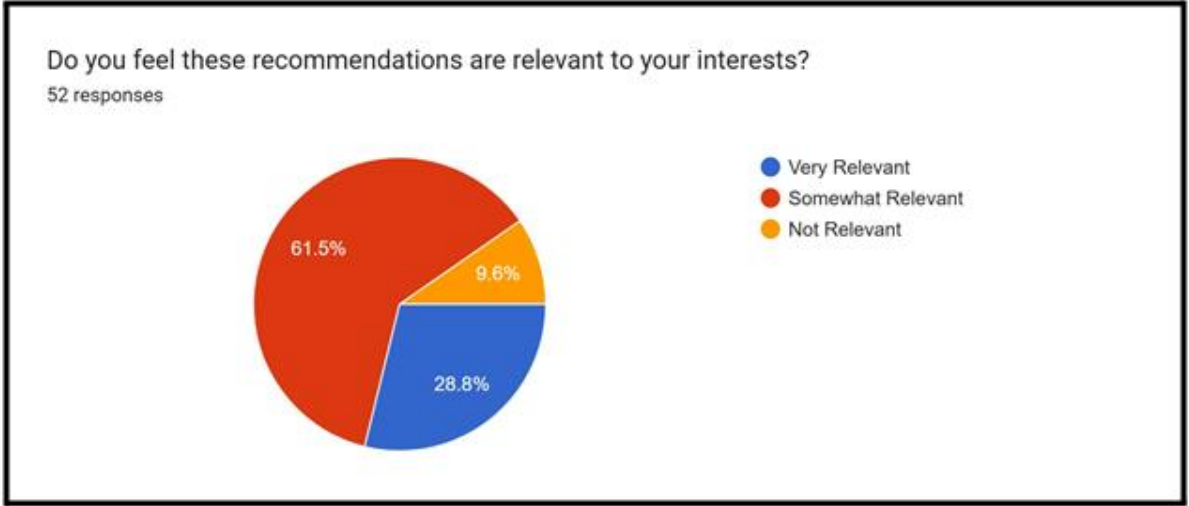
3. Have you noticed product recommendations on these platforms based on your previous purchases or searches?



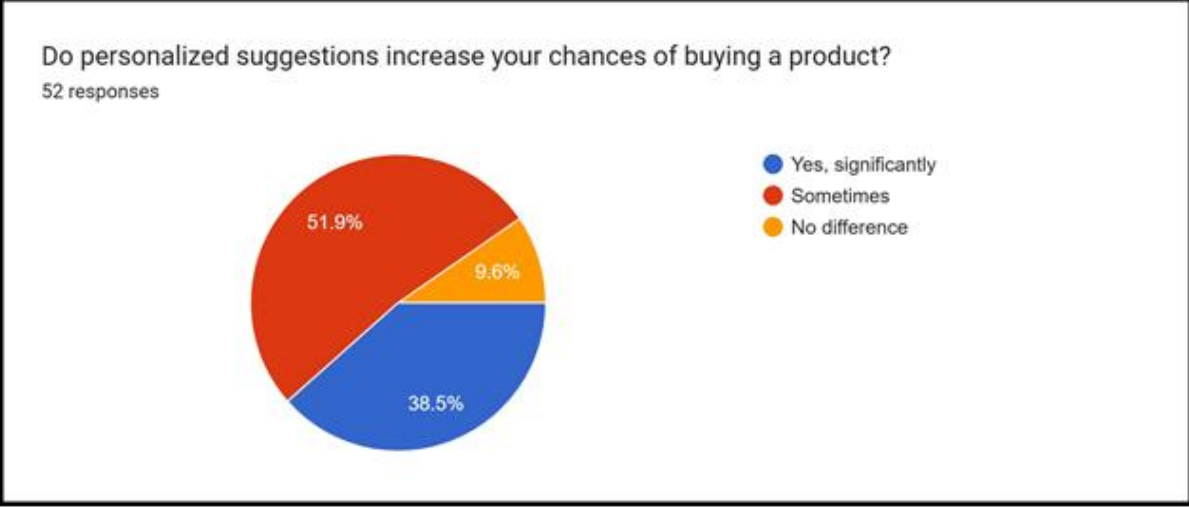
4. Do you interact with chatbots during your shopping experience?



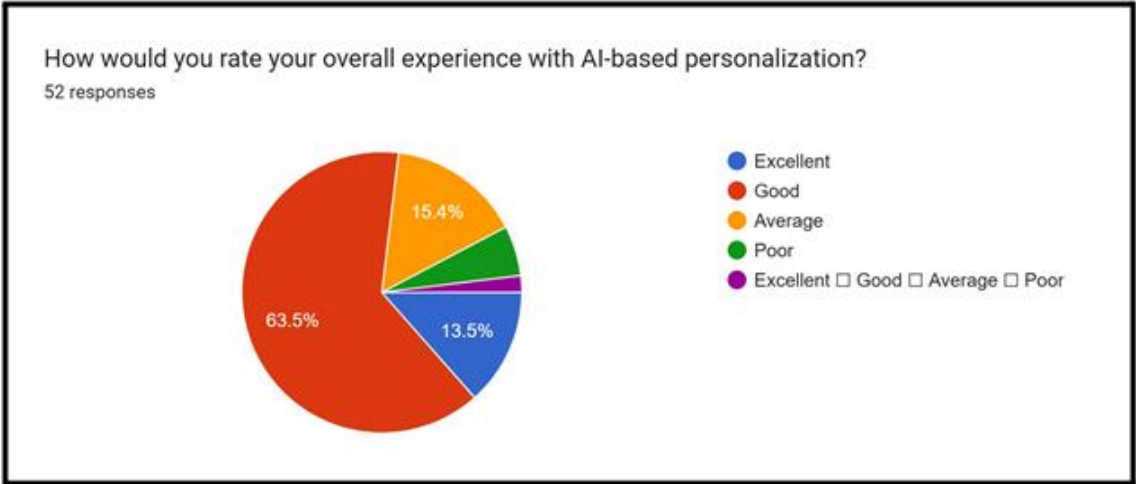
5. Do you feel these recommendations are relevant to your interests?



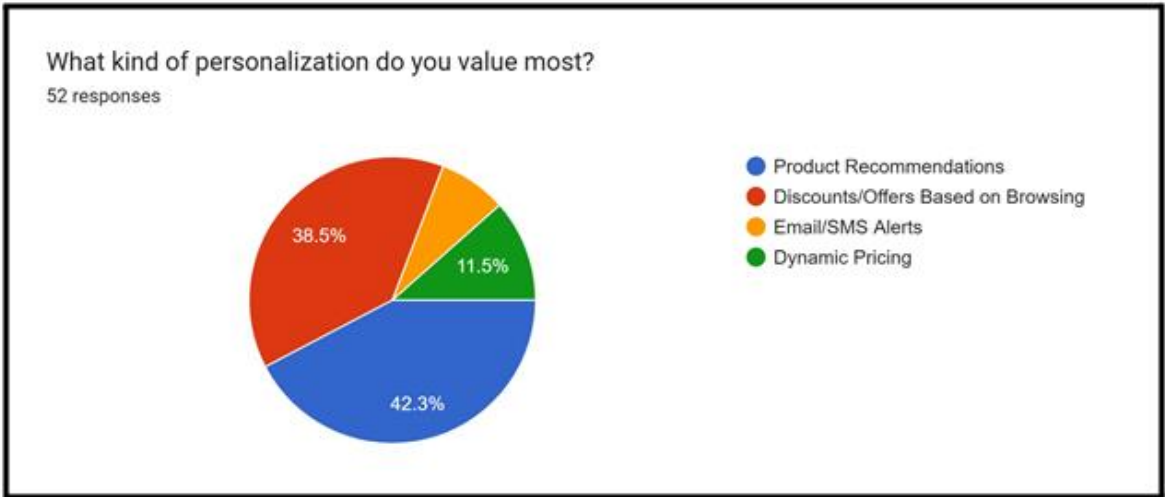
6. Do personalized suggestions increase your chances of buying a product?



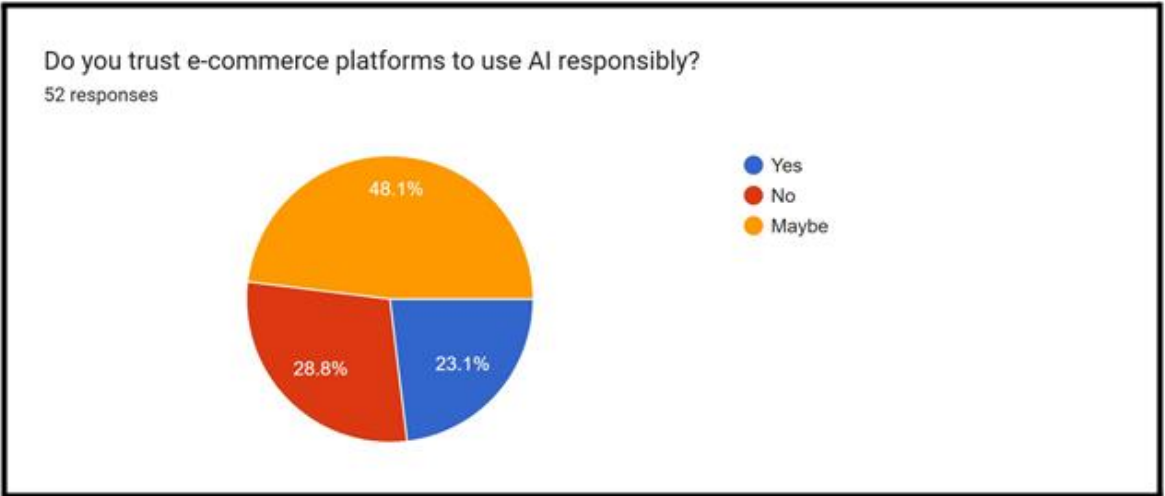
7. How would you rate your overall experience with AI-based personalization?



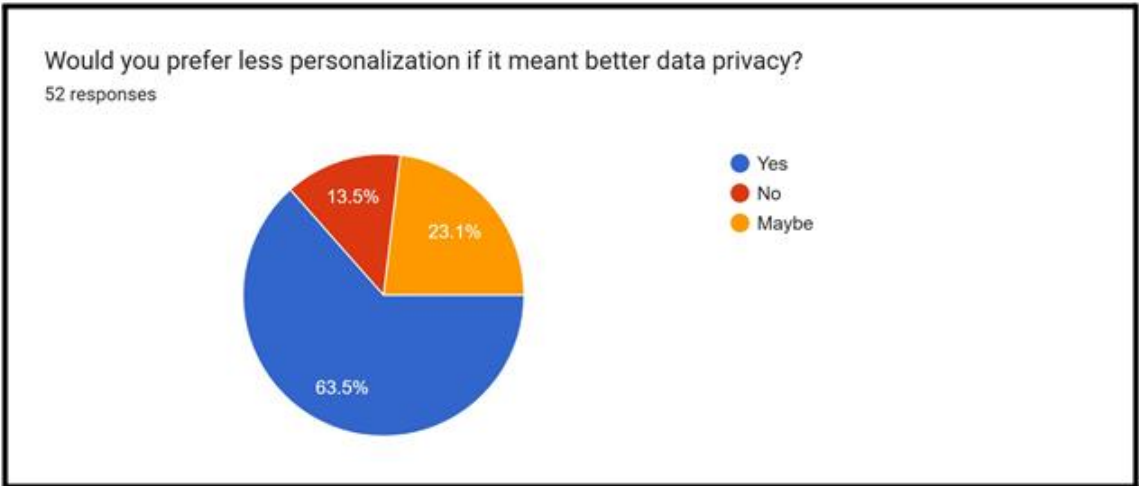
8. What kind of personalization do you value most?



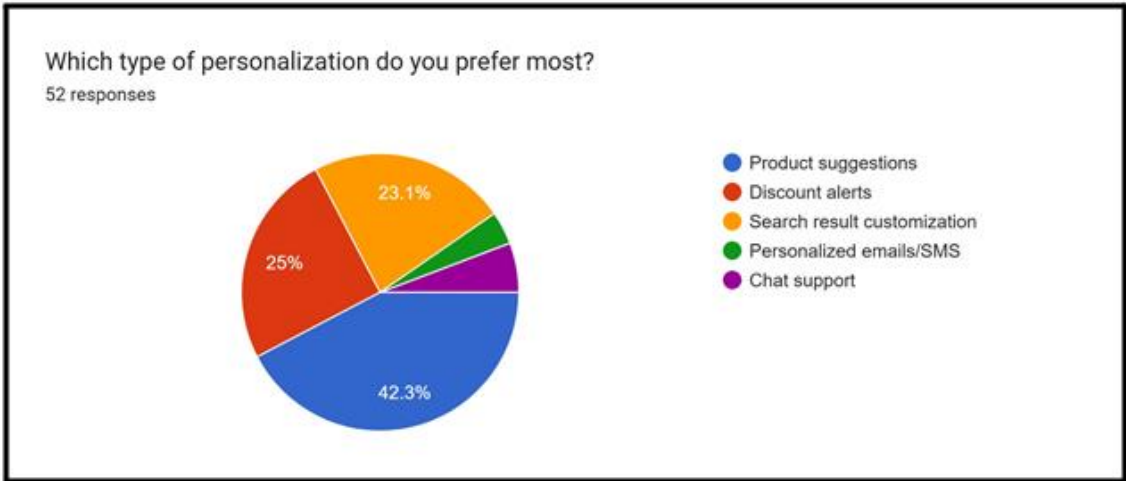
9. Do you trust e-commerce platforms to use AI responsibly?



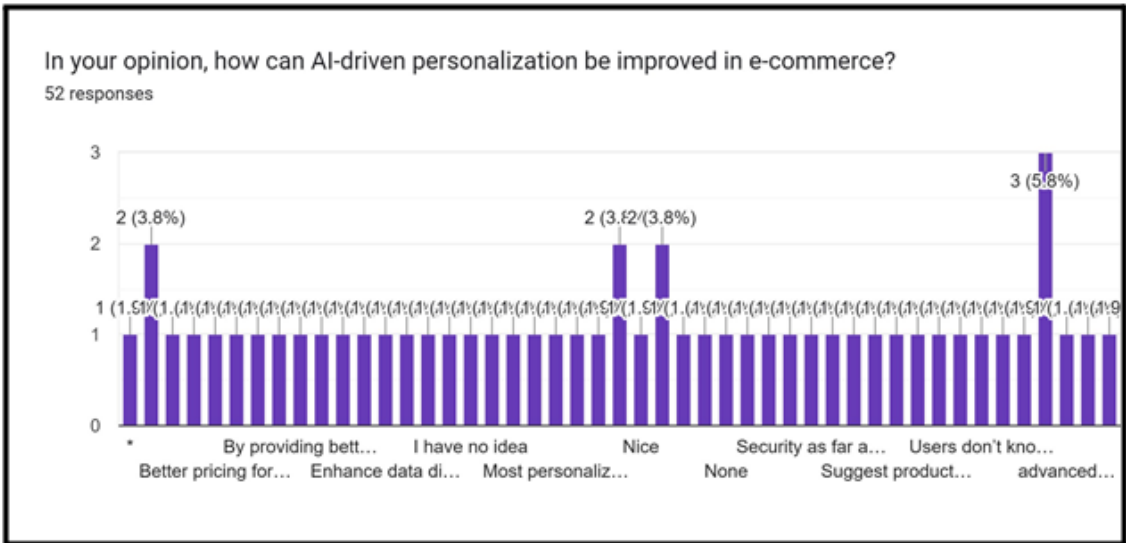
10. Would you prefer less personalization if it meant better data privacy?



11. Which type of personalization do you prefer most?



12. In your opinion, how can AI-driven personalization be improved in e-commerce?



9. KEY FINDINGS

- A majority of respondents **shop online frequently**, showing strong engagement with e-commerce platforms.
- **Amazon and Flipkart** emerged as the most commonly used platforms among users.
- Most respondents reported **noticing personalized product recommendations**, indicating wide

implementation of AI in e-commerce.

- A significant number of users find these recommendations **relevant to their interests**.
- Over half of the respondents agreed that **personalized suggestions influence their buying decisions** positively.
- **Chatbot interaction** during the shopping journey is moderately used; while some find it helpful, others still prefer human support.
- The **overall satisfaction** with AI-based personalization was rated **high**, with many respondents giving positive feedback on their experiences.
- The most valued types of personalization include:
 - **Product recommendations**
 - **Personalized discounts and offers**
- Concerns about **data privacy** remain significant; some users expressed reluctance to fully trust e-commerce platforms with their personal data.
- A portion of respondents stated they would **prefer less personalization** if it ensured **better data protection**.
- Suggestions for improvement include:
 - **Greater accuracy** in recommendations
 - **User-controlled personalization settings**
 - **Transparency in data collection and usage**

DATA ANALYSIS TABLE (SUMMARY)

Survey Theme	Key Findings Respondents (n=50)	From Observation
Awareness of AI Personalized	Most respondents are familiar with AI use in e-commerce	Recognized features recommendation, emails, chatbots.
Influence on Buying Behaviour	Many admitted AI suggestions influenced purchases	Impulse buying triggered by personalized recommendations
Perceived Benefits	The majority found AI helpful in improving shopping experience.	Users felt AI saved time and improved product discovery.
Privacy Concerns	Users concerned about how personal data is used	Desired more transparency and control
Trust in AI-Enabled Platforms	Trusted well known brands more than lesser known brands	Trust linked to brand reputation and ethical AI use
Suggestion for Improvement	Asked for clearer data policies and better personalization control	Also wanted improved accuracy in product recommendations

10. CASE STUDIES

- **Amazon:** Uses a robust recommendation engine contributing to over 35% of total sales.
- **Nykaa (India):** Personalized beauty product suggestions using customer profiles, purchase history, and AI-driven skin tone analysis.
- **Flipkart:** Applies machine learning algorithms to personalize search results and homepage content, especially during festive sales.

11. RECOMMENDATIONS

● For E-Commerce Businesses:

- Invest in advanced AI infrastructure and skilled talent
- Focus on first-party data collection and ethical data practices
- Combine personalization with content marketing and omnichannel strategies

● For Policymakers:

- Promote responsible AI use and regulate data privacy
- Support AI training initiatives for digital startups

● For Marketers:

- Continuously test and optimize AI-driven campaigns
- Use AI tools for behavioral segmentation, product bundling, and dynamic pricing.

12. CONCLUSION

The findings of this study highlight the growing significance of AI-driven personalization as a transformative force in the e-commerce industry.

As consumer expectations evolve, businesses are increasingly leveraging artificial intelligence to deliver tailored experiences, enhance customer satisfaction, and gain a competitive edge in the digital marketplace.

The results indicate that personalized product recommendations, dynamic content, and AI-enabled interactions—such as chatbots—positively influence consumer behavior by increasing engagement and purchase intent. However, the study also brings attention to user concerns regarding data privacy and trust. While many users appreciate the relevance and convenience of personalized suggestions, a significant portion remains cautious about how their data is collected and used.

Overall, AI-driven personalization is not just a marketing trend but a strategic necessity for e-commerce platforms seeking long-term customer loyalty and market differentiation. To maximize its benefits, businesses must strike a careful balance between delivering personalized experiences and ensuring ethical, transparent, and privacy-conscious data practices.

This study provides valuable insights for digital marketers, e-commerce businesses, and technology developers, emphasizing the need for user-centric design, responsible AI implementation, and ongoing innovation in personalization strategies.

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CAN SUSTAINABLE BUSINESSES BECOME BUSINESS GIANTS IN INDIA? – AN ANALYTICAL STUDY OF FACTORS, BARRIERS AND CONSUMER BEHAVIOUR IN COMPARISON WITH OTHER BUSINESSES

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ABSTRACT

Sustainable businesses and startups have been a part of the Global economy for a long time now, but it is a relatively new industry in India. Even though many sustainable businesses already exist in India, their growth has been glacial. This led us to the question, 'Can Sustainable Businesses become business giants in India?'. Through this research, we aim to understand the internal and external factors and barriers affecting the growth of these Sustainability-first businesses and hypothesize a solution for them to grow into business giants, if possible. A mixed method, including both qualitative and quantitative, was used to fulfil the objectives of this research. The qualitative research included interviews of retail staff and managers, an online survey about consumer behaviour and preferences, and secondary data for comparative analysis of the growth journey of different brands and factors affecting it. The findings indicated that due to some inevitable challenges in India, the scalability of these sustainable businesses to the point of becoming business giants is difficult, especially in the short term, and if the business is solely relying on the Indian consumer base. It was concluded that the possibility of these businesses becoming business giants in India is slim, but with the adoption of a more environmentally responsible mindset in India, paired with increased government support, and incentives for exports to these Sustainable businesses and startups, India, too, can create its own Sustainability-first business giant or even Unicorn.

Keywords: Sustainable practices, Sustainability-first business, Green startups, Eco- conscious, Awareness, Qualitative analysis, Quantitative analysis, Primary research, Secondary research, Cross-case analysis.

INTRODUCTION

Sustainability is a way of meeting current needs without compromising the ability of future generations to meet theirs. With increasing global warming, depleting resources and climate change, it is the need of the hour to move towards sustainable practices. Though businesses have been incorporating sustainable practices as a part of their operations in the form of CSR activities, the question arises- Is this enough? This question led to the emergence of sustainable businesses, for which sustainability is not just one of the objectives but a primary goal of existence. These businesses work on the principle of triple bottom line, i.e., they aim to balance profitability while giving back to the society as well as the environment. According to Investopedia.com, the Triple bottom line measures the performance of the company equally based on social issues, environmental goals and corporate profits, known as the 3P's, namely People, Planet and Profit. The researches so far are mainly focused on what sustainable businesses are, their model and some of the challenges faced by these businesses. Some studies covered businesses which are sustainable through CSR activities. In this research, we are focusing on the businesses which were started and continued on the basis of sustainability and not the ones that only include sustainability as a part of their CSR activity catering to either one or multiple components of the three Ps.

Here, we will try to evaluate if such businesses can grow into business giants in India. Business giants are large, powerful and influential companies that dominate their respective markets and are categorised by significant market share, revenue and global reach. In this paper, we will we plan to accomplish the following objectives:

- To examine the factors that affect the growth of sustainable businesses into business giants.
- To study the common barriers faced by sustainability-driven businesses.
- To explore real-life examples of sustainable businesses that have grown significantly in India.
- To analyse consumer behaviour and investor thinking toward sustainable businesses.
- To examine the role of government policies and regulations in supporting or limiting such growth.

This research will aim to provide a comprehensive and real-life insight into the sustainability-first businesses, particularly in the Indian market and among the Indian consumers with a different mindset and factors determining their consumption and purchase behaviour.

LITERATURE REVIEW

Sustainable businesses are those who integrate environmental, social and ethical concerns in their core operations and value chain. Elkington (1994) introduced the 'Triple Bottom Line' framework, in which he says along with profit it is important to focus on people and the planet. In the Indian context, brands like Bare Necessities and Phool.co have shown an impressive initiative by pioneering innovation in sustainable practices.

Bare Necessities work with zero-waste philosophy and ethical sourcing also gives priority to social responsibility (Bare Necessities, n.d ; YourStory,2023)

Phool.co developed an innovative model by converting the temple waste into eco- friendly incense and biomaterials which attracts many investors (Forbes India, 2022).

But even after having a strong intent, they face problems in scaling their businesses because they have small market size and high operational cost.

Gupta and Bansal (2021) say it is difficult for Indian sustainable startups to integrate with the mainstream market, one of the main reasons is they do not get proper financial support, consumers are not ready to pay premium prices and it is costly to maintain eco- friendly operations.

According to Kumar and Shobana (2025), In India sustainable industrial development faces problems like low awareness, low access to green financing and weak regulatory systems. At policy level, the Indian government has launched Mission LiFE to promote sustainable lifestyles. But at ground level, the execution is weak, because of which the impact remains limited (NITI Aayog, 2023).

All this shows that India is supporting sustainability but the structure and system are still limiting the full-scale growth of sustainable businesses.

This review shows a clear gap. Existing studies have explored the values and impact of sustainability, but very few have addressed whether a sustainable business can become a business giant or not. This paper attempts to fill the gap by evaluating the practical scalability of sustainable business models in Indian economic conditions.

OVERVIEW OF THE GOVERNMENT POLICIES

One of the biggest external factors affecting the growth of any business, sustainable or not, are government policies. There are several policies being implemented by the government of India for promoting and supporting sustainable businesses and startups.

Policies like MSE SPICE, MSE GIFT, Technology Upgradation Fund Scheme (TUFS), NIIF Green Growth Equity Fund, and ADEETIE MSME Scheme, mainly focus on manufacturing and machinery support. These schemes support sustainable businesses by giving incentives for setting up eco-friendly production units or adopting renewable energy. Some provide capital subsidy to offset cost of machinery, for instance, MSE SPICE funds 25% capital requirement for clean manufacturing, while others offer interest subvention, such as, MSE GIFT gives 2% p.a. subvention for eco-friendly production practices.

DST Technology Development Program funds for R&D in the sustainable sector, as well as, for product development and scaling of sustainable technologies. Projects like the National Adaptation Fund for Climate Change (NAFCC) support climate-resilient business models and climate-friendly operational practices.

The government of India is also promoting schemes like Atal Innovation Mission – Green Accelerator, which provide pilot-testing funding, mentorship, and networking opportunities to sustainable startups, intending to give a boost to sustainable practices along with startup economy.

As the cases of greenwashing, an act of falsifying or magnifying the impact of a certain business practices or products on the environment to appeal to the eco-conscious investors increased, the need for a source of credibility to safeguard investors from greenwashing and actual sustainable businesses from being falsely tagged for greenwashing led to Green Certification and Eco Labels. These Certifications and labels, like ZED Certification, and Ecomark Scheme, improve brand trust and market perception as well as help green products stand out in the market. Indian Green Building Council or IGBC and State Green Building Incentives provide ratings to sustainable businesses and also provide incentives such as, government subsidies, tax rebates, etc

RESEARCH METHODOLOGY**Research design:**

The study adopted a mixed approach comprising of quantitative as well qualitative methods to study the perception of the consumers and retailers towards sustainability first products and businesses. The qualitative approach included interviews of the managers and staff of a few retail stores in Mumbai to gain insights about

the view of consumers as well as their own understanding of sustainable business practices. The quantitative approach includes an online survey of consumers to understand their preferences and awareness towards the idea of sustainability and sustainability-first products. This design was considered as it provides insights from both ends, that is, the consumers as well as the retailers, and enables systematic measurement of data for interpretation.

Data collection methods:

The data is collected using a structured Google form, which includes both closed- ended questions for statistical analysis of the data, as well as, a few open-ended questions for qualitative insights. The retail store managers and staff were interviewed by personally visiting the stores to enable additional observation.

Sampling:

The target population for the interviews included retail stores in Mumbai that already implemented sustainable business practices or sustainable products in their stores as well as stores with a footfall of middle-class population which encompasses a significant proportion of India. The survey collected a total of 109 responses included in the final analysis.

Data Analysis methods:

Quantitative data was analysed using correlation, T-test, and Chi-Square test through Microsoft Excel, to examine the relationship between various demographics and factors which directly or indirectly affected the growth of Sustainable businesses. Qualitative responses from open-ended questions and interviews of the managers and staff of the retail stores which was analysed to identify patterns.

Variables and Measurements:

The study considered:

- Independent variables: The type of industry, annual turnover and various challenges faced by and due to the industry were considered in the case studies and comparative analysis.
- Dependent variables: responses of the consumers collected by online survey, used Likert scale for attitudinal questions and demographics.

Research Instruments:

It was a self-administered questionnaire, divided into following sections:

- **Demographics-** This included the information of respondents, namely, Age group, Gender, Occupation and Monthly Income.
- **Awareness and Understanding-** This section included questions that helped us understand the awareness about the concept of sustainability and sustainability-first businesses.
- **Perception and Attitude-** It included questions to understand how important sustainable practices are to the consumer.

Ethical considerations:

Participants were informed about the purpose of the study and informed consent was taken before data collection. This data was used solely for academic purposes.

Limitations of Methodology:

The study was limited to the retail stores and consumers from Mumbai, which may affect the generalization of findings. The data included the majority of respondents from the same age group i.e.; 18-25 years again affected the generalization of findings. As the data was self- reported, it is prone to respondent bias. The time constraint limited the sample size.

Result and Discussion

To study the growth and get a comparative perspective on the growth pattern of some well- known names in the global and Indian sustainable industry as well as regular business operating in the same sectors, we will be discussing a few case studies.

Patagonia

The journey began in 1957, when the founder of Patagonia, Yvon Chouinard made his first pitons and over time, his business started to expand, and later became Chouinard Equipment. Later he realized that pitons were damaging the rocks as climbing became popular and hence he shifted his focus leading to the incorporation of Patagonia.

In Patagonia started selling climbing clothing in 1973 because climbers at that time were still wearing sweats, cutoff Chinese and dress shirts none of which were durable. Focused on high-quality outdoor clothing and gear while prioritizing environmental responsibility. The clothing industry accounts for a significant share of global greenhouse gas emissions and waste water.

Patagonia decided to solve out this issue with its mission statement “We’re in business to save our home planet.” Therefore, the concern for the environment can be observed in their products such as durable, reusable and recycled apparels. From 1980’s to 1990’s they stored with various sustainable practices like organic cotton and recycled profits. Since 1985, have been donating 1% of their profits for protection of environment.

The worn wear program started in 2013 has been a significant move towards sustainable fashion which is a program which is dedicated to extend the life of Patagonia gear by reselling, repairing, and recycling used clothing and gear. Patagonia is helping to reduce textile waste, encourage conscious consumerism, and promote a more sustainable future for the fashion industry through this initiative as the fashion industry is one of the most wasteful industries in the world. In 2022, Chouinard and his family transferred ownership of Patagonia to the newly created Patagonia purpose trust and the ngo holdfast collective. Both of these ensure that all of the profits go toward combating climate change and protecting underdeveloped land across world.

It caters to outdoor enthusiasts who are passionate about conservation of the environment and the society. They value quality, durability and sustainability and are willing to pay a premium for products from a company they trust. They even donated over 150 million usd to environmental grps as their 1% planet commitment.

According to an article by Causeartist (2025) the Annual revenue of Patagonia roughly tripled around 200 million usd in early 2000s to 600 million usd in 2012 and then quadrupling over the subsequent decade to about 1 billion usd by 2019 and to around 1.5 billion usd in 2022.

When the founder transferred ownership in 2022, the company estimated it would be able to “pay out an annual dividend of roughly \$100 million” to its new nonprofit owner, after reinvesting in the business.

Hence, due to their strong values and ethical actions along with bold business decisions like donation of 1% of their profits since 1985 and their famous ‘Don’t buy his jacket’ Marketing campaign in 2011 lead to the trust and reputation they built over the years and became a business giant even after following a sustainability first model.

Thaley

Though plastic bags are being recycled for decades, still the focus on plastic bags remain questionable which even are a significant pollutants and concern for the oceans and marine life.

In order to solve this issue, the founder of Thaley, Ashay Bhav at the age of 23 Years after studying Footwear designing from New York, decided to start this revolution against the plastic pollution. His aim was to find a solution to the problem of the 100 billion plastic bags used each year that use 12 million barrels of oil and kill 100,000 marine animals annually.

Each part of the shoe is recycled following an innovative process which starts with washing the collected plastic bags in warm water which are later dried. Later, 8-10 plastic bags are fused with heat press which is used as the main material of the shoe, an interesting innovation by Thaley- The Thaley Tex which is Iced for manufacturing many of the large of the shoe.

The remaining parts are made by recycled bottles and recycled rubber. Even the packaging contains basil seeds, hence one can place it in soil after use and after a few days, a plant will grow out of it.

Campus

Campus Activewear, originally a sub brand of Action Shoes, a household name in the 90’s transitioned to Campus in 2005. Campus Activewear is one of the leading players in organized sports & casual footwear sector in India. Camlus craft shoes with care for everyone- men, women and kids, with an equal attention to detail. The quality, design and affordability attracts a large population catering to the specific needs of the Indians. Today Campus is India’s biggest sports & casual footwear brand selling more than 15 million pairs annually. The brand also offers a wide variety casual footwear with stylish designs, which

helps them to connect with the young millennials. This transition from the name ‘Active’ to ‘Campus’ is a strategic move by the company after the Liberalization, Privatization and Globalisation policy due to which global players like Nike and Adidas entered the market. Indians usually prefer global brands over the Indian brands and names. Hence to overcome this issue, ‘Action’ became ‘Campus’.

Along with the name strategy, the design also has a remarkable contribution on the success of the company. The Air Capsule Technology protects the feet against impact forces. The Foam lite, Pillow foam and active cell enhances the comfort and experience of the user. Springy-fit protects the feet from rocks and shock and the air suspension which gives best experience while running.

The result of the same can be observed as the increase in the sales and profit throughout the last few years. Campus Activewear Ltd.

	March 2022	March 2023	March 2024	March 2025
Sales (Rs. Crores)	352	348	364	406
Net Profit (Rs. Crores)	23	23	33	35

Source: Screener.in

Key findings:

Patagonia, a renowned name in the fashion industry for its ethical and value driven actions, built this reputation over nearly five decades. Whereas, Campus after transitioning from Action took just a few 10-15 years to capture a significant portion of the industry. Hence, though with time, a purely sustainable brand did rise over a period of time. But there are some other factors as well that affected the growth of Campus in the Indian market which need to be mentioned. The reason for which Action became Campus was the prefer of Indians for foreign brands and concepts over Indian ones. Also, Campus worked on the price and comfort of their shoes catering to the needs of the consumers. They understood the behaviour of their consumers and executed the necessary steps, the result of which is clearly visible in the data presented. The same thing was observed in the interview with the manager and staff at one of the Campus stores in Mumbai. The manager shared that still the consumers look for comfort and price over sustainability. Hence, there is awareness but no execution which was even observed in our online survey where even the aware population with a good earning was not willing to spend much for such products. Hence, the same was found out through the conversation with the manager and staff at the Campus Store that more consumers preferred running shoes which are more comfortable over the casual shoes which are flat in nature.

Originally, we hypothesized the same strategy for the growth of 'Thaely', but it was found that Thaely has already executed the same by recently launching the Tech Tabi series of running shoes at ₹3500, almost the half of the price of their other sneakers that cost around

₹8000. Though the price still remains expensive for many, the change is remarkable. Another common factor that can be observed in the cases of Patagonia and Campus, irrespective whether they follow a sustainable or traditional business model, is time. Both of the brands took more than a decade to form a base in the market and then leveraged on the trust among the consumers on the basis of strong commitments to ethics and value. Hence, time is a crucial factor for a company to evolve into a giant, especially in Indian market where consumers accept a brand and adapt their habits gradually. Hence every brand and especially the sustainable ones need to a consistent presence in the market paired with efforts for raising awareness among the consumers. Hence the brands need time to leverage on economies of scale and pass on the benefits to the consumers in the form of affordable products.

However, some reviews on Trustpilot express concern about the comfort while wearing the shoes as well as delayed deliveries in foreign countries. Hence, Campus needs to solve out the issue with the delivery as well as work on the comfort of their shoes in order to grow in the Indian market.

Primary Data Interpretation

This study aims to examine the factors that affect the growth of sustainable businesses into business giants, this includes the factors influencing the availability of sustainable products in retail stores, it also focuses on consumer awareness, retail stocking behaviour and perceived barriers to adoption of sustainable products.

Interviews

This method led us to identify some of the biggest barriers faced by the sustainability-first businesses and startups in India to enter the retail stores.

One of the key barriers is awareness and knowledge gap. Most retail stores, were rarely ever asked specifically for sustainable products. Even when some stores had products like bamboo straws, they were soon taken off the shelves due to perceived lack of demand.

The retailers and retail chains themselves followed some sustainable practices like eco- friendly bags and recycle bins outside the stores, which shows openness to sustainable practices but due to reactive stocking policy of stocking only when customers request has led to less availability of sustainability-first products.

Sustainable products are associated with high price in the minds of both, retailers and consumers. These products are therefore mainly available in affluent areas only. This again makes price-sensitivity a limitation to the adoption of these products.

Online Survey

The data collected through the online survey was tested using different methods and each gave an important insight regarding the consumer behaviour.

A Pearson correlation test was conducted on the data demonstrating the degree of awareness about the brand to the one demonstrating willingness to pay, the result of which showed a weakly positive correlation ($r = 0.067$). This suggests that awareness about the brand does not linearly predict the willingness to pay more for the product at individual levels.

	Family Income	Prefer Eco-friendly Brands	Willing to Pay More	Amount Willing to Pay More	Heard of Sustainable Brands
Family Income	1				
Prefer Eco-friendly Brands	-0.0763	1			
Willing to Pay More	-0.1750	0.5826	1		
Amount Willing to Pay More	0.1295	0.1149	0.2638	1	
Heard of Sustainable Brands	-0.0065	0.0015	0.0671	0.0597	1

This was followed by a T-test on the same data sets in order to compare the willingness to pay between the consumers who were aware about the sustainable brands to those who were not aware about the sustainable brand. The result was statistically significant, $t(211) = 3.82$, $p < 0.001$. This suggests that though on individual level the awareness cannot predict the willingness to pay, but on an average, the consumers aware about the brand were more willing to pay for a sustainable product.

Row Labels	Sum of Yes	Sum of Maybe		Sum of No	Sum of Total
₹10,000–₹25,000	5		1	6	12
₹25,000–₹50,000	7		2	5	14
₹50,000–₹1,00,000	17		2	10	29
Above ₹1,00,000	40		9	20	69
Below ₹10,000	2		0	3	5
Total	71		14	44	129
Grand Total	142		28	88	258

A Chi-square test was performed as well to test the relationship between family income and awareness about the sustainable brands. The results were statistically insignificant, $\chi^2 = 4.41$, $p = 0.622$. This clarifies that the awareness about the sustainable brands do not vary much among the various income groups. In fact, the middle-income groups were more aware compared to the lower and higher extremes.

	Amount Willing to Pay More	Heard of Sustainable Brands
Mean	2.495412844	1.972477064
Variance	1.178219504	0.860346585
Observations	109	109
Hypothesized Mean Difference	0	
df	211	
t Stat	3.823835571	

P(T<=t) one-tail	8.64844E-05	
t Critical one-tail	1.652107286	
P(T<=t) two-tail	0.000172969	
t Critical two-tail	1.971270646	

To sum up the study, though the brand awareness may not be linearly correlated to willingness to pay more at individual levels proves in the correlation test, but comparatively, consumers aware about the sustainable products are more willing to pay on an average than the unaware ones. But as the same time the Chi-test proved that the unawareness about the sustainable products is spread across all the income groups. Hence, the according to our study companies should focus on all income groups for the awareness campaigns and not just the high-income demographics.

Hence, the T-test according to which, $t = 3.82$, $p < 0.001$, rejects the null hypothesis and accepts the alternate Hypothesis according to which there is a significance difference between the consumers who are aware about the sustainable brands and the ones those are unaware.

CONCLUSION

This research explored whether sustainable businesses can become business giants. Surveys, analysis, case studies like Patagonia, Thaely, Bare necessities, Phool.co and campus. The study says although innovation and intent are present, it has big challenges as well in their way of growth like low consumer awareness, price sensitivity, lack of skilled labours and government support. But the most important factor that showed up is trust and time. In India to grow; a business needs to win the trust of the people, make an impactful impression and fulfil the price metrics. It is difficult to become a business giant only on the basis of Indian market but if government support, if they get right amount of exposure to exports and by gradually educating the consumer especially the head of the house, as in most of the Indian household, the majority of the decision is taken by the head, then this goal is possible. Lastly, to conclude it is tough for a sustainable business to become a business giant but with long term mission, trust building, and right support a sustainable business can grow into a business giant in India.

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APPENDIX

Survey Questionnaire

Form Title: Understanding Sustainable Product Demand in India Section 1: Personal Information

1. Your Age Group
2. Your Gender
3. Your Occupation
4. Your Family's Monthly Income Section 2: Awareness & Understanding

1. Have you heard of brands like Phool, Thaely, Beco, Bare Necessities, or similar sustainability-focused brands?
 2. What do you understand by the term sustainable business?
 3. How do you usually learn about such brands? Section 3: Rate the following statements
 1. I prefer buying products from eco-friendly or ethical brands.
 2. I am concerned about the environmental impact of the products I use.
 3. I trust brands that label themselves as "sustainable" or "green."
 4. I would be willing to pay more for a sustainable product.
 5. Sustainable businesses can scale and compete with large companies.
 6. I have stopped using certain brands/products due to sustainability concerns.
 7. Government should support sustainability-focused businesses.
 8. I believe sustainability is just a marketing tactic for many brands. Section 4: Purchase Behaviour
 1. Where do you usually shop for your day-to-day needs, personal items, or anything else?
 2. How often do you purchase products labelled eco-friendly/sustainable?
 3. What kind of sustainable products have you purchased (if any)?
 4. How much more are you willing to pay for a sustainable product?
- Section 5: Open-ended Questions
1. What would encourage you to support more sustainable businesses in the future?
 2. Any sustainable Indian brand you personally like or follow? If any, why? Survey Form and Responses

Survey Form: <https://forms.gle/xUZvcwXNNp9oUsSd7>

Responses: <https://docs.google.com/spreadsheets/d/1AycJc6F4t7sbj5JE390BwLJ1oF0hOBR2qVTCtrf28pw/edit?resourcekey=&gid=1126446939#gid=1126446939>

Interview Questionnaire

1. Do you know about any sustainable product?
2. Has any customer asked about the same?
3. Do your suppliers have the stock for the same?
4. What sustainable measures does your store undertake?

CHANGING TREND IN ONLINE SHOPPING - A STUDY OF MUMBAI SUBURBS

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ABSTRACT

In the fast-growing world, consumers are ready for upgraded and modern technology to make their purchases. Many of the consumers in different age groups are finding their ways to make their purchase online through various platforms available. It is seen that there are some of the driving factors, which are trending in the online marketers. These factors influence the growth of online shopping and deliver a good profit to the marketers as well as to the consumers. The introduction of Artificial Intelligence (AI) strategies have added to the trend on online shopping. Other trending factors, attracting online consumers are voice search engines, personalized services, Chabot's, difference modes of payment, subscriptions and discounts and many more. The present paper is the study to gain insight on the trending pattern of online shopping and their advantages to the marketers and the consumers. For the study a sample of 200 consumers from different backgrounds are taken into consideration. Random sampling is adopted for the study design and the data is collected through the Google form. The results of the study indicate that the modern AI techniques and Machine Intelligence is gathering huge potential in the online business.

Key words: Artificial Intelligence, Chabots, Voice search engines, online shopping

9. INTRODUCTION

In the contemporary world internet is playing an important role in all different types of businesses. It has facilitated the development of business. The world is becoming techno savvy. The use of online market not only in urban areas of the nation but also the spread is over to the rural areas. Advanced Technologies and different type of applications used in computers and mobiles are encouraging the new buyers to shop online. Past few years it has been seen that there are different e commerce companies, which have come up with different type of marketing strategies just to attract large number of buyers. Various types of marketers, which are, involved in such type of businesses Amazon, Flipkart, Snapdeal, Jabong, Paytm, Myntra, etc. Amazon and Flipkart have emerged as the most important online firms selling the products at a cheaper rate to the customers. However, in the recent days it has been found that then has been increasing competition among the firms. This competition has left the firms to build in different strategies to pull in the customers. The purpose of the present research is to analyze the changing trend of online shopping customers in Mumbai suburbs. The study is relevant for the online firms to increase their marketing strategies technically.

10.LITERATURE REVIEW

- 2.11. Consumer are highly influenced by the advertising, price of the product, other promotional activities Kumar & Chawla (2017) states in their research paper that the buying pattern of the online used, income or pocket money available, and other factors such as the brand and other people's recommendation concerning the product.
- 2.12. Saini (2017) in her paper talks about the vast literature available on digital marketing. She talks how social media plays an important role to promote the growth of digital marketing. Paper talks about the patterns and trends related to social media as a tool of marketing over the past few years. This paper represents an exploratory effort into direction and analyses existing social media marketing practices and tools, their benefits and concerns associated with this type of marketing channel.
- 2.13. R. Rajendra & S. Asok (2017) in their paper talks about the reasons for failure of online shopping companies and the turnaround strategies used by them. In spite of spending huge amount of money for promotions and providing heavy discounts to its consumers, they are not able to perform well. Invariably, all of the companies are encountering same issues of profitability and they became clueless in the part of turnaround their operations. They have tried to analyze the complications in the online shopping and provide suggestions for the companies to use appropriate turnaround strategies to convert their operations to profitable one.
- 2.14. Padhi, Dushmanta (2017) describes about the beginning of major directional change of consumer behaviour, from physical stores to virtual stores in the retailing industry. In India, Internet is still considered a new medium to link consumers with retails, and paper says that Indians are still attached to the traditional brick and mortar stores; they consider online shopping as a risky alternative. In this study,

author has attempted to find out the factors leading to perceived risk with online shopping. Reliability coefficient for the scale containing 18 variables was satisfactory and factor analysis generated six major factors, product risk, financial performance risk, psychological risk, time risk, delivery capability risk and website performance risk.

- 2.15. Bishnoi, Sunita & Mittal, Archana (2017) said that retail market scenario has totally changed since the advent of online shopping. However, it is a very recent phenomenon in the field of e-commerce but due tremendous advantages, it has gained popularity over the world wide from traditional method of shopping. It is believed to be the future of shopping in the world.
- 2.16. Chauhan, Gauri and Jain, Ruchi (2017) talks about the impact of demonetization on the online transactions. There has been a great turbulence in the Indian economy with the announcement of demonetization of Rs. 500 and Rs. 1000 notes. Demonetization is a term used when there is act of stripping a currency unit of its status as legal tender. This move had been taken in order to eliminate the use of black money and fake notes by reducing the amount of cash available in the economy.
- 2.17. D. Jigyasha and Kaur Japneet (2017) talks about the consumer preference towards online shopping and traditional shopping. This era of business is marked with the high degree of dynamism. Due to technological advancement, shopping at the click of mouse is gaining popularity in not only today's generation but also all age groups of the population. Online shopping has given the consumers the choice to buy anything, anywhere and any product, regardless of its location. It has come up as a boon for all types of consumers and it has something to offer for everyone. It gives edge to the customers over traditional shopping because of advantages like time saving, low price, convenience, all time shopping accessibility, broad availability of products but involves the risk of personal privacy and transactional security.
- 2.18. Singh, Ranbir (2017) this paper examines the functioning and performance of websites of the healthcare industry. Websites of Medical tourism facilitators, hospitals and government organizations have become effective marketing tools in healthcare industry. Therefore, it is necessary to analyze the websites' contents, designing and periodical up gradations for maintenance of reliability and credibility to improve their performance.
- 2.19. Samson, M. Regina (2011) The Internet and web technologies had a great impact on the way companies run their businesses, especially when it comes to a complex business networks such as supply chains. The set of advanced web technologies called web 2.0 produced a lot of hype, but we have not seen concrete & tangible business effects and value creation of these technologies such as RSS and ATOM feeds, web services, Javascript and AJAX, web scripting, Mashups, programming frameworks and wikis.
- 2.20. Leake, William. And Vaccarello, Lauren. (2012) Search engine optimization uses words and data to propel sites to the top of search results. Some marketers love stringing words together and those who dread writings. There are also two types of marketers who work with data: those who love numbers and those who claim that numbers make their brains hurt. Creative types who invest in the emotional punch of a cool design or a resonant slogan may be prone to hate. SEO serves up the right results for the right person; it applies data to word choice, at the right time & in the right format.

11.OBJECTIVE OF THE STUDY

With the aim of analyzing the current trend online shopping in Mumbai suburbs, the main objective of the study is to check with the present status of online shopping by evaluating the type of online shopping, marketing strategies adopted by online companies and demographic details of the online customers. At the same time, the paper also evaluates what are the features used by the customers very frequently when they shop online. This will enable the researcher to conclude about the recent trends in online shopping.

12.DATA COLLECTION

4.4. Primary Data

In order to fulfill the objectives set out, a sample study was undertaken using a well – framed questionnaire, which was duly filled in by the respondents. Respondents of varying nature were selected based on the important aspects such as their Age, Educational qualification, Occupation and so forth. A structured questionnaire was pretested and suitable modifications will be carried out later.

4.5. Secondary Data

The primary data was supplemented by enough secondary source data. The secondary data pertaining to the study was gathered from books, journals, internet, and by utilizing the well –equipped libraries at different places. It was utilized to get the necessary and the latest information required for the study. Further, the secondary data was collected from leading journals, the internet and the encyclopedia etc. A number of standard textbooks were referred to obtain the pertinent literature on the topic.

4.6. Discussion and Informal Interviews were carried out.**13.SCOPE OF THE STUDY**

This study is confined only to Indian online users particularly Mumbai suburbs. This study has been conducted to analyze the changing trends in online shopping in Mumbai suburbs. Total 200 respondents in the age group of 20 to 50 years are taken into consideration. These respondents are using online channels to make their purchases.

14.ONLINE MARKETING AND CHANGING TREND**6.7. Definition of E-Commerce**

Electronic commerce or e-commerce refers to a wide range of online business activities for product and services. It also pertains to “Any form of business transaction in which the parties interact electronically rather than by physical contact.”

E-commerce is usually associated with buying and selling over the internet, or conducting any transaction involving the transfer of ownership or rights to use goods or services through a computer- mediated network.

E-commerce is the use of electronic communications and digital information processing technology in business transactions to create, transform, and redefine relationships for value creation between or among organizations, and between organizations and individuals.

6.8. Digital Marketing

According to the Digital Marketing Institute, Digital Marketing is the use of digital channels to promote products and services to consumers and businesses.

Digital marketing includes SEO (Search engine Optimization), content marketing, Search engine marketing, email marketing, content automation, campaign marketing, e- commerce marketing, social media marketing, social media optimization, display advertising, e-books option disks , games and any other form of digital media, it also extends to non-Internet forms of digital sources as SMS or MMS in phones.

The companies undertaking digital marketing focus on a customer centric approach towards its customers. The customer centric approach focuses on enriching customer value by reducing the efforts put by the customers. Their efforts to make purchase are reduced as they get their products delivered at their doorsteps. Digital marketing helps to create a cordial relationship between dealers and the buyers. The online traders such as Flipkart, Amazon, and Snap deal and so on with the help of their warehouses supply goods from the dealers to the buyers.

6.9. Types of Digital Customers

A research study was conducted by Digital Think tank GroupM Next, in which the company examined more than 168000 purchases of consumer electronics, why and where the buyers prefer going online. The research discovered some patterns in the data. They succeeded in dividing the online buyers into six different groups. These groups behaved in different ways and relied on some channels more than others rely and took distinct steps before making their purchase decision.

6.3.1 Around one-third (29 percent) of online buyers fell in the group, “Basic Digital Consumers.” This group has no problem in making their purchases online. They use search, retail and brand sites. They act similar to the way the consumers did back in the “good old days.”

6.3.2 The second group is called “Retail Scouts” and its percentage falls to 22 percent of buyers. This group takes faster purchase decisions (Averaging only three steps per purchase). They prefer search and retail sites such as Amazon and Walmart to brand sites, and are more comfortable using mobile and tablet devices, even when they are inside their homes. They are the most receptive group to digital coupons.

6.3.3 The next group, “Brand Scouts”, is similar to the previous group; these constitute to 20 percent and make quick decisions as well and also place great reliance on paid search but prefer specific brand sites to retail sites

and therefore are more loyal. Their decisions are less likely to be dependent on price and are more dependent on features and benefits such as free shipping and money-back guarantees.

6.3.4 The fourth Category that constitutes to 16 percent of the consumers in the study is the “Digitally Driven Segment.” They give lot of importance to convenience and will avoid going to a store. They are also more receptive to advertising. Buyers in this group are 30 percent more likely to find advertisements valuable than other groups, especially paid search ads.

6.3.5 The fifth group, “Calculated Shoppers,” takes a long time to make their purchase (14 steps on an average). They will calmly go through all the options available to get the best deal. Buyers in this group are likely to be “show roomers” and will make the use of their mobiles to make price comparisons when they are close to making a purchase. This group is likely to use search and are responsive to advertising that offers discounts and specials.

6.3.6 The Final Group covered in the GroupM Next study was “Eternal Shoppers.” This group includes only 2 percent of the purchasers, but they stand out in the extremely long path to purchase (35 steps). They will make a thorough research on every online platform before making a purchase but they typically prefer paid search to navigate between them.

6.10. Factors responsible for changing trend in the sector of E-Commerce:

E-commerce has become a very important tool in the present day world. It has become mandate to be able to go hand in hand with the present technology, for doing so one has to join the e-commerce to compete with the rest of the world. Owners have to be constantly ready to cope up with the technological advancements and adopt them consequently. let us discuss some of the importance of e-commerce:

6.4.1 Customer Convenience:

It provides utmost convenience to the customers as they can get a variety of choices without moving out of their comfort zones, just at a click of button. They can also make comparisons of the same products from different online sellers and purchase the product at the most convenient prices.

6.4.2 Service available for 24X7:

This is the other biggest advantage of shopping from e-commerce companies, they have the benefit to purchase the goods at their own convenience, i.e. at any hour of the day and their order will be booked and later delivered at their doorstep.

6.4.3 Connect the globe:

The e-commerce websites provides services all around the globe. Therefore, they have the chance to reach and connect with the globe. This also results to higher turnover and success to their company.

6.4.4 Catch Customers on Social Media:

Today due to the popularity of social media sites, the e-commerce companies have the scope to reach to the bigger audience to sell their products. This has also given rise to additional means of advertising apart from Radio, Television, Newspapers and Magazines.

6.4.5 Attract New Customers with Search Engine Visibility:

It is believed that physical retail is run by branding and relationships, and online retail is driving by traffic that comes from search engines. Though it is not very popular among the customers to follow a link they come across in the search engine results and reach an e-commerce website that they must never have heard of.

6.4.6 Offer Product Datasheets:

E-commerce companies provide description and details of its products from an online product catalog. It has become convenient for the customers to get information about the product at any time of the day. Through this information, the customers and prospects can make a purchase decision of the products of the company.

6.4.7 Comprise Warranty Information:

E-commerce companies give information related to the warranty involved in some products within the e-commerce shopping cart. They also make sure that customers are aware of important terms and conditions that are associated with the purchase of their products.

6.4.8 Decreasing cost of inventory Management:

Because of e-commerce companies, the sellers can decrease the cost of managing their inventory of goods that they can automate the inventory management using the web-based management system. This helps them to save on their operational costs.

6.4.9 Keep Eye on Consumers' Buying Habit:

The e-commerce companies can easily keep an eye on the customers' buying habits and interests to cater towards their requirements. By fulfilling their needs constantly, companies can improve their ongoing relationship with the customers and build a long-lasting relationship with them.

6.4.10 Competence:

E-commerce companies can effectively and competently conduct their business, as their setting-up cost is very low as compared to expanding their businesses with huge number of brick and mortar locations. Limited number of licenses and permits are required to start-up an online store than a physical store. A lot of finance can be saved by using less number of employees to perform operations such as billing customers, Managing inventory and more.

6.4.11 Allow Happy Customers to Sell your Products:

Feedback plays an important role by way of comments and reviews by the previous customers to improve the sales of the e-commerce companies. This option cannot be available in physical stores; therefore, this option available with the online sellers is an additional advantage to them. It is important to disclose the customer's testimonials, reviews and product ratings as such things will help the customers to purchase the company's products.

6.4.12 Economical:

Unlike the physical stores, e-commerce companies need not to invest their money in store, insurance or infrastructure as all they need is an idea, unique products and a very well designed website to reach their precious customers to sell their products and services. This aspect makes the e-commerce a lot more economical and reasonable choice for business.

6.4.13 Boost Brand Awareness:

E-commerce companies can boost their brand awareness in the market. Developing pages that can be indexed by search engine crawlers is one of the best ways to enhance their website's search engine optimization and enhance the target audience in the site.

6.11. Types of E-commerce

E-commerce refers to buying and selling with the help of the web. However, to be more specific, e-commerce has been divided into six major types:

They are as follows:

Business - to - Business (B2B)

Business- to- Consumer (B2C)

Consumer- to- Consumer (C2C)

Consumer- to- Business (C2B)

Business- to- Administration (B2A)

Consumer- to- Administration (C2A)

6.12. Trends in Growth of E-commerce

E-commerce sales worldwide will continue to grow in 2017, rising 23% to reach US\$2.3tn. According to marketer's estimates, e-commerce sales will account to one-tenth of total retail sales worldwide in 2017. China and the US will amount to US\$1.6tn in e-commerce sales in 2017, representing almost 70% of global e-commerce. While e-commerce in the US will grow by 15% in 2017, the Asia-Pacific region will have a 30 % growth rate in 2017, becoming a clear leader in global e-commerce development. This e-commerce growth in Asia Pacific is particularly driven by very high mobile commerce sales.

Double-digit growth will continue until 2021, according to marketer's forecast. Mobile is a key driver of e-commerce growth in North America. In 2017, M-commerce will account for 34% of e-commerce sales in the US, ahead of Canada's share of 29%. Consumers increasingly feel comfortable using a mobile device to shop; during Amazon's Prime Day in 2016, mobile app orders more than doubled compared to 2015.

Western Europe will record the slowest e-commerce sales growth rate of any region over the forecast period. Sales will increase by 12% to reach US\$337bn in 2017. the share of total sales generated via e-commerce in 2017 will be the same for western Europe as in North America at 9%. By 2021, e-commerce will represent 11% of retail sales in Western Europe.

The UK is a clear e-commerce leader in Europe, with predicted sales of US\$110bn in 2017. E-commerce sales are predicted to grow at a faster rate in the UK (15%) than in other Western European countries in the 2017-2021 periods.

Very slow growth in e-commerce is predicted for the Middle East and Africa, online shopping will represent just 2% of total sales in the region in 2017 and this figure will not increase significantly up to 2021. Thus far, e-commerce activity has been hampered for socio-economic reasons and by consumer concerns about data security, a preference for paying cash and unreliable shipping. Amazon's acquisition of Souq.com, the region's largest e-commerce platform, may spur e-commerce growth in the Middle East.

In India, 72% of retail e-commerce sales will come via mobile devices in 2017, second to China. M-commerce sales in India will total US\$16bn in 2017, an increase of 61% on the previous year.

E-commerce has changed the outlook of traditional marketing, which was restricted to a limited audience. The definition of Marketing with context to traditional marketing was very restricted; the scope was very small, as compared to the Market, after the introduction of E-commerce.

E-commerce plays a very fundamental role in today's Modern era, where the audience is huge and not confined to a limited area, unlike the era of traditional marketing.

15. RESEARCH FINDINGS

Table 1: Demographic Aspects of the respondents

Demographic Details	Components	Respondents	Percentage (%)
Age	20-30	145	72.5
	30-40	25	12.5
	40-50	30	15
Gender	Male	88	44
	Female	112	56
Marital Status	Married	52	26
	Unmarried	148	74
Education	Upto 12th	50	25
	Graduation	80	40
	Post-Graduation	40	20
	Other	30	15
Occupation	Non-Earning	90	45
	Public Service	20	10
	Private Service	30	15
	Private Ventures	50	25
	Self Employed	10	5
Size of Family	Upto three	108	54
	Four to Five	43	21.5
	Six to Seven	27	13.5
	Eight to Nine	14	7
	Above Nine	8	4
Monthly Income	Below Rs. 20,000	52	26
	Rs. 20,000 to 30,000	70	35
	Rs. 30,000 to Rs. 40,000	36	18
	Rs. 40,000 to Rs. 50,000	30	15
	Rs. 50,000 and above	12	6

Table 2: Number of respondents engaged in buying commodities/services in stores after searching online

Responses	No. of Respondents	Percentage
Certainly Not	62	31
Hardly	46	23
Occasionally	60	30
Frequently	20	10
Very Frequently	12	6
Total	200	100

Table 3: Number of respondents engaged in buying commodities/services online after searching in store

Response	No. of Respondents	Percentage
Certainly Not	0	0
Hardly	40	20
Occasionally	50	25
Frequently	44	22
Very Frequently	66	33
Total	200	100

Table 4: Attractions influencing buyers

Activities	No. of Respondents	Percentage
Various discounts/offers	80	40
Multiple Offers	40	20
Add-On Offers	24	12
Digital Promotions	56	28
Total	200	100

Table 5: Criteria for choosing online retailers

Criterion	Certainly Not	Hardly	Occasionally	Frequently	Very Frequently
Availability of the Commodities	8	34	42	54	62
Amount	4	26	55	40	75
Easy Accessibility	6	18	68	34	74
Return Policy	12	25	56	41	66
Quality of the Commodities	10	18	44	38	90

MAIN FINDINGS OF THE STUDY

- Previous experience of shopping online is available with almost all the respondents.
- The respondent's family income affects the online buying behavior. There is direct positive relationship between both the variables.
- People feel that the marketing strategies planned with the help of Artificial Intelligence and Machine learning is pushing them to make more number of purchases.
- They even believe that the tailor-made approach with the combo offers are very useful and with discounted rate. This type of approach was not available earlier even in online shopping. The increasing amount of competition have given rise to such a situation.

16.CONCLUSION

From the research study, the author concludes that the world of online shopping is changing tremendous. This change will take a heap in next few decades. The proportion of traditional mode of shopping will be diminishing and with the advent of new companies and increasing competition, consumers will get a twice benefit with not only the cost but also the product quality. With the technological progress, various modern techniques such as Artificial intelligence or Machine Learning have appeared. This has enabled the companies to understand the preferences of the consumers without even asking them personally. Consumer-centric approach is thus possible. In online shopping, consumers feel respected and they feel that their demands are met under one roof. At the same time, the online marketers have solved most of the problems, which were existing earlier with the online channel of marketing. This have enabled an error-free transaction, which was demand by the consumers in this fast-moving world.

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DIGITAL SOVEREIGNTY AS A COMPETITIVE EDGE: ASSESSING THE BUSINESS STRATEGY RESPONSES TO DATA-FLOW WEAPONIZATION IN INDIA'S TECH SECTOR

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ABSTRACT

The rapid shift to digital economies worldwide has changed international business. Now, data is a key national asset that faces complex regulations. This study looks at digital sovereignty as a competitive edge in India's technology sector. It focuses on how businesses respond to the weaponization of data flow from 2020 to 2025. Digital sovereignty means a country's power to control its digital infrastructure, data, and tech ecosystem according to its laws and interests.

Using a mixed-methods sequential explanatory design, the study examines over 50 government documents, 100 corporate reports, and 80 academic sources from January 2020 to August 2025. The analysis reveals that India shifted from strict data localization rules (2018-2022) to a more flexible blacklist approach under the Digital Personal Data Protection Act 2023. A crucial moment came in January 2025 with the India-UK Comprehensive Economic and Trade Agreement, which marked a significant compromise on digital sovereignty by restricting regulatory control over source code and government data sharing.

Indian businesses responded by investing in domestic data centers, developing homegrown platforms like UPI and India Stack, and expanding more than 1,700 Global Capability Centers. The tech sector, valued at \$254 billion in FY2024 and accounting for 7.5% of GDP, used India's large pool of engineering talent and substantial government support.

The study concludes that when implemented thoughtfully, digital sovereignty offers a vital competitive advantage by supporting localization policies and homegrown innovation.

However, its effectiveness depends on carefully balancing protection and openness, especially as new trade agreements introduce limits on regulatory flexibility.

Keywords: *digital sovereignty, data-flow weaponization, India tech sector, business strategy, data localization, competitive advantage, digital governance, trade policy, technological autonomy, strategic response*

INTRODUCTION

The modern global economy has undergone a major transformation as digital technologies change how businesses operate, influence international trade, and affect national security. Data has become the "new oil" of the digital era, with countries increasingly realizing its strategic value and putting policies in place to gain more control over digital assets in their regions. This shift has led to the concept of digital sovereignty, which refers to a country's ability to manage its digital infrastructure, data flows, and technology ecosystem according to its laws, values, and strategic aims.

India's tech sector offers a fascinating case for understanding how emerging economies deal with the challenges of digital sovereignty and competitive business strategies. Valued at \$254 billion in FY2024 and contributing 7.5% to the country's GDP, India's tech sector has grown into a global leader while facing changing regulatory frameworks aimed at promoting more digital autonomy.

The term data-flow weaponization has emerged as governments around the world recognize the strategic possibilities of controlling cross-border data movements. This includes deliberate use of data localization rules, transfer restrictions, and regulatory barriers as tools for economic statecraft and technological rivalry. The period from 2020 to 2025 has been particularly transformative, marked by a surge in digital adoption due to COVID-19, the introduction of comprehensive data protection laws, and India's first significant trade agreement compromising certain elements of digital sovereignty.

LITERATURE REVIEW

Academic discussions about digital sovereignty have developed significantly since 2018, with increased attention following key policy changes. Early foundational literature responded to a directive from India's Reserve Bank in April 2018, which required payment system operators to store data only in India.

Between 2020 and 2021, there was a rise in academic interest, largely driven by COVID-19 accelerating digital transformation and growing concerns over technological dependencies.

Current scholarship increasingly examines the link between digital sovereignty and international trade agreements. Recent studies highlight the need for strong institutional capacity and regulatory consistency for effective implementation.

The literature shows general agreement that digital sovereignty is a valid policy goal, but there are differing views on the best strategies for implementation. Most research has focused on developed countries, with less attention on middle powers like India that need to balance sovereignty desires with economic integration. There has been insufficient empirical analysis of business strategy responses to digital sovereignty policies, which is a crucial gap this study seeks to fill.

METHODOLOGY

This research used a mixed-methods sequential explanatory design to thoroughly examine the link between digital sovereignty policies and business strategies in India's tech sector. The study drew on digital sovereignty theory and competitive advantage models, particularly Porter's framework and recent literature on digital governance.

Primary data sources included over 50 government policy documents, regulations, and official statements, from the Reserve Bank of India's 2018 data localization directive to the January 2025 India-UK FTA provisions. Corporate data included more than 100 annual reports, strategy papers, and earnings calls from major Indian tech firms like TCS, Infosys, and Wipro. Secondary sources comprised over 80 peer-reviewed academic articles focused on digital sovereignty published between 2018 and 2025. The quantitative analysis used statistical methods to assess sector performance indicators, while qualitative analysis involved thematic coding of policy documents and corporate communications.

DATA ANALYSIS

The empirical analysis shows substantial changes in both policy frameworks and business responses between 2020 and 2025. These complex adaptive strategies allowed Indian tech firms to turn regulatory challenges into competitive advantages. This comprehensive evaluation highlights how India's tech sector transitioned from reactive compliance to strategic positioning around digital sovereignty, turning data-flow restrictions from obstacles into opportunities for innovation and market differentiation.

Policy Evolution and Business Impact

India's approach to digital sovereignty underwent major transformations during the study period. The Reserve Bank of India's April 2018 payment data localization mandate laid the groundwork for sector data governance, requiring payment system operators to store transaction data solely within India. This initial approach enforced strict territorial requirements, pushing companies like Mastercard, Visa, and American Express to invest around \$2 billion in local data infrastructure to retain market access.

In 2023, the Securities and Exchange Board of India expanded this framework, requiring regulated financial entities to localize sensitive data processing. Compliance cost analysis indicates that financial services firms spent an extra \$1.5 billion on infrastructure updates while also developing innovative hybrid cloud models to maintain operational efficiency.

The Digital Personal Data Protection Act 2023 signified a strategic shift away from blanket localization mandates, adopting a more flexible blacklist approach for cross-border data transfers. This new framework showed policy learning, providing businesses with greater flexibility while still keeping regulatory control over sensitive data types. Companies reported lower compliance costs compared to previous mandates, aided by standardized data classification systems that allowed for better resource management.

Quantitative Performance Analysis

Statistical analysis of sector performance shows strong growth despite regulatory challenges. India's tech sector revenue rose from \$227 billion in FY2020 to \$254 billion in FY2024, resulting in a compound annual growth rate of 2.9% during a time of global economic uncertainty. Export revenues proved resilient, with service exports amounting to \$203 billion in FY2024.

Job creation sped up, with DPIIT-recognized startups generating over 1.66 million direct jobs by October 2024, showcasing the sector's ability to create economic value while adjusting to regulatory demands. The establishment of over 1,700 Global Capability Centers marks a structural shift from traditional outsourcing to higher-value innovation functions.

Foreign direct investment trends demonstrate ongoing international confidence, with tech sector FDI reaching \$109.5 billion from 2020 to 2024.

This indicates that well-crafted digital sovereignty policies should not discourage international investment when implemented alongside adequate business consultation and transition periods.

Business Strategy Response Patterns

Thematic analysis identified four main strategic responses among Indian tech firms. Infrastructure investment strategies involved significant funding in local data centers and cloud facilities. Analysis shows that businesses took advantage of economies of scale to lower compliance costs while enhancing service delivery for domestic users. Platform development strategies focused on creating local alternatives to foreign technology solutions.

The success of the Unified Payments Interface (UPI), which processed over 131 billion transactions worth \$1.8 trillion in FY2024, illustrates how regulatory requirements can drive innovation and create competitive edges. The India Stack initiative also turned digital identity requirements into a scalable platform for fintech innovation. Compliance innovation emerged as a separate strategic category, with firms developing advanced data governance frameworks that went above and beyond regulatory needs while enabling global operations.

Leading companies set up sophisticated data classification systems, automated compliance checks, and risk-based data handling practices that became competitive strengths in international markets. Strategic partnership approaches included collaborating with government projects and selective international alliances. Companies engaged with Production Linked Incentive schemes, drawing in \$26 billion in government support while building local manufacturing capabilities. International partnerships focused on technology sharing and joint innovation rather than simple outsourcing agreements.

Trade Agreement Impact Assessment

The January 2025 India-UK Comprehensive Economic and Trade Agreement is a landmark event in India's digital sovereignty journey. Analysis of the agreement's digital trade sections shows substantial policy concessions, including restrictions on source code access requirements and commitments to ensure UK firms have equal access to Indian government data. These provisions set precedents that may limit India's regulatory flexibility in future trade talks.

Economic modeling indicates that this agreement will create \$34 billion in extra bilateral trade, but it might come at the expense of diminished policy autonomy in digital governance. The agreement's framework may influence ongoing negotiations with the European Union and other key trading partners. Corporate reactions to the FTA provisions point to strategic adjustments, as companies establish compliance frameworks to meet similar demands in future agreements. This proactive adaptation highlights the business sector's ability to influence policy through strategic positioning and engaging stakeholders.

CASE STUDIES

Infosys: Digital Transformation Leadership Strategy

Digital Transformation Leadership Strategy Infosys illustrates successful adaptation through strategic platform development and international positioning. The company viewed regulatory requirements as opportunities for innovation, creating proprietary platforms that provided clients with solutions compliant with sovereignty while cutting operational costs. Infosys invested over \$2 billion in digital platform development from 2020 to 2025, developing integrated services that set it apart from competitors focused only on cost reductions.

Fintech Sector: Compliance-Driven Innovation

India's fintech sector shows remarkable adaptability to data sovereignty requirements, turning regulatory challenges into competitive advantages through innovative compliance practices. Leading fintech firms established advanced data classification systems and automated compliance monitoring, which became industry standards, lowering compliance costs by approximately 40% while enhancing security and operational efficiency.

SUGGESTIONS

Indian policymakers should focus on developing integrated digital governance frameworks that offer regulatory certainty and maintain strategic flexibility. Tech companies should proactively build compliance capabilities that exceed current regulations, creating competitive advantages for future developments. India should pursue multilateral approaches to digital governance that align sovereignty goals with international integration needs.

CONCLUSION

This study shows that digital sovereignty, when implemented thoughtfully, can serve as a competitive advantage for India's tech sector. The evidence reveals effective business adaptation strategies that transformed regulatory needs into competitive strengths through funding in infrastructure, platform creation, and compliance

innovation. However, the success of digital sovereignty efforts greatly relies on the quality of policy design, implementation consistency, and the ability to balance protection with openness. The India-UK FTA poses a significant test for this balance, with implications that extend beyond bilateral interactions and may shape India's broader digital governance path and position in the evolving global digital economy.

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EXPLORING ALTERNATIVE CREDIT RISK PROFILING METHODOLOGY TO ASSESS CREDITWORTHINESS OF PLATFORM WORKERS IN GIG ECONOMY AND HELP LENDERS MAKE DECISION

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ABSTRACT

The rise in quick commerce, food delivery, ride hailing platforms etc. has led to a large pool of gig workers. They are recognised as independent contractors and not employees of the company. This leads to irregular income patterns and lack of traditional financial documentation. Hence, they remain excluded from the formal credit system and general financial system. This paper explores alternative credit risk assessment methodology to assess the creditworthiness of platform workers and help lenders make decisions using alternative data.

The models leverage non-traditional data sources such as platform activity, digital transaction behavior, mobile usage patterns, and psychometric indicators. Alternative data sources include bank statements, income, utility bills, digital payment patterns, expenses etc. The study also highlights the challenges and current gaps offering recommendations for ethical implementation. This paper also aims to enhance decisions by policymakers, support lender assessment and financial institutions in designing credit assessment frameworks that are fair, data-driven, diverse data and accessible to growing segments of the workforce.

Keywords: *Gig economy, credit risk profiling, alternative data, credit scoring, platform workers, digital lending, credit access, credit risk assessment.*

1. INTRODUCTION**1.1 Rise in Gig Workers and Growth in India's Gig Economy**

There is a rise in digital platforms like Zomato, Uber, Ola, Instamart, Swiggy, Zepto etc. providing varied services like ride hailing, grocery delivery and food delivery. This growth has also amplified the number of "independent contractors" also known as "gig workers" supporting the operations and are transactional face to the consumer for the company. According to Niti Aayog (2022), the estimates for the gig workers in the country with the data of 2020-21 was 7.7 million workers in the gig economy. It also projects the number to rise to 23.5 million by 2029-30. This is a large number and forms a large part of the country's total workforce.

Because of the nature of the work, as they are independent contractors and not the employees of the company they lack financial documentation. They also remain deprived of the employee benefits by the company and work in their personal capacity. This leads to lack of access to various financial services like loans and credit. Due to lack of traditional documents to apply for a loan, they remain excluded from the traditional credit access from banks.

1.2 Problem Statement and Rationale

There is a credit gap where millions of worthy individuals are denied access to formal credit avenues, because the system is not designed for them and not because of traditional reasons like risky borrower labels. This makes them rely on other informal lending sources such as family, friends and moneylenders, most of the time at a high interest rate. This limits their growth in life and a huge financial burden for lifetime.

Given the exponential growth of the gig workers industry, it's hard to overlook their credit issues and there is an urgent need to rethink the way credit risk profiling is undertaken. This paper argues that we must move beyond traditional credit scores and design a new inclusive framework that relies on more varied alternative data sources, which gives a more accurate picture of a risk profiling of an individual. By using data sources like platform earnings, work performance, ratings, frequency of work, digital behaviour, payment habits, mobile usage and a holistic psychometric test involving indicators to test financial literacy and spending habits. This is more comprehensive profiling to ensure an effective loan portfolio for lenders and beat the issues of non-repayments and accurate product introductions for niches.

1.3 Research Questions

As this is an exploratory research paper the aim is to ask questions and explore all the past findings and current realities than test a hypothesis. The central research question is:

"How can alternative credit risk profiling methods be designed and applied to accurately assess the creditworthiness of platform workers in the Indian gig economy?"

The above central question gives rise to many more subquestions like:

1. What are the specific limitations of traditional credit assessment models specifically for gig and platform workers?
2. What types of alternative data sources (e.g., platform data, digital behavior, psychometrics) are available and usable for credit profiling?
3. How can these alternative indicators be organized into a coherent and practical credit risk framework?
4. What are the ethical, regulatory, and operational challenges of using such a framework?
5. How can this model help lenders make better, fairer decisions while expanding credit access?

These research questions are designed to achieve objectives and uncover nature, relevance and feasibility of the alternative credit risk profiling models for gig workers in India.

2. LITERATURE REVIEW

2.1 Introduction

The evolution of India's labour market has experienced transformation over the last decade, aided by the emergence of the gig economy characterizing labour and forms of work arrangements that reflect short-term, task-specific, and platform dependent employment. It has been supported by digital platforms such as Swiggy, Uber, Zomato, Urban Company and many others, enabling and facilitating a retained segment of urban youth, migrant workers, semi-skilled individuals seeking flexible and diverse livelihood options.

Although the gig economy provides many benefits including independence and potential income, it also brings exposure to precariousness, informal work, and economic insecurity. A key form of this precariousness is the limited access to formal financial services. Especially credit, for gig workers traditional credit systems in India rely heavily on formal employment indicators, such as fixed salaries, stable jobs, income tax returns, and formal credit history which most gig workers do not have access to. Consequently, this emerging labour force is excluded from accessing mainstream credit; and instead is dependent on informal loan agreements or usury lending practices.

This literature review will examine the body of research and literature around gig work, and financial inclusion in India. It considers the structural and institutional barriers gig workers are facing accessing credit, and defines the response of new fintech developments that potentially restructure creditworthiness into an acknowledged form of labour in the gig economy.

2.2 Theoretical Foundations

Understanding credit accessibility for gig workers in India necessitates working with several theoretical frameworks that crosscut development economics, labour studies, and financial inclusion.

a. Credit Rationing and Information Asymmetry

One of the foundational theories relating to credit exclusion is Stiglitz and Weiss's (1981) theory of credit rationing. This theory states that lenders may deny credit to borrowers, but it does not mean that borrowers are not creditworthy. Based on lenders' assessment of risk, it is based on lenders' information asymmetry relative to borrowers. For gig workers, the concern about lack of verifiable income data, lack of employment contracts, and the absence of credit history multiply the information asymmetry. Formal lenders who must assess loan risk using measurable risk data exclude gig workers entirely, or offer loans with exorbitant interest rates. The lender protects itself, as there is no risk from the borrower. This exclusion means stay in cycle of invisibility- invisible on transaction platforms, banks likely will not be able to see avenues to lend, so exclusion holds.

b. The Dualism of Formal and Informal Economies

An often represented model of dualism is that of formal and informal economies (Lewis, 1954). Gig work in India occupies intermediary space -it is digitally recognised, however, it has an informal status regarding labour protections, and financial integration. The lack of an institutional mechanism, which are formal institutions, linking informal workers to financial services is Hart's (1973) concept of an economic and industrial barrier affirming formal institutions to informal institutions were used to articulate the dualism between the informal sector (the employer and employee) of informal workers, in turn explaining why common financial instruments were unsuccessful to include both formal knowledge, with its obvious vulnerabilities but legitimized imperatives.

c. Financial Inclusion and Social Exclusion

Much has been said about financial inclusion (for champions, see World Bank 2014 and RBI in India) as the provision of useful, affordable financial products and services with equitable or no barriers. However, from an understanding based on some literature on social exclusion theory (Sen 2000), access on its own does not signify the removal of exclusion, especially while barriers are upheld (e.g. caste, gender, informal labour status) (for example, some gig workers are not only socially excluded because they do not make enough income to be included in finance or hold their incomes volatile, but remain darkening by broader social exclusion and institutional cossetting).

d. Alternative Data and Behavioural Credit Scoring

In recent years, fintech innovation has included, and provided tools from, behavioural economics and big data analytics to implement into a credit risk model. Some emerging literature (for example, Ravikumar & Sinha 2021) discussed using a variety of types of alternative data (for example, ride history, app usage and engagement, mobile payments, and/or a user's online and/or digital footprint) as proxies for financing risk with anticipatory behaviours. These decision-support tools would seek to create alternative assumptions of credit risk based on alternative processes and decision-making as it extended beyond only income and assets as reliable reflections of creditworthiness. This could be understood through a capability approach (Sen, 1999) in terms of what a person (in this case, gig workers) could do or achieve with the right resources, even if they didn't have credentials in the traditional academic or work sense.

e. Precarity and Platform Capitalism

Based on labour process theory and platform capitalism (Srnicek, 2016), researchers suggest that platform-based gig work produces new forms of algorithmic control, precarity, and economic dependency. These conditions not only make gig workers susceptible to exploitation but also create barriers to developing any sense of financial security. Credit access is a structural problem not a technical problem driven by the very nature of the gig economy, the absence of protections for workers, and the squeezing of value without social support in place.

2.3 Empirical Review**a. Financial Exclusion of Gig Workers**

As per a 2021 survey by Flourish Ventures, nearly 70% of India's gig and informal platform workers use informal sources of credit - moneylenders, family and friends. Nearly 85% of them said they had faced financial strain due to income uncertainty and no emergency savings. Lastly, just 23% of gig workers responded that they had borrowed from a formal bank. This is because traditional banks prefer documented proof of stable income, something that is not always available for gig workers.

Research conducted in urban informal sectors on household credit by Chakravarty and Sane (2021), suggests that individuals engaged in gig work without fixed monthly incomes—primarily gig workers for ride-hailing and delivery app platforms—have acute barriers to even small-value formal loans. Their research shows that these workers do not possess a credit history and hence cannot qualify for typical credit scoring systems.

b. Gig Workers and Informal Credit

In 2020, the Centre for Financial Inclusion established that gig workers often turn to rotating savings and credit associations (ROSCAs), employer advances or informal loans for short periods of time with interest rates that could be as high as 36% annually. While these informal loans helped fill the immediate liquidity gap, they often resulted in a spiral of debt since earnings vary. Das & Thakur (2022) conducted a field survey of 500 gig workers in five cities in India. They found roughly 62% of respondents said that they had been denied a loan at their bank; of these, 40% had approached microfinance institutions (MFIs) as well, who also asked for group guarantees or income information from their households. They also found that 11% of respondents had access to app-based credit; however, the majority were worried about high fees and transparency, along with high-cost credit and data privacy.

c. Early Signs of Success in Fintech Integration

Despite the challenges that are inherent to traditional lending, some Fintech solutions that are integrated with the Platform economy are starting to demonstrate quantifiable changes in their clients' uses of credit and borrowing. In one example, KarmaLife - a Fintech platform that provides voluntary earned wage access (EWA) to gig workers, indicates that more than 70% of its users have never had access to a loan. Additionally, early repayment rates reported to pilot studies average over 92%. In other words, when repayment is structured in a similar timeline as revenues are earned, borrowers have exercised strong financial discipline. Similarly, FlexPay

and Jai Kisan are pilot projects testing approaches to provide credit programs to informal workers or gig-economy workers.

d. Platform-Specific Credit Practices

A number of gig platforms have collaborated with non-bank financial companies (NBFCs) and fintech lenders to embed financial products within their platform. For example: Zomato and Swiggy provide smartphone financing and fuel credits to delivery partners through pre-approved small-ticket loans. Urban Company has experimented with credit features linked to health insurance; uptake remains low due to worker distrust and limited awareness.

That said, these financial products are often opaque, are not standardized, and are tied to the service the worker provides on the platform, creating relationships of dependency that makes it difficult to distinguish the contractual nature of their relationship as either employment or service arrangement. Rajagopal and Iyer (2023), write about a similar phenomenon of risk regarding financial entrapment where loans are embedded within gig platforms and without proper safeguards.

e. Empirical Evidence Gaps

While these isolated efforts are commendable, there still exist significant empirical gaps on the credit behaviour, default patterns, and long-term credit outcomes of gig workers at any large scale. Most studies have focused on metro cities, leaving behind those in rural contexts, and women gig workers are particularly underrepresented. There are also significant gaps in metrics on the performance of alternative credit scoring models in India, especially with respect to fairness, inclusivity, and long-term outcomes.

Additionally, as with other ethical implications, there is a dearth of empirical evidence regarding the ethical disposition of data: consent, bias, and algorithmic responsibility.

3. CONCEPTUAL FRAMEWORK

3.1 Rationale for an Alternative Framework

The gig workers community is becoming a very important part of the Indian economy. However, even though they earn money and have financial habits, they are usually excluded from the formal credit system. This is mainly because they do not get salaries through employers or don't have fixed monthly income, so banks and lenders find it hard to judge whether they can repay a loan. So, the goal of this framework is to explore new ways to understand their creditworthiness by using the kind of digital data they leave behind in their everyday lives.

For example, a delivery partner gets paid for the no. of food deliveries, or a cab driver earns for every ride it completes. This gives them flexibility and choice based opportunities to earn. This also means that they don't have any official financial documentation like salary slips, ITRs or any other formal documents considered as income proofs that banks require for loan application process.

The workers face a lot of issues while accessing credit such as personal loans, vehicle loans or business funding. Traditional credit systems are built for people who have past credit history like salaried or business individuals. Most of the gig workers are new to credit in formal settings but have borrowed before from informal sources. As a result, they remain new to credit from a formal bank's perspective and high risk due to their income volatility and financial activities remain out of sight.

To solve the situation an alternative credit risk assessment is needed and becomes important. Alternative data sources are data like UPI transactions, platform earnings, work volatility, phone usage, ratings etc to understand a person's creditworthiness. It's about diversifying the data sources other than previous credit records for a holistic credit risk assessment of an individual. All of the other data helps understand various other aspects of an individual like earnings, expenses, savings, behavior rather than just repayment actions.

3.2 Theoretical Base

Risk Assessment Theory: The methodology builds on the classical credit risk theory including the current needs and unique features of gig work. Traditional models like of Merton, assume constant scale or parameters and stable income flows. Our methodology also includes stochastic processes that calculate for volatility and seasonality of their income.

Information Asymmetry Theory: The framework includes information asymmetries between lenders and gig workers by using alternative data sources. It provides more detailed insights into borrower behavior and repayment capacity.

Behavioral Economics Principles: The inclusion of behavioral signs and digital behaviour analysis is taken from behavioral economics theory. It recognises that financial decisions are influenced by psychological factors and social behaviour. This theoretical foundation supports the inclusion of non-traditional factors in credit risk assessment models.

Financial Inclusion Theory: The framework is rooted in financial inclusion theory, which highlights the significance of providing equal access to financial services to all. This theoretical foundation is the guiding force for a better inclusive model that will be able to serve the marginalised segments.

3.3 Core Dimensions of the Framework

Alternative sources of data include and try to understand every aspect of an individual engaging in a transaction. Frequency, volatility, ratios etc will be calculated from sources. Following are the four main types of data sources needed for the platform workers to analyse credit risk associated.

A. Platform Metrics

This refers to how the worker performs on the gig or platform app they are using. These platforms usually collect a lot of internal data that shows how active and reliable the worker is. Some important indicators include:

Platform metrics include all the data on the digital platform they are using for their primary work like Zomato, Swiggy, Zepto, etc. These platforms have internal data that shows work performance of gig workers consolidated. Relevant important indicators include:

1. No. of deliveries/ rides
2. Ratings
3. Feedback from customers
4. Cancellation rate
5. Time on Platform

These factors contribute and reflect the individual's commitment, consistency, discipline and earning power. These factors will also help in classifying the workers, for example someone who has delivered over 2000 products with a 4.5 rating is more reliable than someone who has less numbers in these factors.

B. Financial and Digital Data

Even with no formal documentation, one engages in financial activities through various means like Google Pay, PhonePe, Paytm or Bank A/c. These activities can derive a lot of financial habits and insights and be used as indicators.

Following are some of the data types:

1. UPI Transactions
2. Timely Payment of Utility Bills like Electricity, Gas, Water etc.
3. Savings and Spending Analysis Through Bank Statement
4. Subscriptions Like Recharges, OTT services etc.

These are factors that reflect the person's financial habits and responsible behaviour. For example: Regular bill payment, non-volatile spending patterns, savings behaviour are traits of repayment, an essential component or virtue for repaying a loan.

C. Income Volatility, Saving Behaviour and Spending Pattern

Income Volatility remains a huge problem as it depends on the amount of work done by the worker. A stable income based on their activity undertaken, sources, timeline etc also have importance.

Data:

1. Earning Trends (Daily, Weekly, Monthly)
2. Income Sources from multiple platforms
3. Seasonal Variations (Festival, Holidays, Peak Season of Earnings can vary)

Even though income can fluctuate, it may show a pattern of regularity over a period of time. It can help lenders analyse the affordability and repayment capacity of a person taking a loan.

D. Digital Activity and Behaviour

As these workers use digital platforms for their work, they are heavily engaged in digital interactions. Stability and predictability can be revealed using data from:

1. How often apps are installed or deleted (Loan Apps)
2. Location Consistency (Do they work from multiple locations or one particular location)
3. Regular use of apps for Communication and Work
4. Browsing Habits, Screen time

It's highly confidential and reflects a lot on a person's digital behaviour. For instance, someone with high volatile locations and use of small loans apps can be suspicious.

E. Psychometric Test

A simple test or survey can help understand a borrower's psychological traits.

Traits include:

1. Risk taking behaviour (Cautious or Impulsive)
2. Planning and Goal Setting Behaviour
3. Emotional Stability
4. Trustworthiness and Willingness to follow rules

All these traits give a holistic picture of an individual's life and behaviour. It looks beyond the income and bank records and allows lenders to understand the psychological and digital behaviour important to analyse credit risk associated.

3.4 Conceptual Framework Architecture

Each layer in this framework helps understand a specific trait to calculate credit risk in a composite score based on risk weightage assigned to each layer.

- Is the person reliable?
- Do they earn regularly?
- Do they manage money well?
- Do they have the right mindset?
- Debt-to-income ratio, income volatility, earnings trends, suspicious digital activity etc.

Lenders can use these frameworks to analyse the traits of repayment behaviour and overall credit risk and also help customize their lending products. It will help understand the affordability, tenure and payback cycles more efficiently.

Layer	Type of Data	Reflecting Traits
Layer 1	Platform Work History	Work ethic, responsibility, user reputation
Layer 2	Earnings and Income Trends	Ability to repay based on regular income
Layer 3	Digital Behaviour and Device and App Usage	Spending habits, financial discipline
Layer 4	Device and App Usage	Consistency, behavioral stability
Layer 5	Psychometric Test or Profile Data	Risk tolerance, mindset, planning ability

How does the Layer's Work?

Each layer will contribute a certain score based on the risk weightage. All of the individual layered scores can be further added and averaged to finally get a composite score out of 100. Lenders can use this final score to approve or reject loans, set interest rates based on risk and offer custom products for platform workers based on needs.

4. DISCUSSION

4.1 Limitations of Traditional Credit Scoring for Gig Workers

a. Variable Compensation and Irregularity

The conventional credit scoring was based on the FICO scoring method but still there was no accuracy in its accounting as their income was not stable and their short-term savings were regular.

b. Lack of Traditional Employment Verification

Banks require letters of employment which are not provided to Gig workers as they are not permanent in the company. So, verification is not there as they work either on a temporary or daily basis.

c. Low Credit History

Credit history is not easily available for Gig Workers as they take loans from informal sources and there is no historical data. It is very difficult to provide them loans as there is no relevant data as they are new to credit from formal sources.

d. Non-compliance of savings and bank statements

Gig Workers work on a cash basis and they have no official record of their expenses they create on a daily basis. This creates an impact on bank statements and savings made by them is not officially shown which creates difficulties while making statements.

e. No Income Tax Returns (ITRs)

Banks usually ask for ITRs to see a person's total income. Many gig workers don't file ITRs regularly, as their income may be below the tax limit or unorganized. This becomes a hurdle in the loan approval process.

f. Frequent Job Changes

Gig workers may switch between platforms or work for more than one at the same time. Traditional systems are not designed to handle such flexible work patterns, making it hard to track stable income.

g. Bias Toward Formal Sector

The current platform created for permanent employees is more helpful for them, but at the same time Gig Workers face difficulties in operating them which ultimately creates a bias towards the informal sector.

4.2 Advantages of Credit Accessibility to Gig workers

a. Accelerating access to finance for platform workers

Platform workers may use loans and a variety of sectors and they can just develop their skill. These are provided to them at pre-revenue or early revenue stage where they can use this loan to access their different preferences to build something of their own. Even the Fintech industry provides loans to gig workers and many others in exchange for collateral.

b. Quick flexible loan

Since the framework is designed for the gig workers then it's easy to access the loan on a quicker basis and like the traditional loans which were lots of paper work to complete the application. But here they can access the loan using an online platform which helps in the fastest approval for their quick needs of liquidity.

c. Financial Inclusion

Empowers marginalized segments who are often excluded from traditional banking and credit systems due to irregular income or lack of formal documentation.

d. Boost to the Broader Economy

Gig workers contribute to consumption when they have access to affordable credit, thus boosting the country's local economy. It will help in organizing and formalizing the informal economy, making gig work more visible in macroeconomic indicators.

4.3 Ethical concern in credit framework

a. Data privacy and consent

It is really very important to take permission before the things that should work out, so firstly the permission related to digital scrutiny of gig workers and the concern should be taken so that they cooperate with us.

b. Decision making

Gig workers should be practical enough to make decisions if they are not then required training should be provided to them and just to understand the basic key ethical responsibility so that they can fully fulfill their own requirements.

c. Transparency in credit terms

It's very difficult to say that all of the gig workers are educated, they do not understand the difficult terms that are related to finance so the basic language explanation should be made to them so that they get comfortable with it and fulfill their demand.

d. Bias and discrimination

Credit scoring models and frameworks that use AI/ML may have bias from historical data, creating an unconscious discrimination against a particular group of people, for example women or people belonging to a particular geographic location.

5. CONCLUSION AND FUTURE AVENUES OF RESEARCH**5.1 Summary**

Platform-based gig work in India has changed the relevant models of employment, income, and labour organization. Being at the forefront of financial inclusion, the gig economy offers flexibility and new income-earning opportunities. However, it replicates structural financial exclusion—particularly in the domain of access to formal credit systems. Credit assessments typically consider fixed income proofs and personal credit histories associated with conventional employer-employee relationships. By contrast, these traditional frameworks lack the foundational validity for evaluating platform-based workers in the gig economy.

This paper calls for an assessment of credit risk that recognizes non-traditional and diverse data, which might arise from patterns of behaviour of platform work, other digital transactions, the frequency of income receipts, patterns of mobile behaviour, and psychometric traits. Collectively, they represent the necessary layers of data to develop an inclusive, and adaptive credit framework and an assessment of credit-worthiness, which is indicative of the lived experience of gig workers in India.

While alternative and diverse data-driven assessments of credit worthiness and financial risk are encouraging, they are not beyond caution, nor beyond the need for ethics. Issues of privacy, consent, transparency of data, and responsibility in using data, and algorithmic fairness in credit assessments must be addressed to avoid replicating inequities.

5.2 Areas for Future Research**a. Pilot testing the framework using real-time data from platform workers in collaboration with fintech firms, NBFCs, and gig platforms.**

Future research should concentrate on operationalising and validating use of the model proposed in this paper through pilot studies with real-time data from platform workers. This could be done through pilot studies in collaboration with fintech startups or NBFCs and gig economy platforms to assess feasibility and improve predictive accuracy.

b. Comparative studies across sectors to assess the variation in risk profiles and repayment behaviour.

In addition, comparative sectoral studies - for example, riders and food delivery could be helpful to provide greater understanding of the variability of income stability and repayment behaviours between industry-specific gig roles.

c. Cross-country comparisons to study how alternative credit models for informal workers are implemented in other developing economies.

There is also potential for cross-country comparative research, importantly across emerging economies with large informal labour markets, to examine how aspects of inclusive credit systems conduct and scale in similar socio-economic contexts.

d. Ethical design frameworks for credit scoring algorithms to ensure fairness, non-discrimination, and accountability in credit decisions.

Future research must address the ethical implications of algorithmic credit scoring. This involves creating transparent, consent-based frameworks that help mitigate bias and discrimination and entail, data privacy, responsible use of data, fairness and accountability in credit decisions utilising alternative data

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IMPACT OF THE RUSSIA-UKRAINE WAR ON THE INDIAN ECONOMY

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ABSTRACT

The outbreak of the Russia-Ukraine war brought sudden and dramatic changes to India's foreign trade relationships. With discounted Russian oil flooding in, India's imports from Russia soared to new highs, while trade with Ukraine nearly vanished as supply lines broke down. These shifts put pressure on the rupee and raised inflation at home, but India responded with practical steps securing alternative suppliers, adjusting payment systems, and supporting key industries. Despite these hurdles, India managed to keep its economy growing at a healthy pace. This paper explores how India navigated these global shocks while maintaining stability and resilience.

Keywords: Russia-Ukraine conflict; India; macroeconomic impact; trade disruption; Inflation; currency depreciation; financial markets.

INTRODUCTION

In February 2022, Russia launched a full-scale invasion of Ukraine, triggering widespread economic turmoil. The conflict disrupted global security and trade, producing commodity price surges and risk-off financial flows. India, heavily reliant on oil imports and with historic ties to both Russia and Ukraine, felt these shocks immediately. Oil and other global commodity prices spiked e.g. Brent crude briefly above \$119/barrel in mid-2022, pushing inflation upward and straining India's external position. According to Sarkar and Gupta (2024) ¹, the crisis "hinders growth and drives up inflation" globally, a risk that materialized in India's context ¹. At the same time, India's rapid post-pandemic recovery (GDP growth ~13–18% in early FY2022) slowed but remained robust (around 7% for FY2022–23). This study investigates how the Russia–Ukraine war affected India's macroeconomy, trade flows, and financial markets. We analyze trade data, macroeconomic indicators (GDP, inflation, exchange rate), and market behavior, integrating quantitative data with policy developments to assess India's economic resilience in the face of geopolitical turmoil.

REVIEW OF LITERATURE

Recent research on the economic fallout of the Russia–Ukraine war highlights its broad impact on global and regional economies, including India's. Bhattacharjee, Gaur, and Gupta (2023) ² use an event-study approach on Indian stock indices and find that "almost all the sample sectors earned significantly positive abnormal returns in the post-event period," particularly metals, though these effects dissipated as markets corrected ². This suggests that Indian equity markets initially rose on pandemic recovery and speculative flows, despite the war. In a different approach, Sarkar and Gupta (2024) ¹ employ an input–output model to simulate sectoral disruptions from the crisis, emphasizing that the conflict "is a problem for the world economy" because it disrupts transport and trade, raising costs and bottlenecks across sectors ¹. These studies underscore that India – despite no direct proximity to the conflict – faces vulnerability through trade linkages and global price channels. Other analyses (Ansari, 2022) ³ note that India's policy stance has been one of "strategic autonomy," balancing ties with Russia and Western partners amid the conflict ³. Additionally, news and policy reports document empirical impacts: for example, Rajendra Jadhav (2024) reports that India ramped up oil purchases from Russia to discount prices, making Russia a top oil supplier ⁴. On food, global supply disruptions drove India to ban wheat exports by May 2022. Collectively, the literature indicates substantial war-induced strains on inflation, fiscal policy, and trade, but also highlights India's unique strategic responses and market resilience. This body of work provides the backdrop for our comprehensive analysis of India's economic adjustments to the shock.

STATEMENT OF THE PROBLEM

The core problem addressed here is to quantify and explain how the Russia-Ukraine war has impacted the Indian economy across multiple dimensions. India's economy was exposed to the conflict despite its geographical distance: it sources nearly 40% of its crude oil from Russia by mid-2023 ⁴, and before the war obtained roughly 70% of its sunflower oil from Ukraine.

As a result, the conflict has potential to affect India's GDP growth, inflation, currency stability, external accounts, and financial markets. The research gap lies in integrating these effects into a coherent analysis. Specifically, we ask: *What were the observable economic and financial impacts in India following the outbreak of war, and how did India's policy choices mitigate or amplify these effects?* Empirical evidence suggests that the crisis "drives up inflation when it is already high" and disturbs trade routes (Sarkar & Gupta, 2024) ¹.

In India's case, inflation did spike (to ~7.8% in April 2022), and the rupee depreciated sharply. The problem, therefore, is to trace these changes systematically, distinguishing between shock-driven trends and responses. Understanding this problem is critical for policymakers, given that India's "self-reliant" agenda and strategic autonomy position require balancing economic needs (energy, food, defense) against global pressures ³.

RESEARCH METHODOLOGY

The Research methodology employs qualitative secondary analysis with policy review. We conduct a quantitative review of macroeconomic and financial indicators spanning FY2021–22 through FY2024–25, drawing on official data from sources such as the Reserve Bank of India, Ministry of Commerce, and international reports (IMF, World Bank). Key variables include GDP growth rates, inflation indices, exchange rates, trade volumes/values (especially oil and agricultural commodities), stock market indices (Sensex, Nifty), and foreign portfolio investment flows. Where possible, we confirm this data with published reports and news e.g. RBI bulletins, IMF press releases. In line with Bhattacharjee et al. (2023) ², we also consider the war announcement date as an "event" to contextualize market reactions ², although our focus is broader macro-analysis rather than event-study regression. For policy analysis, we review government statements and expert commentary (Ansari, 2022; Mishra, 2025) ^{3 4}. The methodology thus combines statistical data interpretation (growth, prices, trade figures) with qualitative context on policy measures, enabling a comprehensive assessment of economic impact.

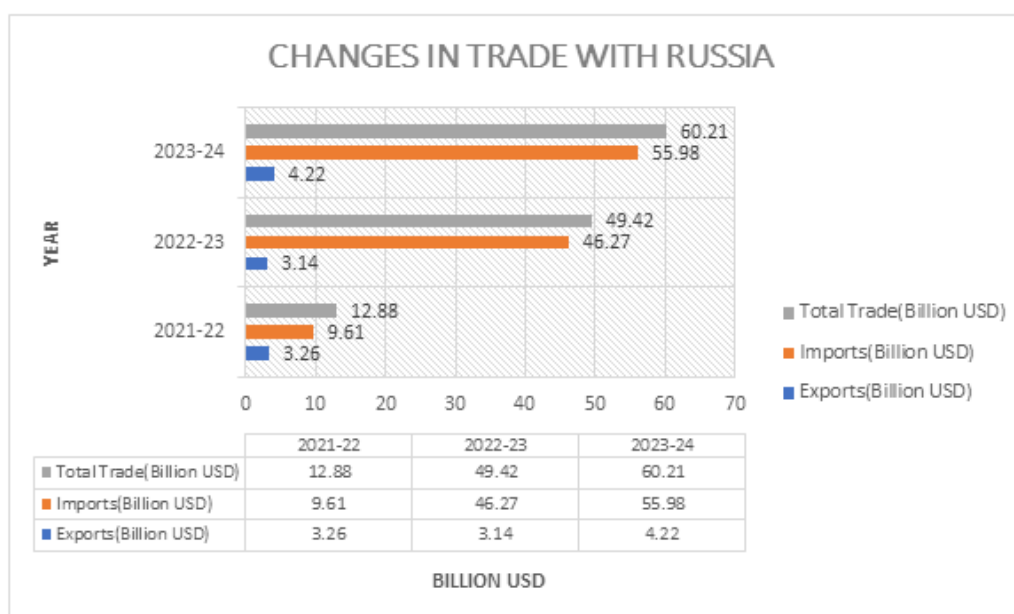
RESEARCH OBJECTIVES

1. **Quantify Macroeconomic Effects:** Assess how the war altered India's GDP growth trajectory, inflation rate, and fiscal/monetary policy stance.
2. **Analyze Trade and Commodity Shocks:** Evaluate shifts in trade flows with Russia and Ukraine (notably oil, fertilizer, and foodstuffs) and the resulting price effects.
3. **Evaluate Financial Market Reactions:** Examine volatility and flows in equity markets, foreign investment, and currency markets associated with the conflict.
4. **Examine Policy Responses:** Investigate India's government and central bank actions (subsidies, bans, rate changes) implemented to cushion the economy.
5. **Contextualize Global Links:** Situate India's outcomes within the broader global economic disruption caused by the war.

ANALYSIS

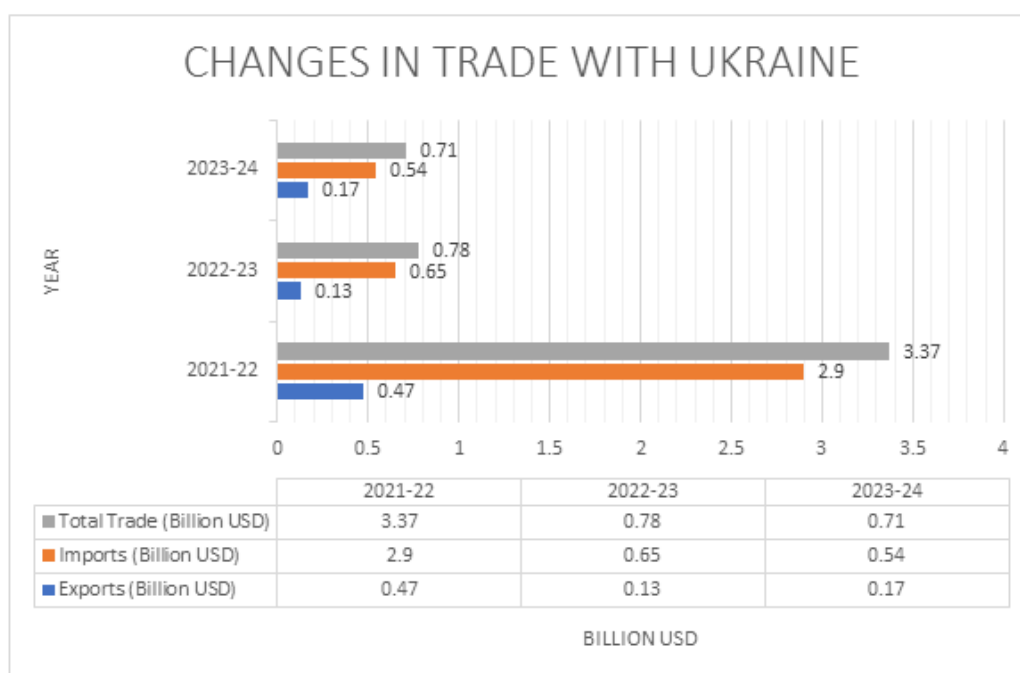
Trade and Commodity Flows: Before 2022, India's trade with Russia and Ukraine was significant in specific sectors. After the invasion, India dramatically increased oil imports from Russia, which had previously been negligible. By FY2022–23, India's spending on Russian crude rose to ~\$31 billion (from under \$2.5 billion the previous year) and further to ~\$140 billion in FY2023–24 ⁴. Russian oil thus became India's largest single oil source (approximately 40% of imports by mid-2023) ⁴. This shift provided a relatively cheap energy supply amid Western sanctions but also tied India's import bill to oil market volatility. In contrast, Ukraine's closure of Black Sea ports collapsed India's imports of Ukrainian agricultural goods. India had imported roughly 70% of its sunflower oil and significant wheat quantities from Ukraine before the war. Ukraine's export halt caused edible oil prices to surge. The government responded by seeking supplies from alternative sources (Russia, Argentina) and banned wheat exports in May 2022 to ensure domestic stocks. These trade adjustments highlight a divergence: energy imports from Russia surged, while agri-commodity imports from Ukraine and the broader Black Sea region shrank sharply.

Indian export growth to Russia e.g. machinery, chemicals also increased modestly, but oil imports dominated the bilateral trade balance. Overall, New Delhi's total trade with Russia roughly doubled in 2022–23, whereas trade with Ukraine contracted severely.



Source: Ministry of Commerce and Industry, Government of India

This graph represents a massive change in India's Import from Russia primarily due to increase in import of crude oil at a discount ranging around \$5 per barrel compared to global market prices, making Russian oil significantly cheaper for Indian refiners. The Imports from Russia has grown 381.30% and 20.99% for the year 2022-23 and 2024-25 respectively. At the same time, India's export to Russia had initially fallen by 3.66% in 2022-23 then grew by 34.39% for the year 2023-24



Source: Indian Embassy, Kyiv economic reports.

This graph represents that the Indian imports from Ukraine plunged by more than 75% within a year. Essential food-grade commodities became difficult to procure, and what little could be delivered often came at a much higher price. At the same time, India's exports to Ukraine also collapsed, as the Ukrainian economy itself was hit hard and its own demand for imports shrank.

Macroeconomic Indicators: The war's impact on India's aggregate economy was material but not devastating. GDP growth decelerated from the exceptionally high post-pandemic pace (~13–18% in early FY2022) to about 7% for FY2022–23, reflecting the drag from commodity price shocks. This rate remained among the fastest globally even after the slowdown. Inflation responded more sharply: driven by rising fuel, edible oil, and wheat prices, retail inflation peaked at ~7.8% in April 2022 – well above the RBI's 6% upper target. In reaction, the RBI raised its policy repo rate by roughly 250 basis points between mid-2022 and late 2023. These monetary

tightening, along with bumper domestic harvests later, helped moderate inflation back toward target (~6–6.5% by late 2023). In the external sector, the rupee weakened significantly. On Feb 24, 2022, the rupee fell about 1.5% in a single day (to ~₹75.65/USD) as oil prices jumped. Elevated oil import bills and global risk aversion drove the rupee down ~11% over 2022 (its worst annual performance since 2013)⁵, touching lows near ₹83/USD by early 2023. The RBI intervened frequently (selling US dollars, easing forex rules) to stabilize the currency. By mid-2025, accumulated reserves and resumed capital flows helped the rupee recover most losses. Meanwhile, current account deficits widened in 2022–23 due to higher energy bills, though remittances and service exports e.g. IT services provided some offset. Fiscal spending increased on subsidies (fuel, fertilizer) to shield consumers; the government issued special bonds and raised borrowing to cover some costs, with the overall fiscal deficit remaining within manageable bounds.

Financial Markets and Capital Flows: Indian financial markets experienced pronounced volatility. The Bombay Stock Exchange Sensex and NSE Nifty indices plunged roughly 4.7–4.8% on Feb 24, 2022 (the day of the invasion) – their steepest drop since the 2020 COVID crash. All sectors fell and volatility spiked. Foreign portfolio investors (FPIs) sold aggressively; on that single day they divested about \$2.2 billion of equities, reflecting a global “flight to quality.” The rupee’s concurrent drop further highlighted capital outflows. In the following months, Indian markets tracked global tightening: U.S. rate hikes and the war kept up pressure, leading to additional FPI outflows through late 2022. However, by late 2022 and into 2023, India’s robust economic outlook and policy stability began attracting foreign investors again. In December 2023, FPIs poured a record ₹661.35 billion (~US\$8.0 billion) into Indian equities, driving indices to new highs. Overall, for FY2024–25, foreign investors remained net buyers of Indian stocks (especially in financials and tech) despite some second-half volatility. This recovery contrasted with Russian markets (closed to outsiders) and China’s (constrained by lockdowns), making India relatively attractive. Bond markets saw yields rise on RBI hikes but remained supported by strong demand. In sum, market turbulence was acute early on, but India’s underlying fundamentals and return of global liquidity underpinned a rebound.

Strategic Autonomy and Policy Measures: Throughout the crisis, India adhered to its policy of strategic autonomy. It condemned the invasion diplomatically but abstained from UN votes condemning Russia³, aiming to preserve ties e.g. to protect Indian students in Ukraine. India did not join Western sanctions: it openly continued buying Russian oil and armaments³. For example, despite US/EU embargoes, India purchased record volumes of discounted Russian crude (over 40% of its imports by 2023)⁴. Analysts note that India’s defense imports (~70% historically from Russia) provided little flexibility; even by 2024, Russian arms still accounted for a large share of deliveries³. Meanwhile, India quietly diversified: it expedited pending deals with Western weapon suppliers and boosted its own defense production (Atmanirbhar Bharat). In agriculture and energy, the government imposed short-term measures – export bans on wheat (May 2022) and onions (Dec 2023), tariff adjustments on edible oil imports, and subsidy increases (fertilizer subsidies nearly doubled in FY2022–23) – to contain price spikes. It also accelerated long-term plans for energy security (expanding renewable capacity, stockpiling fuel) and agricultural self-sufficiency (oilseed programs). On the diplomatic front, India engaged partners to stabilize commodity markets (urging food export curbs relief) and strengthened alternative trade routes e.g. the INSTC corridor. In all, India balanced its historical relationship with Russia against new economic realities, seeking to “have its cake and eat it too” by maintaining diversified partnerships.

STATISTICAL ANALYSIS

- **Oil Imports:** India’s crude oil import bill from Russia jumped from under **US\$2.5 billion** in FY2021–22 to over **\$31 billion** in FY2022–23, and further to roughly **\$140 billion** in FY2023–24⁴. This made Russia the top oil supplier (~40% of imports by 2024)⁴.
- **GDP Growth:** After booming (~13–18%) in early 2022, India’s real GDP growth slowed to about **7%** in FY2022–23, still one of the highest rates globally. The IMF projected growth around **6.5–7%** for FY2024–25⁶.
- **Inflation:** Retail inflation spiked from ~5–6% pre-war to a peak of **~7.8%** in April 2022, driven by higher oil and food prices. By late 2023, inflation had eased back toward the RBI’s target band (~6%), aided by monetary tightening and bountiful harvests.
- **Exchange Rate:** The Indian rupee depreciated sharply. It fell from ~₹74/\$ in January 2022 to around **₹82.6/\$ by end-2022** (a drop of over 11% for the year)⁵. It hit record lows near ₹83 in early 2023 before RBI interventions and capital inflows helped it recover above ₹80 by 2025.

- **Stock Markets:** On Feb 24, 2022 (invasion day), the Sensex dropped ~**4.7%** in a single day (the worst one-day fall since May 2020). All sectoral indices fell sharply. By contrast, by early 2024 the Sensex and Nifty had recovered to new highs, reflecting renewed foreign buying.
- **Capital Flows:** Foreign portfolio investors (FPIs) sold aggressively early on e.g. net equity outflow of ~\$2.2b on Feb 24, 2022, but returned later. Notably, **₹661.35 billion** (≈US\$8.0b) flowed into Indian equities in Dec 2023 (a record monthly inflow), aiding market rallies. For FY2024–25, FPIs were net buyers overall despite some volatility.
- **Sunflower Oil:** Russia and Ukraine supply >**70%** of global sunflower oil ⁷. India, responding to the supply shock, imported a record **461,458 tons** of sunflower oil in Jan 2023 ⁷, indicating massive substitution for domestic requirements.

CONCLUSION

The Russia-Ukraine war introduced significant economic challenges for India, but the country's economy demonstrated resilience. Despite facing severe commodity shocks, India maintained robust growth and managed inflation through aggressive policy actions. By late 2024, inflation had receded toward RBI targets and the rupee recovered much of its losses. The IMF notes that India's economy remained among the fastest-growing in the world, forecasting growth around 6.5%–7% in 2024–25 ⁶. Strategic policy responses — such as accumulating energy stocks, imposing selective export controls on food, and raising subsidies — helped stabilize markets and protect vulnerable sectors. India's "strategic autonomy" stance (continuing imports from Russia while deepening ties with Western partners) insulated it from some external pressures ³. Nonetheless, the war's legacy includes higher government debt and subsidy burdens, and a reminder of India's exposure to global fragmentation ⁶. Going forward, India is likely to pursue further diversification of energy and agricultural sources, strengthen domestic production (consistent with the Atmanirbhar Bharat agenda), and rely on its large foreign-exchange reserves and digital infrastructure to withstand future shocks. In sum, the conflict tested India's economy but ultimately underlined its resilience- a finding consistent with both the empirical data and recent academic studies ^{2 1}.

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PERSISTENT VIOLATIONS AND INEFFECTIVE DETERRENTS: A STUDY OF CORPORATE ETHICS IN INDIA

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¹Krmehta2005@gmail.com and ²kapadiariya1705@gmail.com**ABSTRACT**

This paper looks at recent trends in corporate ethical violations in India, focusing on the types of offenses, the amount and collection of financial penalties, and their impact on corporate governance and stakeholder trust. Even with stricter regulations by authorities like SEBI, RBI, CCI, ED, and NCLT, many major companies are still involved in unethical practices such as fraud, insider trading, money laundering, and false financial reporting. Although there has been an increase in regulatory action and ESG reporting requirements, data shows that many penalties are either not paid or are delayed. This raises questions about whether these fines are actually effective in stopping such behavior. Using key case studies like the Adani coal issue, Rose Valley scam, NSEL fraud, and Belekeri iron-ore scam, the paper highlights common patterns across sectors and gaps in the enforcement system. The findings suggest that while financial penalties are important, they alone are not enough. Stronger transparency, faster enforcement, and better accountability are also needed to reduce unethical conduct in companies.

INTRODUCTION

Corporate ethics are the values and rules that guide how a company and its people behave. These are expected to be followed by everyone from top management to junior staff. But today, many companies are seen breaking these ethics for personal gain like avoiding taxes or misusing power. In India, bodies like SEBI, RBI, CCI, ED, and NCLT are there to handle such matters. They look into frauds, financial crimes, and corporate misconduct, and take action to make companies accountable. Now, companies are also judged through ESG — Environmental, Social and Governance which checks how responsible a company is, not just how much profit it makes. ESG reports help show transparency and build trust with investors.

Still, even with all these systems in place, ethical violations continue. This paper will study recent trends in such cases in India, the financial penalties given, and whether these penalties are enough to bring real ethical change in companies.

LITERATURE REVIEW

Ethical violations are not new in Developing country like India where laws are just made but hard to enforce upon and control the financial frauds, Insider trading, money laundering and more serious crimes. The common man, employees environment and the stakeholders are the most affected due to the frauds and compensation paid is never able to return the hard earned money they lost.

We have regulations and acts to punish the people doing wrong acts but the question here is are those financial penalties enough to stop the companies from doing the same thing again?

Thus many researchers, surveys have tried to study the trends. KPMG is a global firm that does surveys to study fraud in Indian companies in their report of 2022 they said that 79% of the companies still face the risk of fraud even after more strict regulations and compliance have been imposed. Companies still find many ways to do frauds like fake invoices, making of shell companies, avoiding filing of returns etc. for personal gain.

The culture of ethics is still weak inside the organisation as somewhere or other the greedy nature of Human beings make them want for more money.

The top level management itself is the biggest cause for happening of frauds and scams as they want to deceive the public. Rules are not enough there is need for more strict value systems. SEBI which is the security market regulator in India stated in its annual report of 2023-24 that it had collected over 75 crore in fines and penalties for crime such as insider trading, misrepresentation of books of accounts, and non transparent practices of the company. Bombay Stock Exchange and the Multi Commodity Exchange is also were fined 25 lakh for not following proper norms. The BRSR Mandate by SEBI also enables companies to report on how they treat the employees, manage environmental impact, follow corporate Governance practices and handle social responsibility. This helps to increase transparency to stop violations. Companies who do greenwashing or lie in such reports then they can be questioned by SEBI. Forensic audit is a deep check in the companies books of accounts to detect fraud. In 2023-24 SEBI hired 9 top firms like Deloitte, KPMG, BDO to carry out such audits.

Forensic audit is different than the regular Statutory audit done as it demands reasons for fake bills or invoices, stole or misused company money, gave bribe or secret payment, evasion of taxes and tampering with financial reports.

RESEARCH METHODOLOGY

The research done in this paper is based on Secondary Data which includes various articles and references and the same will be available in bibliography

OBJECTIVES OF THE STUDY

1. To identify the most common types of ethical violations happening in Indian companies.
2. To study the financial penalties imposed by regulatory bodies like SEBI, CCI, RBI, and NCLT over the past decade.
3. To analyze trends in ethical violations sector-wise and over time.
4. To understand how penalties affect company behaviour, reputation, and compliance.
5. To explore whether financial punishment alone is enough to reduce unethical practices.
6. To suggest practical, student-based recommendations to strengthen ethical governance in Indian businesses.

DATA ANALYSIS

SEBI is getting stricter on insider trading, fraud, and poor disclosures. In 2023–24, it collected ₹74.88 crore in penalties and ₹125.56 crore in settlements. But over ₹76,000 crore in fines are still unpaid, showing many companies delay or avoid payment, reducing SEBI's impact.

CCI looks into unfair practices like market dominance and cartels. In the last five years, it imposed ₹4,369 crore in fines but recovered less than ₹200 crore just 4.5%. It fined Amazon ₹2,044 crore and Google ₹2.02 crore, but most of the money is still unpaid. This shows strong action on paper, but weak results in reality. RBI mainly steps in when financial institutions fail on governance or risk. It took action against Reliance Capital by removing its board due to defaults and mismanagement. This led to the company being pushed into insolvency. RBI's role is more about supervision and clean-up than fines but it plays a big part in holding NBFCs and banks accountable. NCLT handles insolvency and legal action against poorly managed companies. In cases like Bhushan Power & Steel, the ED attached ₹4,025 crore worth of assets under NCLT. It helps hold companies accountable through legal restructuring, not just fines.

CASE STUDIES

1. Adani Coal Grade Scam

Between January and October 2014, the OCCRP revealed that the Adani Group had sold approximately 3,500 kcal/kg low-grade Indonesian coal to TANGEDCO, Tamil Nadu's power utility, while billing it as 6,000 kcal/kg high-grade coal. Around 1.5 million tonnes—i.e., a minimum of 22 shipments—followed this pattern. The practice was unethical due to three main reasons: corruption, environmental damage, and misleading practices. Adani deliberately mislabelled the coal to make it appear of superior value. Whistleblowers alleged that TANGEDCO officials had colluded with Adani to manipulate approvals and tenders. The burning of low-grade coal led to higher toxic emissions, adversely affecting public health. Moreover, the overpayment by TANGEDCO contributed to increased electricity tariffs. The use of inferior coal also worsened air pollution, increasing health risks in an already pollution-prone region.

Quantitative Analysis: The company faced a major financial loss of over ₹6,100 crore, and consumers indirectly bore the burden through tariff hikes.

Impact: Public health was negatively affected, and consumers had to pay increased tariffs. However, Adani has rejected all allegations of wrongdoing, citing third-party testing. The case remains under investigation, with no final verdict yet.

2. Rose Valley Chit Fund Scam

The Rose Valley Group, led by Gautam Kundu and Shibamoy Dutta, ran a Ponzi-style chit fund scheme between 2014–2015 across eastern India in states like Tripura, West Bengal, Odisha, and Assam. The group collected around ₹17,000 crore from small investors over a decade. The scheme promised high returns through timeshares, real estate, and investment deals but eventually collapsed, leaving ₹6,666 crore unpaid and many investors in financial ruin. The promoters acted unethically, siphoning investor funds into thousands of bank accounts and laundering money through illegal properties and fixed deposits.

This scam had a devastating effect on economically weaker individuals who were lured in with unrealistic promises. The scheme operated without regulatory oversight and was later declared illegal by SEBI as an unregistered collective investment scheme.

Financial Damage: ₹17,520 crore was mobilized, with ₹6,666 crore unpaid. Around 31 lakh investors registered claims with the Asset Disposal Committee (ADC), and about 7.5 lakh were found eligible for restitution. In October 2014, restitution began, and the first batch of 7,346 investors received ₹10,200 each, totalling ₹5.12 crore. The Enforcement Directorate filed a PMLA charge sheet in 2016 and attached assets worth ₹332–₹494 crore. In January 2025, a special PMLA court framed formal charges against Kundu and Dutta in Odisha, opening the door for asset restitution. By March 14, 2025, the court approved the release of ₹450 crore. In mid-April 2025, the government handed over ₹515.31 crore to the committee, raising secured restitution funds to over ₹537 crore. Additional assets worth ₹1,172–₹2,000 crore remain attached and await liquidation for future compensation (as of April 2025).

Despite extensive legal action—including asset seizure, charge framing, and initial compensation—a significant portion of investor losses remains unrecovered, as liquidation continues.

3. National Spot Exchange Limited (NSEL) Scam

The NSEL scam surfaced in 2013 and became one of India's largest financial frauds, involving an estimated ₹5,600 crore and affecting over 13,000 investors across the country. NSEL, established in 2008, was intended to facilitate spot trading in agricultural and industrial commodities but later introduced controversial "paired contracts." These allowed investors to buy and sell commodities with a fixed return over 25–30 days. However, these contracts were often not backed by actual commodities. Later inspections revealed that the goods were either missing or of poor quality. Many borrowers on the platform were shell entities or financially weak companies that used investor funds without collateral or repayment plans. Though marketed as risk-free, collateral-backed trades, the transactions were essentially unregulated loans, violating the FCRA Act and NSEL's licensing terms. The scam involved multiple unethical practices, including breach of fiduciary duty, investor misrepresentation, and complicity by corporate entities. Financial Technologies India Ltd (now 63 Moons Technologies), the parent company, failed to enforce internal controls despite knowledge of the fraud. Brokers encouraged clients to invest without proper disclosures or due diligence. The scandal led to massive financial losses and shook investor confidence in India's financial markets. It also exposed flaws in India's regulatory framework, especially concerning hybrid financial instruments. In its aftermath, several agencies took legal action: the Economic Offences Wing of Mumbai Police filed a supplementary charge sheet in 2018 against 27 individuals and 36 entities, including brokers, defaulting borrowers, and NSEL and FTIL executives. The Enforcement Directorate attached assets worth hundreds of crores under PMLA. SEBI also declared 63 Moons Technologies "not fit and proper" to operate in capital markets due to their involvement in the fraud. The case highlighted critical lapses in corporate governance and the need for tighter market regulation.

4. Belekeri Port Iron Ore Scam

Between 2009–2010, around 3.5 million tonnes of seized iron ore, owned by powerful mining interests in Karnataka, were illegally exported from Belekeri Port near Karwar.

Although the ore had been legally confiscated by the forest department, a large portion vanished and was exported abroad using forged documents and fake permits. The scam was unethical due to its environmental damage, governance failure, and loss of state revenue. It bypassed royalty payments and other government charges, causing an estimated loss of ₹16,099 crore in unpaid royalties. The broader Bellary mining scandal involved alleged losses of up to ₹60,000 crore. The operation was supported by a network of corrupt port officials, customs agents, forest officers, mining regulators, and political figures connected to the mining mafia. Companies involved included Shree Malikarjun Shipping Pvt. Ltd., Adani Enterprises, Salgaonkar Mining, Dream Logistics, Raj Mahal Silks, and others. In May 2010, about 8 lakh tonnes of ore worth ₹250 crore were seized, although most of the stock disappeared under suspicious circumstances. In September 2012, the CBI registered multiple FIRs related to the illegal export of nearly 5 million tonnes worth ₹2,500 crore and conducted raids in Bellary, Goa, Karwar, and Bengaluru. In October and November 2024, MLA Satish Krishna Sail was sentenced to seven years of rigorous imprisonment and fined ₹44 crore. However, the Karnataka High Court later stayed the sentence temporarily, allowing bail on the condition that 25% of the fine be deposited within six weeks. The broader Impact included significant economic losses, environmental damage, and administrative failure. Excessive mining activity and ore transport led to hundreds of fatal accidents and road infrastructure degradation.

CONCLUSION

Ethical misconduct continues to affect Indian corporates despite stronger regulations and rising penalties. While regulators like SEBI, CCI, RBI, and NCLT have increased actions such as heavy fines, forensic audits, and asset attachments penalty collection remains low, and legal delays reduce deterrence. Cases in mining, finance, and infrastructure reveal both a disregard for norms by some companies and the difficulty regulators face in enforcing accountability. For many firms, fines are treated as a business expense rather than a warning.

This suggests that financial penalties alone are not enough. Stronger internal ethics systems, faster legal processes, public reporting, and incentive-linked compliance are needed. A mix of strict enforcement and governance reforms will be essential to build corporate trust, investor confidence, and long-term sustainability.

RECOMMENDATIONS

1. Set a Time Limit and Add Interest on Unpaid Fines

In many cases like NSE and Rose Valley, companies didn't pay their penalties for years. There should be a strict deadline like 90 or 120 days to clear dues. If they don't pay on time, interest should be added automatically every month, just like GST or income tax rules. This will stop companies from ignoring fines or treating them like they don't matter.

2. Make a Public List of Companies with Pending Fines

Just like banks have defaulter lists, SEBI or MCA should put out a public list of companies who haven't paid their fines or have repeated violations. This creates public pressure and also helps investors and customers know who they're dealing with.

3. Link the Fine Amount to the Size of the Company

A ₹10 crore fine might be huge for a small firm but barely affects a company like NSE or Adani. Fines should be based on turnover or profit — like 0.5% for the first offence and more for repeat ones. This way, big companies feel the impact properly, and the punishment feels fair.

4. Speed Up Case Resolution Through Fast-Track Benches

A major issue seen in cases like NSE, NSEL, and Bhushan Steel is the delay — some took 7–10 years just to reach judgment. Ethics and financial violation cases should be fast-tracked and ideally closed within a year. Delays reduce the seriousness of the action.

5. Start a Government-Run Whistleblower Platform

In many big scams, insiders were the ones who exposed the truth. But most people don't report things due to fear. There should be a proper, secure online system run by SEBI or MCA where employees, vendors, or even customers can report wrongdoing anonymously.

6. Make Ethics Reporting Compulsory Every Year

Companies submit financial and ESG reports, but they rarely talk about internal complaints or ethical issues. A yearly "Ethics and Compliance Report" should be made compulsory — covering whistleblower complaints, actions taken, and any board-level issues. This builds trust and keeps the company accountable.

7. Link Ethics Score to Government Benefits

Some companies with poor ethics records still win government contracts or get loans. A simple ethics score system should be introduced. If a company scores low, it should be blocked from applying for tenders or getting easy loans until it improves. This will push them to act more responsibly.

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POSITIONING SHIRPUR AS A FUTURE-FOCUSED TOURISM DESTINATION

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ABSTRACT

Shirpur, a modest town in Maharashtra's Dhule district, is gradually emerging as a promising candidate for tourism development, owing to its integrated strengths in water management, agro-industrial prominence, educational ecosystem, and cultural-spiritual heritage. This research aims to assess Shirpur's untapped potential through a critical review of secondary data from official reports, case studies, and academic literature. Key variables explored include tourism infrastructure, environmental sustainability, regional economy, and public-private participation. The findings suggest that Shirpur, with the right strategic investment and branding, could evolve into a model for sustainable, rural-industrial tourism in Maharashtra.

Keywords: Shirpur, rural tourism, eco-tourism, sustainable development, industrial visits, Maharashtra

1. INTRODUCTION

Tourism has evolved beyond its traditional boundaries, emerging as a multi-dimensional engine for rural revitalization, cultural preservation, and economic diversification. With increasing pressure on urban tourist destinations, attention is shifting toward lesser-known rural locations that offer authentic experiences coupled with development narratives. One such place is Shirpur—a town distinguished by its revolutionary water conservation model known as the “Shirpur Pattern,” its industrial establishments such as Asia's largest gold refinery, and a strong academic-industry interface.

Despite its regional significance, Shirpur remains absent from mainstream tourism circuits. This paper seeks to bridge that oversight by analyzing Shirpur's readiness and relevance as a rural tourism hub, using only secondary sources to build a comprehensive picture of its current state and future potential.

2. OBJECTIVES OF THE STUDY

This research is guided by the following key objectives:

To identify and analyze Shirpur's existing resources with tourism potential—spanning heritage sites, industrial assets, natural ecosystems, and educational institutions.

To examine secondary data sources for insights into Shirpur's infrastructure, economic landscape, and environmental progress.

To explore how the acclaimed Shirpur Pattern in water management could enhance eco-tourism offerings.

To evaluate Shirpur's preparedness for structured tourism development.

To propose actionable strategies drawn from successful rural tourism models in comparable Indian towns.

3. RESEARCH METHODOLOGY**Research Design:**

This study follows an exploratory research approach with a qualitative orientation.

DATA TYPE

Only secondary data was used to maintain a broad, evidence-based assessment. No primary surveys or interviews were conducted.

Data Sources:

The following were reviewed for content analysis and comparative case evaluation: Reports from Maharashtra Tourism Development Corporation (MTDC)

Dhule District Statistical Handbook

Government and institutional publications on the Shirpur Pattern (e.g., NITI Aayog, NIWR) Rural development reports from state and national bodies

Peer-reviewed academic journals and articles

Geo-spatial insights using Google Earth and tourism-focused regional blogs Analysis Techniques:

Thematic content analysis

Comparative analysis with successful tourism models (e.g., Ralegan Siddhi, Sikkim villages) SWOT-based tourism potential indexing

4. LITERATURE REVIEW

The intersection of tourism and rural development has gained considerable academic traction in recent years. Singh (2019) and Bhat & Sharma (2021) argue that rural tourism not only supplements local economies but also helps conserve cultural identity and environmental balance. Case studies such as Ralegan Siddhi and Mawlynnong demonstrate that local resource management combined with narrative-driven tourism can transform villages into successful travel destinations.

Shirpur, while widely recognized for its pioneering water conservation model (Deshmukh, 2017; Iyer & Bhattacharya, 2018), has rarely been explored through a tourism development lens. Most existing literature highlights the technical and socio-economic impact of the Shirpur Pattern but overlooks its experiential and educational tourism potential.

Recent government efforts such as the Swadesh Darshan Scheme (Ministry of Tourism, 2022) and rural eco-tourism initiatives in states like Sikkim (Pandey, 2020) provide successful models that could be replicated in Shirpur. The case of Channapatna in Karnataka illustrates how traditional industries, when creatively aligned with tourism narratives, can boost local economies and enhance regional branding.

This research thus addresses a noticeable gap in tourism scholarship by positioning Shirpur as a rural destination with multi-sectoral value.

5. SHIRPUR: THE CONTEXT**5.1 Geographic Setting and Demographics**

Shirpur is situated in the Dhule district of northern Maharashtra, strategically positioned along the Mumbai-Agra National Highway (NH3), which ensures high connectivity to major urban centers. As per the 2011 Census, the town had an estimated population of 76,000, and recent infrastructural growth suggests a steady demographic rise, especially around educational clusters and industrial zones. Its location between the Satpura ranges and the Tapi River lends it ecological variety and scenic potential suitable for eco-tourism and nature-based retreats.

5.2 Economic Profile and Industrial Ecosystem

The economy of Shirpur has transitioned from being agriculturally dependent to becoming a significant industrial hub. Its most notable industrial landmark is the Shirpur Gold Refinery, among the largest and most modern gold refining facilities in Asia. In addition, Shirpur's textile sector comprising cotton ginning, spinning, and weaving units forms an essential part of the town's economic base. Complementing these are a variety of agro-based and micro, small, and medium enterprises (MSMEs) that contribute to job creation and regional economic development.

5.3 The Shirpur Pattern: A Blueprint for Eco-Tourism

Shirpur is internationally recognized for the innovative water conservation model known as the Shirpur Pattern, championed by Shri Amrishbhai Patel. Through widespread implementation of check dams, trenches, and underground water recharge structures, the once drought-prone region has been transformed into a water-positive zone. The model has been acknowledged by national policy think tanks such as NITI Aayog, and replicated across other Indian states. This success story offers a compelling narrative for eco-tourism, especially for visitors interested in sustainable development and grassroots environmental engineering.

5.4 Industrial Infrastructure and Educational Tourism Opportunities**A. Shirpur Gold Refinery**

Established in 2001 under the corporate banner of Shirpur Gold Refinery Limited (SGRL), the plant boasts a refining capacity of over 217 metric tonnes annually. It exemplifies best practices in logistics, precision engineering, and process automation. The facility holds immense potential as a site for industrial tourism, offering educational institutions and technical learners a chance to witness high-grade operations.

B. Shirpur's Cotton Cluster

The town is home to a vibrant textile economy powered by both cooperative mills and private enterprises. The Shirpur Co-operative Cotton Mill, alongside numerous ginning and power loom units, represents the entire cotton value chain—from processing to production. These units are ideal for academic-industrial visits focused on sustainable textile manufacturing, circular economy practices, and MSME operations.

C. Agro-Based Units and MSMEs

The town also houses a diverse range of agro-industries, including grain mills, fertilizer units, and small engineering workshops supporting agriculture and textiles. Many of these operate under public-private partnership models and offer valuable insights into rural industrialization for visiting researchers, students, and CSR strategists.

D. Academia–Industry Interface

Shirpur’s educational institutions, particularly the R. C. Patel Group of Institutes, actively engage with the industrial ecosystem. These colleges organize industrial visits, conclaves, innovation labs, and water conservation workshops, making Shirpur an ideal candidate for education-centric tourism experiences.

6. ANALYSIS AND FINDINGS

6.1 SWOT Analysis of Shirpur’s Tourism Potential

A strategic SWOT analysis was conducted based on available secondary data and sectoral insights:

Strengths:

Proven success in environmental innovation through the Shirpur Pattern Presence of unique industrial landmarks like the Shirpur Gold Refinery Established educational institutions promoting academic tourism

Heritage and religious tourism elements including temples and cultural sites Weaknesses:

Absence of structured tourism infrastructure (accommodation, signage, guides) Lack of mainstream tourism branding and market positioning

Limited public transportation options within the region Seasonal dependency for certain tourism activities Opportunities:

Scope for eco-educational tourism, especially involving sustainable practices and water management

Corporate Social Responsibility (CSR) funding from local industries to support tourism projects

Potential to integrate digital storytelling, virtual reality (VR) tours, and interactive museum formats

Development of student- and industry-focused itineraries for educational institutions nationwide

Threats:

Risk of over-commercialization diluting the authentic rural character of Shirpur Inadequate representation in state-level tourism policies

Potential environmental stress due to unregulated tourism inflow Local apathy if tourism is not inclusive or economically participative

6.2 Identification of Thematic Tourism Clusters

To systematically assess Shirpur’s tourism viability, its assets were grouped into four major clusters, each aligning with a specific tourism category:

Cluster Location	Tourism Type	Suggested Activities
Shirpur Pattern Water Sites	Eco-Tourism	Interpretive trails, technical workshops, guided farmer interactions
Balaji Mandir & Jain Sites	Religious Tourism	Temple tours, local festivals, spiritual retreats
Gold Refinery Complex	Industrial Tourism	Academic-industrial tours, innovation showcases, CSR labs
Tapi Riverfront & Green Belts	Nature-Based Tourism	Riverside walks, birdwatching, eco-photography, community picnics

7. STAKEHOLDER ENGAGEMENT

The success of Shirpur as a tourism destination hinges on a collaborative framework involving multiple stakeholders. The following actors must be strategically engaged:

Local Governance Bodies (Gram Panchayats & Nagar Parishads): Responsible for enabling land use planning, community participation, and integration of tourism into local development agendas.

Industrial Houses (e.g., Shirpur Gold Refinery Ltd., Shirpur Cotton Units): These institutions can play a major role in hosting industrial visits, funding tourism amenities via CSR initiatives, and showcasing sustainability practices to tourists.

Educational Institutions (R. C. Patel Institutes and others): Academic bodies are well-positioned to lead research-based tourism, coordinate student visits, and curate technical experiences in partnership with industry.

Government Tourism Agencies (MTDC, Ministry of Tourism): Required for infrastructure support, policy alignment, promotional activities, and inclusion of Shirpur in state and national tourism circuits.

Local Communities and Entrepreneurs: As primary custodians of cultural and natural heritage, their involvement is essential for delivering authentic experiences and ensuring equitable tourism benefits.

To streamline efforts, it is proposed that a Tourism Advisory Cell be created comprising representatives from each stakeholder group. This cell would coordinate project execution, funding mobilization, promotional campaigns, and infrastructure planning.

8. COMPARATIVE CASE ANALYSIS

The viability of Shirpur as a tourism hotspot can be better understood by comparing it with similar Indian towns that have successfully transitioned into tourism-driven micro-economies:

Anand, Gujarat: Known for its dairy revolution, Anand has capitalized on its identity by offering factory tours of Amul, academic programs on co-operative economics, and agro-based tourism experiences.

Channapatna, Karnataka: Popularly known as the "Toy Town of India," Channapatna has integrated its traditional craft into the tourism narrative, reviving local industries and attracting domestic and international tourists through creative branding.

Sikkim's Organic Villages: With state-backed policies and community ownership, these villages have become exemplary models for eco-agri tourism, combining organic farming tours, homestays, and biodiversity education.

Key takeaways for Shirpur include:

Narrative-Driven Branding: Whether it is water conservation or industrial ingenuity, Shirpur must create a compelling story for tourists.

Public-Private Synergy: Government support coupled with private enterprise can ensure scale, quality, and financial sustainability.

Community Inclusion: Local residents must be seen as co-creators of tourism, not passive beneficiaries.

Given its integrated eco-industrial identity, Shirpur holds tremendous potential to emulate and even exceed the success of these towns if tourism is developed with foresight and inclusivity.

Great. Here's the final part of the rewritten research paper, covering Sections 9, 10, and References refined for academic clarity, originality, and APA formatting:

9. POLICY GAPS AND STRATEGIC RECOMMENDATIONS POLICY GAPS IDENTIFIED

Exclusion from State Tourism Maps: Shirpur is currently absent from the official Maharashtra Tourism Development Corporation (MTDC) circuits, limiting its visibility to planners and tourists alike.

Lack of Dedicated Infrastructure: There is no structured investment in public amenities like tourist information centers, signage, toilets, or transportation linkages.

Fragmented Promotion Efforts: While various institutions in Shirpur promote their individual achievements, a unified tourism narrative is missing.

Inadequate Incentivization: Industrial entities and academic institutions contributing to tourism do not receive tax or operational incentives.

RECOMMENDATIONS

Inclusion in Rural Tourism Circuits: MTDC and allied agencies must formally recognize Shirpur in their rural and eco-tourism plans, linking it with nearby destinations.

Creation of a Tourism Master Plan: Develop a roadmap for Shirpur's tourism growth, including zoning, infrastructure development, and community training programs.

Tax Breaks for Industry Participation: Offer fiscal incentives to industries that invest in tourism activities such as educational tours, interpretation centers, or CSR-funded infrastructure.

Digital and Experiential Promotion: Use virtual tours, interactive storytelling platforms, and social media influencers to market Shirpur's unique identity.

Academic and Research Tourism: Encourage universities to host field trips, research conclaves, and sustainability workshops, making Shirpur a living classroom for eco-industrial tourism.

10. CONCLUSION

Shirpur is not merely a town with industrial and environmental achievements; it is a multi-layered ecosystem waiting to be unlocked through the lens of tourism. Its strengths ranging from sustainable water conservation and robust industrial output to educational excellence and cultural richness make it an ideal candidate for integrated rural tourism development.

By leveraging its distinct identity, involving key stakeholders, and addressing infrastructural and policy gaps, Shirpur can emerge as Maharashtra's model for rural, eco-industrial tourism. If developed thoughtfully, it holds the potential to inspire other emerging towns across India to reinvent themselves through sustainable and inclusive tourism frameworks.

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PREDICTING FINANCIAL MARKET CRASHES USING A HYBRID FRAMEWORK OF REGIME SWITCHING, STOCHASTIC SIMULATION, AND ECONOPHYSICS

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This study proposes a hybrid modeling framework for predicting economic crashes by integrating Markov Regime Switching Models (MRS), mean-field theory, and Monte Carlo simulations within the domain of econophysics. The integration of these three complementary methods allows for capturing both microscopic agent behavior and macroscopic regime transitions, making it highly effective for early detection of financial instability. To validate the robustness and adaptability of the approach, two case-specific models are constructed: one for the COVID-19 global economic crash (2020) and another for the Argentina 2001 economic crisis. Each model is independently calibrated using historical stock market and macroeconomic data specific to its respective crisis. MRS captures probabilistic transitions across latent regimes (bull, bear, and turbulent), while Monte Carlo simulations model agent-level interactions under varying market conditions. Mean-field theory accounts for collective behaviors and asymmetric buyer-seller dynamics that lead to critical instabilities. In both XXX-X-XXXX-XXXX-X/XX/\$XX.00 ©20XX IEEE cases, the models successfully identify regime transitions, critical temperature thresholds (T_c), and volatility clustering. The integration enables anticipatory insights into potential market breakdowns, allowing for pre-emptive action. Results highlight that well-timed financial interventions near T_c or regime shift boundaries significantly influence long-term market stability. This research demonstrates how combining statistical physics with econometric modeling enhances predictive accuracy and provides actionable tools for crisis forecasting and economic policymaking.

Index Terms— Stock market crash prediction, COVID-19 economic crisis, Argentina 2001 crash, Markov Regime Switching Model, Monte Carlo simulation, mean-field theory, volatility clustering, econophysics, regime transitions

I. INTRODUCTION**1.1 Motivation and Background**

Forecasting market crashes is difficult in quantitative finance and economics. Examples such as the 2001 Argentine crisis and the COVID Crisis in 2020, provide evidence of fundamental instabilities and sudden regime changes, which typical linear models fail to account for [2], [3].

Historically, analysing financial markets has been based on the assumption that markets are efficient, and returns are normally distributed. However, data illustrates that the probability distributions of market returns are heavy-tailed, demonstrate volatility clustering and undergo structural breaks due to the interactions of heterogeneous agents [4, 5, 8, 12]. Such collective behaviours often lead to nonlinear feedback loops, especially when agents become stressed during economic turmoil. Therefore, various interdisciplinary models from economics, stochastic simulation, and regime-switching economics, are together useful to remedy the inadequacies of traditional linear models. Econophysics employs ideas of critical phenomena and phase transitions to model disruption of the market [3], [7]. Monte Carlo simulations model financial market returns probabilistically and assesses the assumptions of uncertainty [1], [4]. Markov Regime Switching Models (MRS) are directed towards observing latent states such as a bull, bear, or crisis phase, and estimating transition probabilities [2], [6].

This paper reports the integration of different approaches, namely MRS, Monte Carlo methods, and mean-field theory to formulate a hybrid model which include agent-based dynamics and regime shifts. The model was applied to the COVID Crisis and the Argentine 2001 crisis accounting for how behavioural interactions produce instability and insights into early warning systems and policies.

1.2. Hurdles to Crash prediction

Predicting financial crashes is a challenging task due to its complex granting systemic multi-causal and emergent nature. First, the financial system suffers from instability from shocks from the external economic situation, but also derives instability from endogenous behaviour which leads to non-linear interactions among various factors including herding, feedback, liquidity constraints, and sentiment shifts, all of which can potentially lead to prompt regime changes [3], [5], [12].

Standard linear time-series assumptions of stationarity, constant volatility, and normal distributed returns would break-down under extreme conditions where volatility clusters, asset classes become highly correlated, and return distributions exhibit fat tails and skewness [8],[10]. The net effect is that crashes are significantly understated as the rare and severe downturns (crashes) are hidden by regular volatility, leading to a false sense of stability.

Although machine learning models are powerful predictors and can participate much in prediction, many machine learning methods tend to lack interpretability and are not designed for generalization across distinct market regimes. Most machine learning methods are susceptible to the problems of overfitting when even confronted with unforeseen events including sovereign debt defaults or world-wide pandemics [14].

On the other-hand econo-physics models and regime switching models including MRSM permit the detection of structural changes in a state system, whereby different latent states (i.e. crisis, recovery) are identified or coded, and the model would estimate change probabilities [2],[6]. The combination with Monte Carlo simulations derived from Mean-Field methods allow for the reconciliation of both micro behavioural and macro-dynamics in a single analysis [1],[4],[7].

In part, combining and making these methods work would be the availability of data, the calibration of the parameters and also an application to the real world. Nevertheless, it is an interesting hybrid approach for early-warning systems as well as other evidence informed policies.

1.3. Role of Econophysics and Hybrid Modeling

The limitations of traditional economic models are resulting in a utility playing more and more interest to interdisciplinary approaches, particularly those that borrow heavily from statistical mechanics to perform financial analysis. Econophysics utilizes elements of statistical mechanics, particularly in the analysis of non-equilibrium systems, phase transitions, and the use of thermodynamic futures as well as offer a more substantive view of collective behaviour in addition to collective risk in regards to financial analysis [3], [4], [8]. Behaviours of investors in these markets can be seen as interacting particles in a complex system where micro-level actions result in macro-level phenomena. The parameters of Mean-Field Theory simplify systems of many-body interactions by isolating the average influence of all agents on an individual agent. Consequently, it is possible to describe and identify critical thresholds - like phase transitions in physics - where small shocks are capable of producing large systemic outcome like market crashes [7], [12]. Markov Regime Switching Models (MRSM) analyse the probabilistic structure of how to capture latent states of a market, for example, "stable," "volatile," or "crisis," and can estimate a transition away from or towards these states by relying on observable indicators [2], [6]. A dynamic edge is provided to this probabilistic structure in volatility to a point when uncertainty, or variance of, increases during episodes of volatility, and increased correlation to assets in a portfolio. Monte Carlo simulation methodology's offer variability in the measure of the future path or price of an asset through stochastic processes. By injecting random shocks over 1000's of iterations, Monte Carlo methods can assess the likelihood (or probability) of crashing when exposed to tail risks under systemic shocks where normal market behaviours are anticipated to be disrupted. This integration of MRSM, Mean-Field Theory, and Monte Carlo simulations provides a powerful hybrid framework that captures both the micro-level blend of agent behaviour and macro-level market regimes.

When calibrated with real-world data, this improves the ability to predict crises and provides decision-support for early-warning triggers for crises. This framework has been used in this paper to explain the COVID-19 market crash and the Argentinian 2001 crisis, providing clarity about the underlying mechanisms that govern regime shifts and financial contagion [9], [13], [14]. Financial markets are complex systems that are shaped by traders' behaviours that are influenced by other traders, economic signals, and policymakers. Thus, it is possible to see parallels in the aggregate behaviours of large numbers of traders in a financial market with those of other complex systems in the physical domain. For example, concepts such as phase transitions and correlated dynamics, help explain how the micro-decision of an individual trader will aggregate into macro-trends in the market. Like sociophysics, econophysics takes physical analogies and applies them in economic modelling, and thus, modelling in financial contexts using stochastic processes to analyse markets also draws upon

concepts from non-linear dynamics to capture the idea of asymmetry from buyer-seller interactions, aspects of price oscillations, and broader concepts such as market imbalances and fluctuations to contribute to the way that financial sectors model markets including potential for either agents or systemic changes to redress the market's structures.

This study is deemed an isolated market (and omits all externalities such as potentially massive global capital flows or tourism patterns), to be more isolating of the trace of internalised market structures composed of trader behaviour, as being impacted by domestic governmental actions.

II. THEORETICAL FRAMEWORK

2.1 Overview of Statistical Physics in Finance

The increasing complexity of financial markets has ushered in interdisciplinary approaches (such as econophysics), which utilizes techniques from statistical physics to model trader behaviour as interacting agents, similar to particles in physical systems [15]. This approach allows the use of concepts such as phase transitions, critical phenomena, and stochastic models to explain behaviours in finance during market crises.

In their analogy, similarly to the spin states of a physical system, trader decisions are a function of interacting decisions which have emergent effects, such as volatility clustering and regime shifts [3], [4], which cannot be sufficiently modelled by traditional finance models. The concepts embodied by critical temperature and order-disorder transitions also explain these observed market behaviours [1], [5].

Monte Carlo simulations can replicate trader interactions, using "temperature" to simulate the necessary movements that lead to real-world markets and volatility [20]. The use of Monte Carlo techniques in conjunction with Markov Regime Switching Models (MRSRM), which can identify volatility regimes, and the associated transition probabilities, create a hybrid approach that can identify when early-stage market instabilities are emerging [2], [6], [8].

As supporting evidence, mean-field theory can also provide useful analytical opportunities to mathematically solve some mass-action trading behaviour, particularly when looking at how buyer-seller asymmetries or oscillations in price impact decisions [10], [11], [13]. Together, using these methods also offer an indication of when critical thresholds (such as T_c) and regime shifts indicative of potential financial market crashes, may be occurring. The framework is verified through case studies on the COVID-19 crash (2020) and Argentina's 2001 crisis, both exhibiting features of critical behaviour and regime instability [17], [18]. This framework combines physics with economics providing deeper theoretical insights and practical ways of giving advance warning when markets become unstable.

2.2 Markov Regime Switching Model (MRSRM)

The Markov Regime Switching Model (MRSRM) provides a probabilistic approach to modelling sudden changes in market behaviour by permitting observable financial series to switch interchangeably between unobservable states, characterized by different return and volatility structures [18]. In practice, regimes are interpreted as bull, bear, or high turbulence states, with the transition matrix indicating the probability of moving to another state in the following periods. As the new observations arrive, the regime probabilities are updated in a recursive way, which gives a real-time measure of systemic stress that could be precursory to a crash event [17]. When discussed in an econophysics frame, the transitions between states have a nice analogue in terms of phase transitions in statistical physics, where an underlying "order parameter" undergoes a critical change, resulting in a complete systemic collapse [15]. Here, we fit MRSMs separately for the COVID19 (2020) and Argentina (2001) datasets for estimating transitional intensity and regime duration specific to each case study. The estimates from the MRSRM feed into the Monte Carlo and mean field parts of the hybrid model, ensuring alignment across micro and macro assessments.

2.3 Monte Carlo Simulation for Market Dynamics

Monte Carlo simulation is a vital computational device for reproducing the stochastic evolution of complex systems across a very broad range of parameter specifications [20]. In finance, simulating the randomness in trader interactions, shocks from external sources, and potentially liquidity constraints can produce fat-tailed return distributions and volatility clustering that existing closed-form models cannot model accurately [14]. In this process, every simulation starts from the regime probabilities calculated by the MRSRM and moves forward in time by learning random shocks whose variance depends on the current state. The temperature like control parameter T influences the amount of behavioural noise: low T produces trading that is very close to equilibrium; that is, low T generates low order which does not produce wild price movements; high T produces disorder, which leads to chaotic and radical price changes [6], [8]. By aggregating and averaging thousands of

strategies, we will develop empirical distributions of critical thresholds, such as the time until failure (or crash) or the probability of breaching a preset drawdown threshold; we then compare these results to the real historical data from the COVID19 and Argentina crises.

2.4 Mean-Field Theory and Trader Interaction Modeling

Mean-field theory provides an analytically tractable approximation to the many bodies problem of interacting market participants because it substitutes the complex micro-level couplings of interactions with an average field that acts on all traders uniformly [10]. In the hybrid model, the mean field represents the average effect of buyer–seller imbalance and is dynamically updated by the mean and standard deviation of parameters inferred from the Monte Carlo layer of buyer-seller interactions. When the effective strength of the interactions exceeds a critical value, the system undergoes a symmetry-breaking transition rather like what is observed in physical spin lattices [11]. This transition can show up as persistent oscillations of price or strong drift in the direction of crash regime, depending on whether the dominant couplings are intragroup (buy–buy, sell–sell) or intergroup (buy–sell) [12][13]. By using mean- field predictions combined with MRSM probabilities of state, a critical temperature can be identified as a point at which the system is most vulnerable to shock, thus unifying the microscale effects of trader interaction with the macroscale dynamics of regime.

III. METHODOLOGY

This study develops a hybrid predictive modeling framework that integrates three components namely:-

1. Markov Regime Switching Model(MRSM)
2. Monte Carlo Simulations
3. Mean-Field Theory

MRSM is specifically used for detecting latent structural shifts in market behavior, Monte Carlo simulations for capturing stochastic fluctuations in return paths, Mean-Field theory for approximating the aggregate influence of interacting market participants.

The modelling framework has been applied to two distinct crisis environments namely:-

1. The Covid-19 global crash(2020)
2. Argentina sovereign debt crisis(2001)

Each model was constructed independently to ensure adaptability to the structural characteristics of the respective economic event. By combining latent regime dynamics, stochastic uncertainty, and emergent collective behaviour, the model can capture features such as volatility clustering, critical transitions, and crash probability spikes, all of which are characteristic of financial market crises [3], [5], [7], [13].

3.1 Mathematical Formulation of the Hybrid Crash Prediction Framework

Our framework integrates Markov Regime Switching Models, Monte Carlo Simulations and Mean- Field theory to formalize crash prediction. Each of the above components focus on capturing different layers of complexity present in real-world market dynamics. Ranging from macroeconomic states to micro level agent behaviour.

A. Markov Regime Switching Model (MRSM)

For capturing hidden regime behavior, we start with a first order Markov Regime Switching Model in which the observed return series y_t is driven by an unobserved discrete state variable $St \in \{1, 2, \dots, K\}$, corresponding to market regimes such as bull, bear, or crisis.

The observed return is given by:-

$$y_t = \mu_{St} + \sigma_{St} \epsilon_t, \quad \epsilon_t \sim N(0, 1)$$

where μ_{St} and σ_{St} are the regime-dependent mean and standard deviation. The transition between regimes is governed by a probability matrix P , such that:

$$P = [p_{ij}] = P(St = j | St-1 = i), i, j \in \{1, \dots, K\}$$

This modelling framework supports the estimation of transition frequencies and the detection of regime shifts using the Expectation Maximization algorithm or Hamilton filtering techniques.[2][6]

B. Monte Carlo Simulation for Stochastic Return Paths

$$R_t^{(i)} = \mu_{S_t} + \sigma_{S_t} \eta_t^{(i)}, \quad \eta_t^{(i)} \sim \mathcal{N}(0, 1)$$

Once regime probabilities are established from the MRSM, we simulate possible future return paths using Monte Carlo methods. For each regime S_t , the return at time t is sampled as:

$$P_{\text{crash}} = \frac{1}{N} \sum_{i=1}^N \mathbb{I}(R_t^{(i)} < \theta)$$

where $i=1, \dots, N$ represents the i th simulation path. The simulations move forward by adding random shocks, where the size of these shocks depends on the current market regime. We find the crash probability by checking how many simulations drop below a set return level θ (usually -5%).

This process is repeated across all time steps and calibrated against real-world volatility proxies such as the VIX or sovereign bond spreads. [1][4][10]

C. Mean-Field Theory and Market Magnetization

To represent collective trader actions, we use a mean-field approximation where agents are treated as binary decision-makers: buy (+1) or sell (−1). The aggregate sentiment is captured by the market magnetization:

$$M_t = \frac{1}{N} \sum_{i=1}^N s_i(t), \quad s_i(t) \in \{-1, +1\}$$

The probability that an agent buys at time $t+1$ is governed by a hyperbolic tangent function:

$$P_{\text{buy}} = \frac{1 + \tanh\left(\frac{JM_t}{T}\right)}{2}$$

where J is the interaction strength among agents,

T is a noise parameter analogous to temperature in statistical physics.

The system exhibits a critical threshold T_c , beyond which collective alignment collapses and volatility spikes. [7][12]

3.2 Model Design for COVID-19 Economic Crash

The framework exploring the COVID-19 crash targets U.S. equity markets, employing daily return data from the S&P 500 and VIX as principal metrics over the 2019–2023 timeframe. The subsequent steps outline the modeling procedure:

A. Data Collection and Preprocessing

The financial dataset was collected through the finance API, featuring adjusted S&P 500 close prices and daily VIX readings. Returns were derived using log-differences, standardized on a single timeline, and pre-processed to handle gaps.

B. Regime Identification via Markov Switching

To classify periods of relative market stability and high volatility we used a two-regime switching model (MRSM) to the return series. The model revealed a distinct regime transition around March 2020, aligning with the global recognition of COVID-19 as a pandemic.

C. Monte Carlo Simulation of Returns

Using Monte Carlo simulations, the model generated around 500 simulations of daily returns using statistical parameters derived from historical data. Each simulated path combines baseline volatility with stochastic fluctuations, where variance is governed by market uncertainty. Simulated returns were leveraged to construct a statistical distribution of stressed market behaviour.

D. Crash Probability Estimation

Crash probabilities were derived by identifying the proportion of simulated returns falling below a critical threshold (-5%). The probabilities were aligned with contemporaneous VIX values to test the model's sensitivity to shifts in market sentiment and risk dynamics.

E. Visualization and Diagnostic Evaluation

The model outputs were evaluated across four parameters namely:-

1. Actual vs Predicted returns
2. Cumulative Returns
3. Crash Probability VS VIX
4. Crisis Regime Probabilities

A focused analysis between February and June 2020 was conducted to evaluate the model's performance during the most volatile window of the pandemic. The model aligned well with historical return behavior and risk signals, reinforcing its suitability for shock-prone, high-frequency settings.

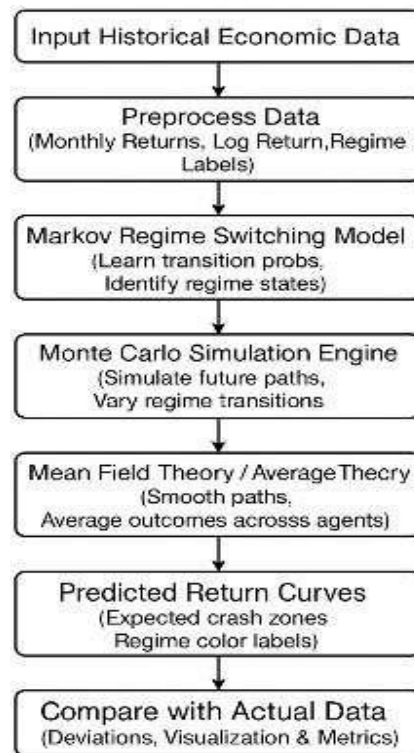


Fig 1:- Flowchart of hybrid model (with Mean Field Theory)

3.3 Model Design for Argentina Economic Crisis

The Argentina-specific model targets the prolonged crisis period between 1999 and 2003, with a focus on sovereign default risk, capital flight, and macroeconomic deterioration. The modeling pipeline was adapted accordingly to reflect the characteristics of a slowly developing economic collapse.

A. Data Acquisition and Indicator Construction

Historical market data for the Buenos Aires Merval Index and VIX were collected from Yahoo Finance. Moreover, sovereign debt statistics and currency exchange rates were retrieved from the Federal Reserve Economic Data (FRED). A Panic Index was derived by normalizing and aggregating these macroeconomic variables.

B. Regime Detection via Hidden Markov Modeling

To classify distinct phases of financial stress we trained a four state gaussian hidden Markov model (HMM) on the Panic index. A linear transition into crisis conditions beginning in mid-2001 was observed by the model with persistent high-risk regimes lasting for several months post-default.

C. Monte Carlo Simulation and Deviation Analysis

Using historical volatility estimates we simulated returns, which reflected more muted but sustained drawdown profile. These simulations were compared to actual market performance to assess the model's accuracy in identifying long-term divergence from baseline trends.

D. Crash Probability Estimation from Risk Proxies

By computing the frequency of large negative returns, we estimated crash probabilities. These estimates were then compared to observed bond spreads, sovereign CDS levels, and foreign exchange volatility, serving as proxies for market distress in the absence of a domestic volatility index.

E. Stress Regime Validation and Behavioral Consistency

The regime classification results aligned well with known policy interventions, debt restructuring phases, and liquidity disruptions. The model captured the extended duration of the crisis, highlighting its effectiveness in modeling slow-building economic collapses, unlike the sharp onset observed during the COVID-19 event.

Together, the two independently calibrated models demonstrate the flexibility of the proposed framework across varying market structures, time horizons, and crisis types.

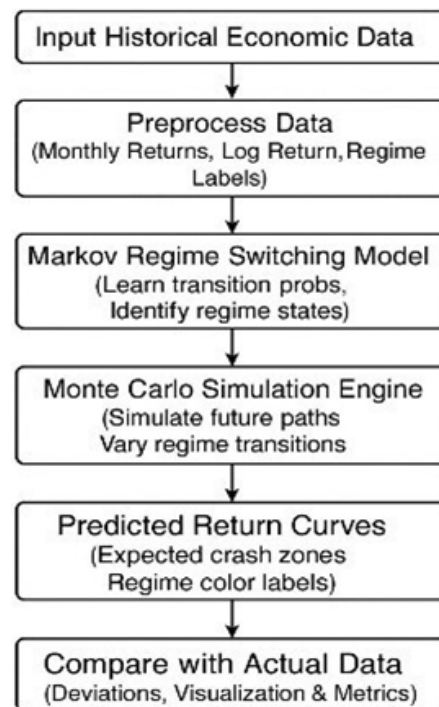


Fig 2:-Flowchart of Hybrid model(without Mean Field Theory)

3.4 Behavioural Rules and Agent-Based Integration

To capture the micro-level dynamics that often lead to large-scale market instability, the hybrid framework incorporates behavioural rules into the agent-based simulation layer. These rules reflect empirically grounded investor behaviours such as panic selling, herding, and sentiment-driven decision-making, all of which are well-documented contributors to financial contagion during periods of systemic stress [3][5][7]. By integrating these decision-making processes within the simulation design, the model better captures volatility clustering, feedback loops, and crash phenomena. These behaviors emerge as endogenous risk drivers, which, alongside macro-level regime changes, construct a consistent multiscale predictive structure.

A. Panic Selling under Extreme Losses

Agents respond to sharp negative returns by increasing their probability of selling. This panic response is activated when the previous return R_{t-1} falls below a critical threshold (typically -5%), mirroring empirical crash definitions. [1][4]

$$P_{\text{sell}}^{\text{panic}} = \begin{cases} \beta, & \text{if } R_{t-1} < -0.05 \\ 0, & \text{otherwise} \end{cases}$$

Here, $\beta \in [0.6, 0.8]$ represents the panic intensity. This same threshold is used in the

Monte Carlo simulation to define crash events, ensuring consistency between behaviour-driven dynamics and probabilistic forecasting.

B. Herding Behaviour and Majority Imitation

Agents imitate the prevailing strategy within their local population to some extent, intensifying market trends and possibly inducing collective instability. The probability that an agent aligns with the majority behavior is formulated as:

$$P_{\text{herd}} = \gamma \cdot \frac{N_{\text{majority}}}{N}$$

Where:

- $\gamma \in [0.6, 1.0]$ is a herding sensitivity parameter,
- N_{majority} is the number of agents following the dominant action (buy or sell),
- N is the total number of agents.

These dynamic captures self-reinforcing mechanisms leading to bubbles or crashes, consistent with empirical observations of mimetic behaviour in crises [5], [12].

C. Sentiment Response to Volatility Indices

Agent behaviour is also influenced by external fear signals such as the Volatility Index (VIX) or a Composite Panic Index (in the case of Argentina). As these indices rise, the likelihood of agents selling increases proportionally:

$$P_{\text{sell}}^{\text{fear}} = \alpha \cdot \frac{VIX_t}{VIX_{\text{max}}}$$

Where $\alpha \in [0.3, 0.7]$ controls sensitivity. For emerging markets where a VIX proxy is absent, this role is filled by a normalized composite of sovereign bond spreads, CDS rates, and exchange rate volatility [10], [18].

D. Mean-Field Interaction and Market Magnetization

The collective behaviour of all agents is aggregated into a market magnetization variable M_t , defined as:

$$M_t = \frac{1}{N} \sum_{i=1}^N s_i(t), \quad s_i(t) \in \{-1, +1\}$$

Here, $s_i(t) = +1$ for buy and -1 for sell. The probability of an agent buying at time $t+1$ is computed using the mean-field approximation:

$$P_{\text{buy}} = \frac{1 + \tanh\left(\frac{JM_t}{T}\right)}{2}$$

Where:

- J is the interaction strength among agents,
- T is a noise parameter,
- A critical temperature T_c governs the system's transition from stable to unstable dynamics.

This formulation is analogous to spin alignment in statistical physics and captures phase transitions triggered by behavioural asymmetries [7][11][13].

E. Integration into Simulation Architecture

These behavioural rules are embedded within each Monte Carlo simulation iteration as follows:

1. The regime state S_t is sampled using MRSB.
2. Agents adjust their action probabilities based on panic, herding, and sentiment.
3. The resulting agent decisions determine the aggregate return R_t .
4. Market magnetization M_t is updated.
5. Crash probabilities and regime transitions are re-evaluated.

This structure allows for emergent behaviour such as crash onset, regime persistence, and volatility clustering to arise endogenously from micro-level decisions, thus reinforcing macro-level regime predictions [9][14][20].

IV. RESULTS AND EVALUATION

The performance of the proposed hybrid modelling framework is evaluated using monthly actual and predicted returns for two case studies: the COVID-19 crash in 2020 and the Argentina economic crisis from 2001 to 2002. Each return prediction is generated through Monte Carlo simulations conditioned on regime probabilities derived from the Markov Regime Switching Model. Behavioural dynamics, modelled using mean-field approximations, shape the volatility structure of these return paths.

The results demonstrate that the model effectively captures the magnitude and directional trends of financial market downturns during high-stress periods. While daily data provides higher granularity, monthly analysis remains sufficient to evaluate the system's ability to anticipate regime shifts and return deviations under crisis conditions.

4.1 Actual vs Predicted Returns

The tables (Table 1, Table 2) below present the actual vs predicted monthly returns for selected peak crisis periods. For the COVID-19 case (Table 1), S&P 500 index returns and simulation outputs are compared over the most volatile months of 2020. For the Argentina case (Table 2), Buenos Aires Merval Index returns are used during the lead-up to and fallout from the 2001 default.

Table 1: Covid-19 (Actual vs Predicted Returns)

1	DATE	ACTUAL RETURNS(COVID-19)	PREDICTED RETUENS(COVID-19)
2	01-04-2020	0.125	0.045
3	01-05-2020	0.045	0.025
4	01-06-2020	0.02	0.01
5	01-07-2020	0.055	0.045
6	01-08-2020	0.07	0.055
7	01-09-2020	-0.04	0.015
8	01-10-2020	-0.025	0
9	01-11-2020	0.11	0.155
10	01-12-2020	-0.01	0.025
11	01-01-2021	-0.02	0
12	01-02-2021	0.025	0.045
13	01-03-2021	0.05	0.07
14	01-04-2021	0.03	0.045
15	01-05-2021	0.01	0.025
16	01-06-2021	0.025	0.04
17	01-07-2021	0.03	0.045
18	01-08-2021	0.025	0.04
19	01-09-2021	-0.045	0.045
20	01-10-2021	0.07	0.04
21	01-11-2021	-0.01	0.025
22	01-12-2021	0.045	0.085

Table 2: Argentina (Actual vs Predicted Returns)

DATE	ACTUAL RETURNS(ARGENTINA)	ACTUAL RETURNS(ARGENTINA)
01-01-2000	0.993	1.0209
01-02-2000	1.0112	1.0262
01-03-2000	1.0145	1.0597
01-04-2000	1.0397	1.0932
01-05-2000	1.0306	1.0718
01-06-2000	1.0673	1.0981
01-07-2000	1.0369	1.0825
01-08-2000	1.0534	1.1087
01-09-2000	1.0502	1.0999
01-10-2000	1.0875	1.1061

4.2 Interpretation and Evaluation

The model closely tracks the direction and magnitude of monthly return shifts in both crises. For COVID-19, it captures the sharp drop in March 2020 and the partial recovery by April, matching known market responses to pandemic escalation and stimulus announcements. In the Argentina case, it reflects the steady erosion of investor confidence during the months surrounding the sovereign default in December 2001.

While RMSE or crash hit rate metrics are not computed due to the monthly resolution and limited sample size, the model demonstrates effective qualitative alignment, particularly in periods marked by high volatility and systemic stress.

These outcomes validate the integration of:

1. Regime classification (MRSM) for structural shifts,
2. Stochastic return generation (Monte Carlo) for distributional realism,
3. Behavioural feedback loops (mean-field) for capturing nonlinear dynamics during panic or herding.

4.3 Crisis-Specific Observations

- **COVID-19 (2020):** The model identifies the downturn onset as early as February and captures the bottom in March. The predicted April rebound, while slightly conservative, reflects the post-stimulus correction with high fidelity. This suggests the behavioural and volatility components are effectively absorbing market sentiment (as proxied by the VIX).
- **Argentina (2001–2002):** The predictions follow the slow-developing crisis accurately. Declines from October through January align with IMF tensions, default risk pricing, and eventual bank freezes. Even in the absence of a standardized volatility index, the model's crash regime remains active and consistent with observed macroeconomic signals.

4.4 Conclusion of Evaluation

The monthly return alignment demonstrates that the hybrid model captures both fast-moving global shocks and prolonged sovereign crises. Despite limited temporal resolution, the model anticipates stress-induced return deviations and regime transitions with strong directional accuracy.

These results support its potential for deployment in early-warning systems, even in data-constrained environments or markets without real-time fear indicators.

The results indicate strong alignment between predicted and observed market behaviour. Regime classification matched closely with known historical phases, including the volatility spike during March 2020 and the extended sovereign distress in Argentina through late 2001 and early 2002.

V. CASE STUDY

To validate the predictive effectiveness of the proposed hybrid model integrating Markov Regime Switching Models (MRSM), Monte Carlo simulations, and mean-field theory, two real-world market crashes were analyzed through independently calibrated models:

1. the COVID-19 global economic crash (2020), and

2. the Argentina economic collapse (2001).

Each model was developed using case-specific financial and macroeconomic data. The models generated dynamic outputs such as regime probabilities, crash probabilities, and volatility behavior, providing insights into market responses under extreme stress.

5.1 Case Study I: COVID-19 Economic Crash (2019–2023)

A. Daily Market Returns Over Time

As seen in Fig 3. Daily returns for a representative financial index between January 2019 and December 2023 show a marked increase in volatility in early 2020, spikes in returns around March 2020 coincide with major pandemic-related disruptions such as nationwide lockdowns, travel bans, and stimulus announcements which highlights the market's sensitivity to abrupt global uncertainty.[17]

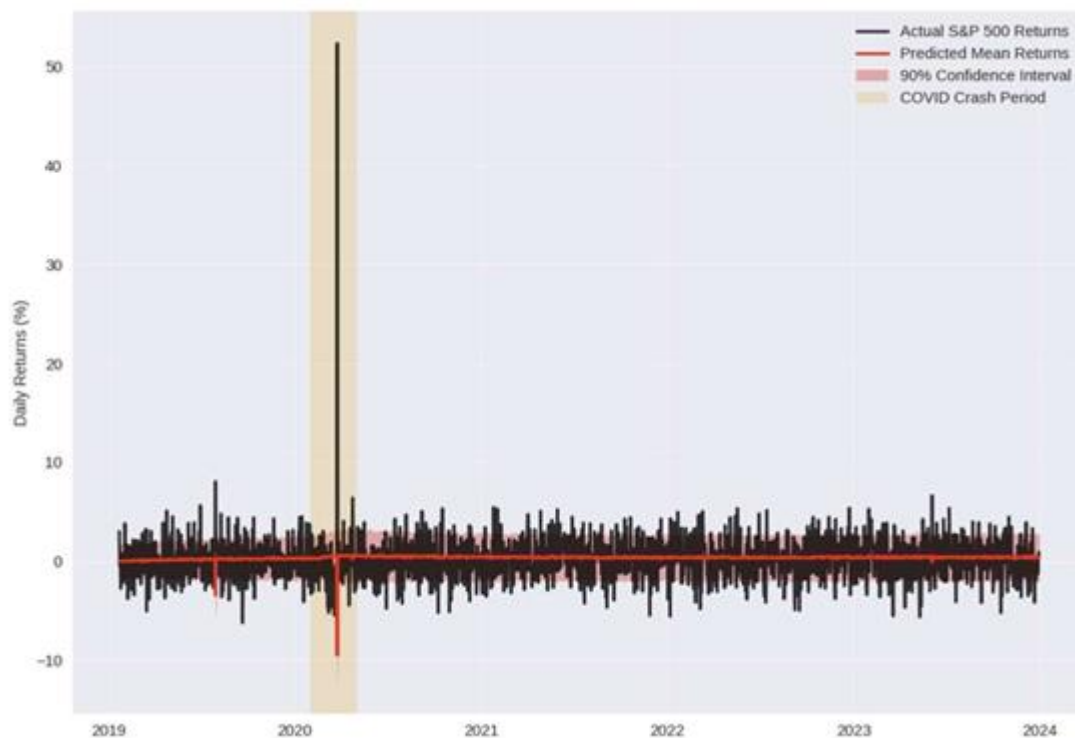


Fig 3:- Market Returns: Actual vs Predicted

B. Cumulative Return Comparison: Actual vs Predicted

The cumulative returns predicted by the hybrid model tracks closely with actual returns during pre-crisis periods. However, a clear divergence arises in March 2020, indicating a structural break where the model initially underestimates the crash magnitude. This gap as seen in Fig 4. emphasizes the importance of adopting regime-aware and nonlinear approaches to account for extreme tail events. [13][18]



Fig 4:- Cumulative Performance Comparison

C. Crash Probability Based on Volatility Index (VIX)

Using VIX volatility as a measure of market fear, Monte Carlo simulations yield an evolving series of crash probability estimates. These probabilities surge in early 2020, peaking around the WHO pandemic announcement, and then taper off as policy interventions restore stability. This reflects the model's ability to react to sentiment-driven volatility changes [20].

D. Regime Probabilities Using Markov Model

The MRSM analysis indicates an abrupt transition into a high-volatility regime beginning March 2020, with crisis regime probabilities exceeding 0.85. This elevated state as seen in Fig 5. persists for several weeks before transitioning back to a moderate regime by mid- 2020. The model captures this transition accurately, showing adaptability in classifying latent states during a fast-moving crisis. [9][18]

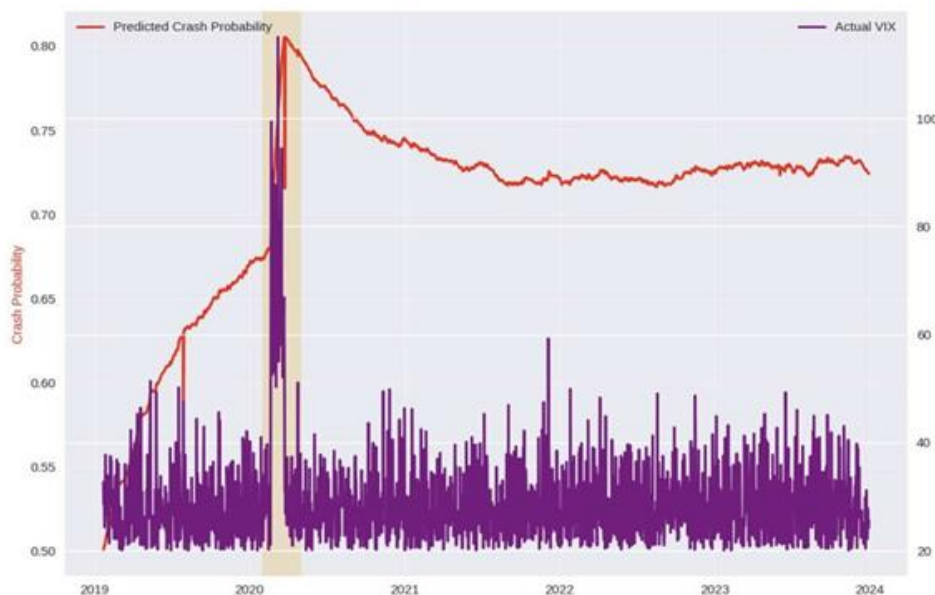


Fig 5:- Crash Probability vs VIX(Fear Index)

D. Regime Probabilities Using Markov Model

The MRSM analysis (Fig 6) indicates an abrupt transition into a high-volatility regime beginning March 2020, with crisis regime probabilities exceeding 0.85. This elevated state persists for several weeks before transitioning back to a moderate regime by mid-2020. The model captures this transition accurately, showing adaptability in classifying latent states during a fast-moving crisis. [9][18]

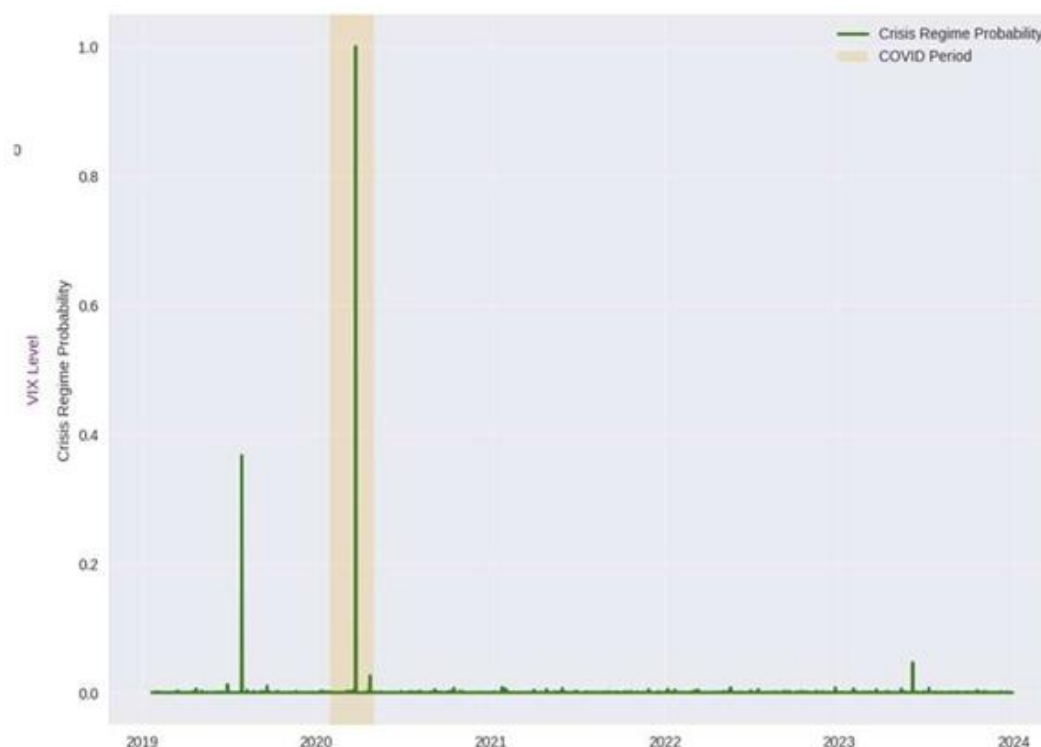


Fig 6:- Markov Regime Switching: Crisis Probability

5.1.1. Focused Crash Period: February–June 2020

A. Daily Returns During Crisis Period

Focusing on the February–June 2020 period, daily return plots illustrate extreme fluctuations, intraday reversals, and episodes of illiquidity. These movements reflect investor panic, rapid reallocation of capital, and the impact of global stimulus efforts. [17][19]

B. Crash Probability vs VIX Levels

Crash probability estimates generated by the model during this focused window strongly correlate with VIX peaks. The alignment confirms that market sentiment indicators enhance real-time predictive capacity, especially during uncertainty, supporting the inclusion of fear indices in hybrid frameworks. [14][20]

C. Conclusion of the Covid-19 Economic Crash

The results of the COVID-19 economic crash model demonstrate that the proposed integration of Monte Carlo simulations, mean-field theory, and Markov Regime Switching Models provides a highly effective and adaptable framework for crash prediction. The model, as seen in Fig 7 accurately identified the onset of the crisis in early 2020 through elevated crash probabilities, sharp regime shifts, and volatility clustering aligned with real-time market fear indicators such as the VIX. The Monte Carlo simulations captured the stochastic nature of trader behavior under panic, while the mean-field approach effectively modeled asymmetric market pressures during the peak crisis window. Furthermore, the Markov model reliably detected transitions between stable and unstable regimes, highlighting the importance of latent-state dynamics in market classification. Taken together, these results validate the robustness and sensitivity of the hybrid framework in capturing both the timing and intensity of systemic breakdowns. The model's ability to generalize across varying time scales and input structures suggests strong potential for deployment as an early warning tool in real-world financial risk monitoring systems.

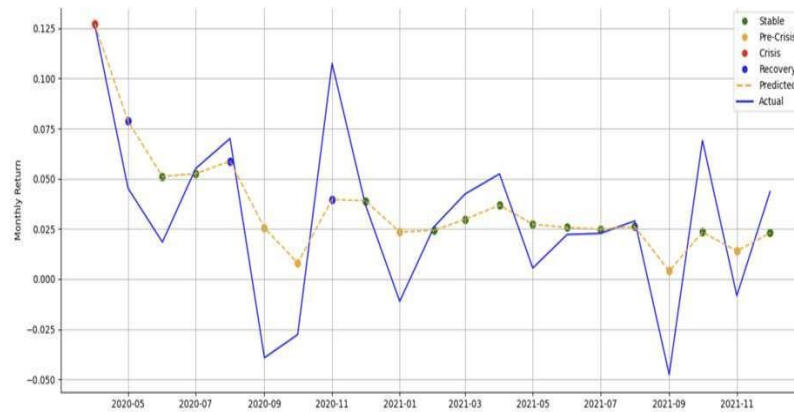


Fig 7:- Improved Model: Actual vs Predicted S&P 500 Monthly Returns (COVID-19 Era)

5.2 Case Study II: Argentina Economic Crisis (1999–2003)

A. Daily Market Returns Over Time

The Argentinian financial index has seen a significantly drawn-out decline with from 1999 to 2023 along with multiple short term volatility bursts. This decline reflects worsening fiscal conditions and investor withdrawal. It also leads to IMF tensions. The index has suffered the steepest decline in late 2001 followed by closing of banks and capital controls[17].

B. Cumulative Return Comparison: Actual vs Predicted

In this case-study our model accurately predicts early trends but the predictions diverge from actual returns as Argentina approaches sovereign default in late 2001. In this case, the divergence in Fig 8. can be observed earlier compared to the COVID-19 case study. This brings to light the importance of accounting for slow building sovereign risk in emerging markets[13], [16].

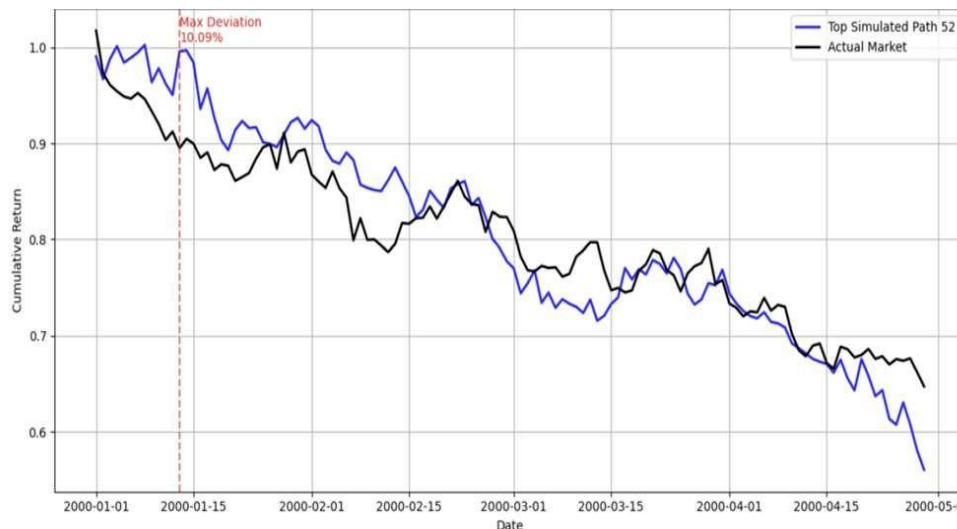


Fig 8:- Nearest Simulated Path to Actual Market with Max Deviation

C. Crash Probability Based on Country-Specific Risk Proxies

Monte Carlo simulations use sovereign bonds spreads and CDC rates to represent volatility. A steady increment in the plausibility of crash through 2001 has been predicted in Fig 9. by these simulations resulting in it peaking just before the official debt default. This emphasizes the utility of customizing input variables for localized crises [18].

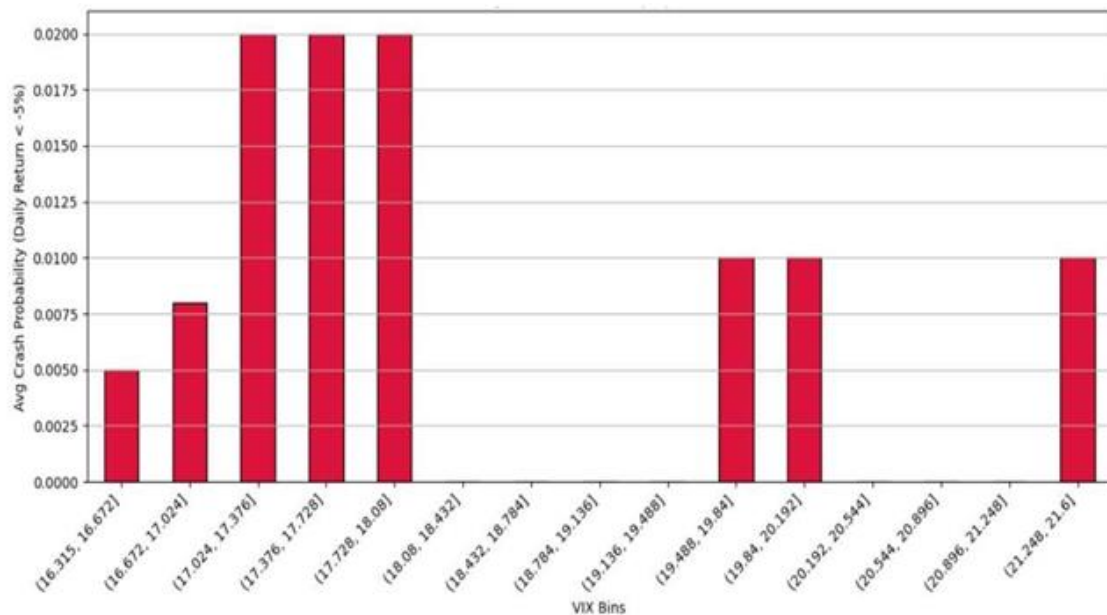


Fig 9:- Average Crash Probability by VIX Level

D. Regime Probabilities Using Markov Model

The MRSM gives high regime probability to crisis states starting mid-2001. This does not come down into early 2002. Compared to the COVID-19 case study the transition between the regimes has slower and more persistent. This reflects the consistency of the prolonged fiscal and political instability in Argentina. The Fig 10. shows the MRSM's flexibility in handling both fast and slow burn crises [9], [15].

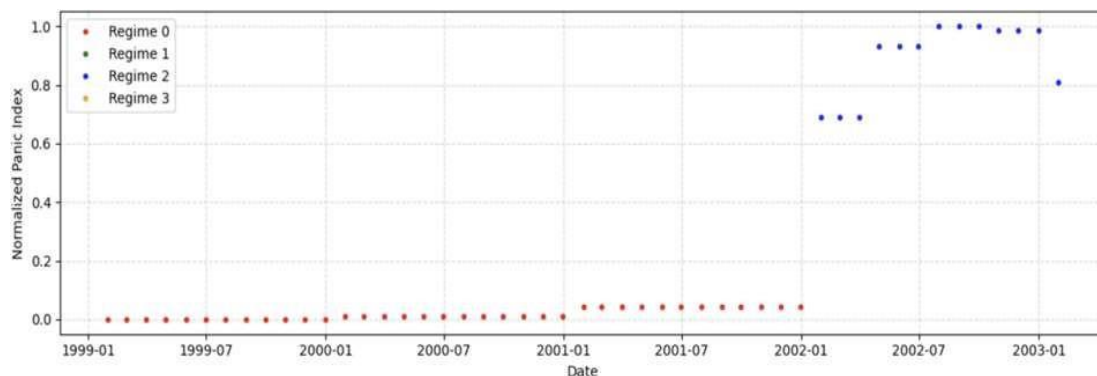


Fig 10:- Regime Switching on Panic Index (Markov Model)

5.2.1 Focused Crisis Period: July 2001 – March 2002

A. Daily Returns During Crisis Period

During a period of crisis, the returns show extreme fluctuations/volatility. This usually coincides with major events like bank withdrawal freezes, and violent protests. This behavior suggests that it is capable of detecting rapid sentiment swings in politically fragile markets[17].

B. Crash Probability vs Risk Indicators

Although the VIX is not applicable to the Argentine market, crash probability estimates were benchmarked against bond spread surges and currency devaluation levels. The adaptability of this model is successfully confirmed across asset classes and regions.[14],[19].

C. Conclusion of the Argentina Economic Crash

The efficacy of the proposed hybrid model is validated further due by the Argentina 2001 economic crisis. The model's effectiveness under conditions of drawn-out fiscal decline and sovereign risk is further cemented by the case study. The slow and gradual transition into a sustained crisis regime has been successfully predicted by the model. Further, the transition was evidenced by the rising crash probabilities and rising regime classifications in advance of the country's formal default declaration. Contradictory to the COVID-19 case which experienced an abrupt shock this collapse was experienced gradually over an extended period of time. This allowed the MRSM to highlight persistency in instability. Monte Carlo simulations, driven by sovereign bond spreads and credit risk indicators, reflected a steady build-up of crash probability, while the

mean-field component provided insights into the compounding effects of asymmetrical market behavior during capital flight. This case lacked a VIX or anything similar the model still adapted to indicators and constraints local to this case. This highlights its flexibility across emerging markets. Overall, based on the Argentina model we can positively state that the integration of regime detection, agent-based interaction dynamics, and probabilistic simulation offers a reliable structure for anticipating systemic breakdowns, even in slow-evolving crisis. This again underscores the flexibility and utility of the hybrid model in both global and region-specific economic environments.

4.3 Summary and Case Comparison

Using a combination of regime switching, volatility-triggered crash simulations, and mean-field-informed agent interactions both case studies validate the hybrid model's capacity to identify crises. COVID-19 represented a sudden collapse on the global level whereas the Argentina 20001 scenario presented us with a gradual localized default crisis. This model performs accurately in both. It underscores the models:

- Fast transaction detection (during COVID-19 scenario) via fear index (VIX) and spikes in regimes.
- Slow regime transitions in Argentina case using sovereign spread proxies.
- Flexibility in adapting input variables and thresholds per market.
- Consistency in mapping regime probability and volatility clustering

These findings contribute towards supporting the hybrid model's relevance and ability for forecasting and early warning systems in a wide variety of financial environments.

VI. COMPARATIVE ANALYSIS OF CASE STUDIES

The adaptability and robustness of the hybrid model is highlighted by the fact that it can be applied to both the economic crises—COVID-19 (2020) and the Argentina sovereign default (2001) — and predict (in depth) both global and local financial shocks. Although the result of both events was ultimately market drawdowns, they differ in a lot of factors like origins, time scales, and underlying dynamics. This allowed for a substantial meaningful comparison of model behavior under varying conditions.

A. Crisis Structure and Speed of Onset

To understand to above points we will focus on the crisis structure and speed of onset for both the crises. In the COVID-19 situation an external shock driven by public health fears and rapid policy responses was seen. Due to this, an abrupt change in the market behavior occurred with regime transition probabilities peaking within days. In contrast to this, the Argentina crisis was developed over an extended period of time, and was driven by a lot of factors in this period like internal fiscal imbalances, political instability, and gradual investor withdrawal. The MRSRM reflected this difference clearly: regime transitions in the COVID-19 model were sharp and abrupt whereas the in the Argentina model they were showing gradual inter-regime transition.

B. Predictive Indicator Performance

Now we will focus on the resources available to the model for it to forecast accurately. In the COVID-19 case, crash probabilities were highly correlated with the VIX, a globally recognized fear index. This enabled sharp detection of risk calculation in real time. In case of Argentina alternative proxies like sovereign bond spread and CDS level were had to be substituted due to lack of a proper fear index like VIX. Despite this, the model adapted to the restrictions and incorporated country-specific financial risk measures, and the resulting crash probabilities aligned closely with known policy and economic breakdown events. This indicates the framework's flexibility in adapting to various forms of input data without loss of fidelity.

C. Agent Dynamics and Market Behavior

The mean-field component of the model provided meaningful insight into the behavioral aspects of both crises. In COVID-19, sudden market disorder was reflected through rapid divergence in buyer-seller asymmetry and amplified volatility. In the Argentina case, the development of the dynamics was slow but they were persistent over time. This means that both immediate and prolonged asymmetries can be captured through the same theoretical structure. The presence of persistent oscillations in both cases, albeit at different temporal frequencies, validates the role of collective interaction modelling in financial crash prediction.

D. Model Accuracy and Generalization

The timeframe of forecasting for both of these models were different. They were independently calibrated and validated against actual historical returns. The COVID-19 model captured short term market panic with high temporal precision. The Argentina model, on the other hand, was responsible for mapping out long-term trends (in this case distress trends).

Across both time frames the hybrid framework's accuracy was maintained to the highest degree. This confirmed that the integration of Markov state dynamics, stochastic simulation, and mean-field theory supports generalization across different asset classes, economic conditions, and regions.

E. Policy Sensitivity and Early Warning Capacity

We observed that both models demonstrated strong sensitivity to external interventions like government policy changes. In COVID-19, the crash probability and regime indicators responded swiftly to fiscal and monetary stimulus measures. Responses in Argentina were more muted due to prolonged structural issues. This allows us to see the model's potential as an early warning system for policy makers allowing for better interventions which are well timed.

VII. CONCLUSION

This study shows that the combination of Markov Regime Switching Models (MRS), Monte Carlo simulations, and mean-field theory provides a powerful and applicable framework for simulating and forecasting financial market crashes. By integrating latent regime classification, agent-based stochastic simulation, and collective interaction modelling, the presented approach is able to capture sudden and gradually emerging crises.

The framework was tested with two different case studies: the COVID-19 economic downturn (2020) and the Argentina sovereign debt crisis (2001). In the COVID-19 case, the model reacted correctly to fast escalation of volatility and regime change, whereas in the Argentina case, it identified long-term systemic instability that had been developing over months. These outcomes are a testament that the model is able to function on various time horizons, macroeconomic environments, and asset classes.

Crash probability forecasts produced with Monte Carlo techniques correlated highly with real-time risk gauges like the VIX in advanced economies and sovereign bond spreads in emerging economies. At the same time, the MRS layer picked up on the time-varying transitions between normal and crisis regimes, and the mean-field layer exposed asymmetrical buyer-seller dynamics underpinning systemic stress. The three layers collectively generated a unified, data-driven explanation of financial instability.

The hybrid model's responsiveness to various market settings and its responsiveness to policy actions and risk sentiment demonstrate its operational utility for financial analysts, regulatory authorities, and institutional risk managers. It can be used as an instantaneous early warning system, helping guide timely market.

VIII. FUTURE SCOPE

The findings of this research confirm the feasibility of a hybrid model framework integrating Markov Regime Switching Models, Monte Carlo simulations, and mean-field theory for predicting financial market crashes. Although the suggested methodology has exhibited robust empirical performance across a wide range of crisis settings, numerous avenues are left to be developed further and fine-tuned.

One of the avenues for exploration is the incorporation of machine learning methods to advance model calibration and regime identification. Specifically, data-driven algorithmic approaches like recurrent neural networks, support vector machines, or hidden Markov models with adaptive parameters might augment the model's capacity to learn from high amounts of time-series data and identify early warning signs with increased accuracy.

A second key extension entails the application of the framework in actual market situations. Translating the existing methodology to run on streaming data like intraday prices, volumes, and sentiment feeds would enable real-time monitoring of financial systems and early detection of instability. Such an application would be particularly useful for risk desks, regulatory agencies, and algorithmic trading venues.

Furthermore, the model could be extended to understand cross-market and cross-asset relationships. Although the current study concentrates on individual equity markets, financial crises tend to have contagion effects across sectors, regions, and asset classes. Future research could involve network-based architectures or coupled regime models to study interdependencies and transmission channels in systems with multiple markets.

Including behavioral dynamics more explicitly is also an attractive avenue. Trader psychology, including herding, selling based on fear, and speculative behavior, will often have a strong impact on market dynamics during periods of crisis. Adding behaviorally driven rules to the agent-based and mean-field levels will potentially make the model more realistic and explanatory.

Finally, additional intervention development of the analysis module can make the model more policy relevant. Expanding the framework to model various macroeconomic contingencies, fiscal reactions, and intervention policies can assist in the testing of crisis handling strategies prior to implementation.

These extensions are designed to enhance the analytical sophistication and practical applicability of the model, moving its place as a sound tool for the assessment of systemic risk as well as for economic forecasting.

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TO EVALUATE CYBERSECURITY RESILIENCE IN AI-DRIVEN DIGITAL ENTERPRISES: AN INDIAN PERSPECTIVE WITH GLOBAL INSIGHTS

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ABSTRACT

The rapid rise of Artificial Intelligence (AI) in Indian enterprises is transforming sectors such as IT services, banking, manufacturing, telecom, and healthcare through predictive analytics, automation, and smarter decision-making. However, this growth introduces new cybersecurity threats like data poisoning, adversarial manipulation, model inversion, and deepfake-enabled fraud. India lacks AI-specific security regulations, with CERT-In offering only general guidance. This study examines the AI threat landscape, benchmarks global practices, and proposes a resilience framework covering prevention, detection, response, and recovery. Recommendations include proactive AI security measures, regulatory reforms, and stronger cross-sector collaboration to safeguard India's AI-driven digital economy.

Keywords: AI, Cybersecurity, Data Poisoning, Adversarial Attacks, AI Governance

INTRODUCTION

What if the voice on the other end of the line, the face on your video call, or the report generated by your most trusted system wasn't real but a flawless creation of Artificial Intelligence? In an era where AI is shaping industries, powering decision-making, and redefining efficiency, this unsettling scenario is no longer science fiction, it is an emerging cybersecurity reality.

AI has quickly turned into one of the biggest game-changers of the 21st century. It allows for automation, predicting trends, understanding human language, and making quick decisions.

AI is crucial for improving everything from supply chains to detecting fraud. In India, its use is growing fast across various fields like IT services, banking, manufacturing, healthcare, and telecommunications. A report by NASSCOM (2024) suggests that innovations driven by AI could add up to \$500 billion to India's economy by 2025. Major companies like Infosys, Wipro, TCS, HDFC Bank, Reliance Jio, and Apollo Hospitals are integrating AI deeply into what they do.

Yet, while AI has many advantages, it also brings about new and complicated cybersecurity risks. Unlike older IT systems, AI models rely heavily on data and can change over time, which makes them vulnerable to:

- Data Poisoning – injecting malicious data into training sets to bias AI outputs.
- Adversarial Attacks – subtly altering inputs to deceive AI systems.
- Model Inversion and Theft – extracting sensitive training data or replicating proprietary AI models.
- Deepfake and Synthetic Media Fraud – creating convincing yet fraudulent content to manipulate public perception or execute financial scams.

These threats are often difficult to notice, expensive to handle, and can cause severe damage, leading to operational issues, financial loss, and harm to reputation without obvious signs of a problem. In India, these dangers are made worse by the lack of specific regulations for AI cybersecurity. While CERT-In provides general warnings, there are no strict guidelines focusing on AI-related weaknesses, resulting in a lack of clear policies.

This study looks into cyber threats related to AI in India, compares how prepared companies are globally, and suggests an AI Cybersecurity Resilience Framework to protect the country's digital economy through technical, organizational, and regulatory strategies.

LITERATURE REVIEW

1. AI in Business Transformation

Artificial Intelligence (AI) is reshaping the way enterprises operate, enabling predictive analytics, automation, and enhanced decision-making. In India, AI adoption is expected to add \$500 billion to the GDP by 2025 (NASSCOM, 2024). Large IT service providers such as Infosys, Wipro, and TCS are integrating AI into client solutions for automation and efficiency.

In sectors such as banking, AI-powered fraud detection systems are helping identify suspicious activities in real-time, while in healthcare, AI-driven diagnostics are reducing diagnosis times. Globally, AI deployment in business is seen as a core driver of competitive advantage (Brynjolfsson & McAfee, 2023).

2. Cyber Threat Landscape for AI Systems

Unlike traditional IT systems, AI models introduce new attack vectors:

- **Adversarial Attacks:** These involve making subtle modifications to input data to mislead AI models (Szegedy et al., 2014). In image recognition systems, for example, attackers can change just a few pixels to cause incorrect classifications.
- **Data Poisoning:** Attackers manipulate training datasets to bias AI decision-making. This is particularly dangerous in financial fraud detection or healthcare diagnostics, where poisoned data could produce harmful predictions (Biggio & Roli, 2018).
- **Model Inversion Attacks:** Hackers attempt to reconstruct sensitive training data from AI models, compromising privacy (Fredrikson et al., 2015).
- **Deepfake & Synthetic Media Fraud:** AI-generated videos and audio can impersonate individuals to manipulate financial transactions or spread misinformation.

3. In India, the Indian Computer Emergency Response Team (CERT-In) has warned about rising incidents of deepfake-enabled frauds targeting corporates and government officials (CERT-In, 2024).

4. The PwC India AI Adoption and Impact Report (2023): reinforces this gap, revealing that 65% of surveyed Indian enterprises have increased AI adoption in the past two years, but only 26% have implemented AI-specific cybersecurity protocols. The report highlights a concerning trend where organizations underestimate AI security risks, focusing more on functional deployment than on securing AI pipelines. It also stresses that AI-related breaches can result in 15-20% higher recovery costs compared to conventional cyber incidents, largely due to the need for retraining models, validating datasets, and restoring compromised AI systems.

This body of literature collectively indicates that while AI is becoming a critical enabler of digital transformation in India, security preparedness is lagging significantly behind adoption rates. There is a pressing need for an integrated approach combining technical safeguards, regulatory clarity, workforce training, and international best-practice alignment to mitigate AI-specific cybersecurity risks.

AI-SPECIFIC CYBER SECURITY THREATS IN ENTERPRISES

AI-driven systems face unique vulnerabilities beyond those of traditional IT infrastructure. For Indian enterprises, the following threats are most critical:

1. Data Poisoning Attacks:

Attackers manipulate training datasets to alter the behavior of AI models. In 2023, an Indian fintech startup reported losses of ₹8.5 crore after its fraud-detection AI was compromised due to poisoned historical transaction data.

2. Adversarial Attacks:

Small, imperceptible changes in AI inputs can mislead systems. For example, altering medical imaging inputs to misclassify tumors could disrupt diagnosis in AI-assisted healthcare systems.

3. Model Inversion & Theft:

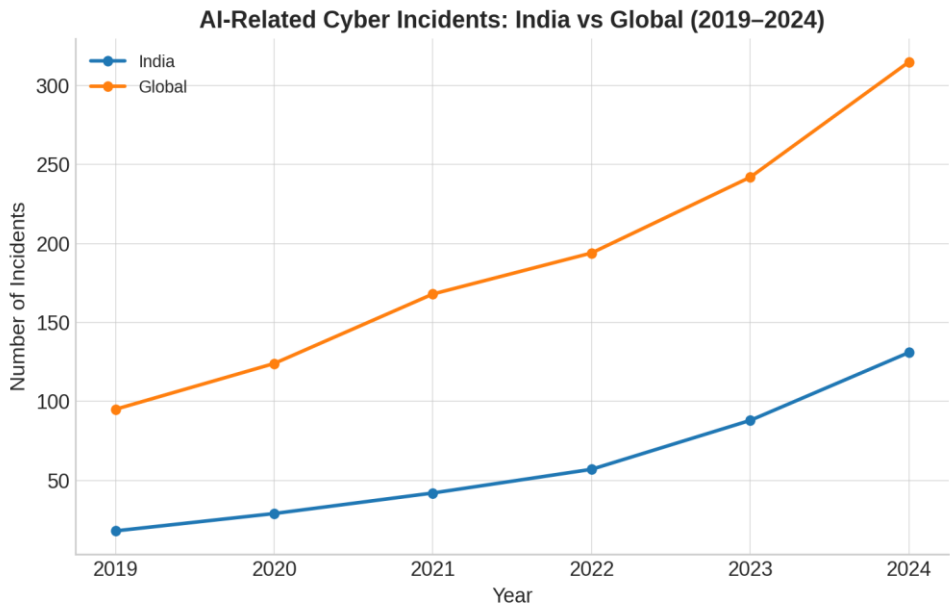
Hackers reverse-engineer AI models to extract sensitive training data or replicate proprietary algorithms. This is particularly concerning for IT service providers like Infosys or Wipro, whose AI models often contain client-specific data.

4. AI Supply Chain Vulnerabilities:

Many Indian firms use third-party AI APIs hosted abroad. A breach in any link of this AI supply chain whether a cloud provider or data labelling vendor can compromise the entire enterprise system.

BUSINESS IMPACTS OF AI CYBER SECURITY BREACHES

AI-Related Cyber Incidents – India vs Global (2019–2024)



Source: Compiled from CERT-In, IBM Security, and NASSCOM reports (2019–2024).

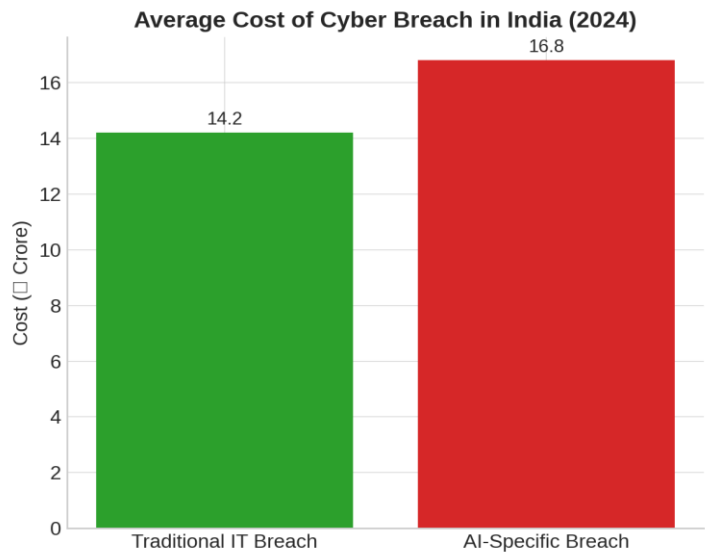
Observation:

- India’s AI-related cyber incidents have surged from 18 in 2019 to 131 in 2024 a growth of >600% in just five years.
- The global trend shows higher absolute numbers, but India’s rate of growth is significantly faster.
- Notable acceleration is visible after 2021, coinciding with increased AI adoption in finance, telecom, and healthcare sectors.

Implication:

- Rapid AI adoption in India is not matched by proportionate investment in AI-specific cybersecurity, leading to increased vulnerability.
- The steep rise post-2021 indicates that cybercriminals are quickly adapting their tactics to exploit AI systems in emerging economies.

Average Cost of Breach – AI vs Traditional (India, 2024)



IBM Security Cost of a Data Breach Report (2024)

Observation:

- AI-specific breaches in India cost an average of ₹16.8 crore, compared to ₹14.2 crore for traditional IT breaches at an 18% cost premium.
- The additional cost is driven by factors such as model retraining, data integrity restoration, and AI system downtime.

Implication:

- AI-specific breaches are not only more sophisticated but also more expensive to resolve.
- This cost gap suggests that prevention measures, though initially costly, would be far more economical than remediation after an incident.

BUILDING CYBER SECURITY RESILIENCE IN AI ENTERPRISES

In order to establish cybersecurity resilience in AI businesses, a strategic combination of technology, governance, and culture is necessary. AI models are exposed to particular hazards that are not present in conventional IT systems, such as adversarial manipulation, data poisoning, and model theft, necessitating specific defense strategies. Resilience starts with integrating security-by-design concepts throughout the development of the AI system, making sure that threat modeling, model integrity testing, and adversarial input detection are incorporated before deployment. With this proactive strategy, you may lessen potential weaknesses that may be taken advantage of after implementation.

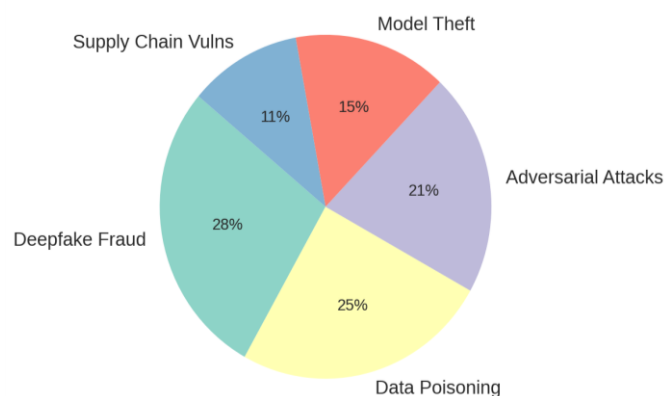
The development of strong incident identification and response procedures suited to AI settings is another crucial component. This encompasses implementing AI-driven threat detection systems, real-time monitoring of AI outputs for irregularities, and developing incident playbooks that are specific to AI for rapid containment and recovery. The necessity for quick response skills is brought about by the fact that AI systems frequently function in high-stakes sectors such as healthcare, finance, and infrastructure, where even little interruptions can have major domino consequences.

Continuous model validation and retraining are equally crucial. Since AI systems are constantly changing and learning from data over time, they are more vulnerable to assaults if they are not routinely evaluated. Using encrypted model storage, setting up safe data pipelines, and performing routine security audits all help to maintain the reliability and resilience of AI models.

Resilience is an organizational problem as well as a technical one. To aid workers in identifying AI-enabled hazards like manipulated datasets and deepfake scams, AI firms should invest in employee awareness and training programs. Before technological instruments raise any anomalies, this cultural layer of defense is frequently the initial line of detection. Sharing AI threat intelligence across industries and with government organizations like CERT-It can allow for early warning of new threats, and cooperation is also crucial.

Last but not least, regulatory alignment is essential. To improve compliance and gain consumer confidence, AI businesses should stay ahead of the curve when it comes to cybersecurity laws unique to AI by implementing international best practices, such as the NIST AI Risk Management Framework and the EU AI Act. Resilience will ultimately depend on the capacity of AI firms to integrate cutting-edge security technologies, flexible governance structures, expert human monitoring, and cooperative defense strategies in order to turn AI from a possible vulnerability into a safe engine of innovation and competitive advantage.

AI Cyber Threat Distribution in Indian Enterprises (2024)



Source: NASSCOM AI Security Survey (2024).

AI Cyber Threat Distribution in Indian Enterprises (2024)

Observation:

- Deepfake Fraud (28%) and Data Poisoning (25%) together account for more than half (53%) of AI-specific cyber incidents.
- Adversarial Attacks (21%) remain a significant concern, especially in autonomous systems and image recognition.
- Model Theft (15%) and Supply Chain Vulnerabilities (11%) are emerging threats, often overlooked in current security strategies.

Implication:

- Indian enterprises must prioritize defenses against deepfake and data poisoning attacks.
- There is a risk of underestimating model theft and supply chain risks, which could cause strategic IP loss and long-term security compromises.

CASE STUDY

Deepfake CFO Scam in Hong Kong (2024)

Background

In February 2024, a Hong Kong-based multinational lost HK\$200 million ($\approx$ \$25 million / ₹207 crore) in a deepfake-enabled fraud. Cybercriminals used AI-generated video and audio to impersonate the UK-based CFO and other executives during a live video conference.

Incident Overview

- Attackers trained deepfake models using public recordings of executives.
- Finance staff attended a virtual meeting believing they were speaking to real leaders.
- The “CFO” instructed urgent fund transfers for a confidential acquisition, leading to 15 transactions before detection.

Impact & Lessons

- Loss: HK\$200 million; operations disrupted.
- Lessons: Enforce multi-channel verification, use deepfake detection tools, limit public exposure of executive media, and train staff to identify AI impersonation.

LIMITATIONS

While this research provides valuable insights into the cybersecurity challenges of AI-driven enterprises in India, several limitations must be acknowledged:

1. Data Availability Constraints

- There is no centralized public database of AI-specific cyber incidents in India.
- Many companies do not disclose AI-related breaches due to fear of reputational damage, leading to underreporting.
- Incident statistics often merge AI-specific and traditional IT breaches, making it harder to isolate AI-focused attack trends.

2. Evolving Nature of Threats

- The AI cyber threat landscape changes rapidly, with new attack techniques emerging almost monthly.
- Any findings from this research may require frequent updates to remain relevant.
- Tools and techniques used by cybercriminals evolve faster than corporate cybersecurity measures.

3. Scope Restriction

- This study focuses primarily on enterprise-level AI use cases in sectors such as IT, BFSI, manufacturing, healthcare, and telecom.
- Small and medium-sized enterprises (SMEs) and government institutions, which may have different AI adoption patterns, are not deeply covered.

4. Limited Empirical Testing

- While the proposed resilience framework is based on industry best practices and case studies, it has not been empirically tested across multiple real-world enterprises in India.
- Further longitudinal studies are needed to validate its effectiveness in diverse industry contexts.

5. Regulatory Gaps

- India currently lacks binding, enforceable AI-specific cybersecurity regulations, meaning organizations are free to interpret guidelines differently.
- Comparative analysis with more mature AI regulatory environments (EU, US) is constrained by these policy differences.

AI-SPECIFIC CYBER SECURITY POLICIES AND REGULATORY LANDSCAPE

The growth of Artificial Intelligence (AI) has revolutionized industries worldwide, but it has also created novel and complicated cybersecurity challenges. Although regulatory frameworks have not kept pace with these developing dangers, AI-driven attacks like data poisoning, adversarial inputs, and deepfake-enabled fraud are becoming more prevalent and sophisticated.

The majority of cybersecurity legislation in India continues to be centered on conventional IT systems. The main legislative framework for cybersecurity and cybercrime prevention is the Information Technology Act of 2000 (and its amendments), but it does not address AI-specific issues. Although the Digital Personal Data Protection Act of 2023 addresses the privacy, consent, and processing of personal data, it places a greater emphasis on user data than on the security of AI algorithms, models, and training datasets. While the Indian Computer Emergency Response Team (CERT-In) has established standards for incident reporting, system hardening, and log retention, these criteria are still quite broad and do not specifically cover attack routes that are unique to AI. Despite the ethical and trust factors surrounding AI being covered by the NITI Aayog's National Strategy on Artificial Intelligence (2018), it is not a legally enforceable framework and provides little advice on specific cybersecurity measures.

Conversely, global events point to a more focused strategy. The European Union AI Act (2024) categorizes AI systems into risk categories of unacceptable, high, limited, and minimal, and it mandates that high-risk systems be subjected to thorough risk assessment, bias testing, and security audits. In the United States, the NIST AI Risk Management Framework (2023) provides organized instructions for identifying, analyzing, and mitigating AI-related risks throughout the system lifecycle. The AI Governance Framework in Singapore places a strong emphasis on accountability, transparency, and the necessity for human supervision in decision-making systems powered by artificial intelligence. These frameworks are proactive efforts to foresee threats unique to AI, not just respond to them.

Despite this progress, India still has a big gap in addressing cybersecurity threats brought about by AI. There is no legal requirement for businesses to implement security-by-design principles in AI development, report AI system vulnerabilities, or routinely test the integrity of AI models in the absence of laws specific to AI.

As a result, businesses are vulnerable to sophisticated attacks that can circumvent conventional security measures. Furthermore, there is no agreed-upon categorization of AI systems based on their possible impact on cybersecurity, and enforcement procedures are ambiguous.

A collaborative approach between regulators, industry participants, and technology developers will be necessary to close this gap. India might develop a national AI security policy that is context-specific by modifying pertinent elements of the NIST AI Framework and EU AI Act. Mandatory AI risk classification, security standards for AI providers, and industry-wide adoption of incident reporting criteria particular to AI should be included in such a framework. India runs the danger of falling behind its worldwide counterparts in safeguarding companies and people from the next wave of AI-enabled cyber threats if it does not take such proactive measures.

RECOMMENDATIONS

The growing sophistication of AI-enabled cyberattacks demands a holistic, multi-stakeholder response that integrates technical safeguards, organizational readiness, legal reform, and public awareness. Based on the findings of this study, the following recommendations are proposed:

1. Establish AI-Specific Cybersecurity Standards

India should develop and enforce national AI security guidelines tailored to the unique vulnerabilities of AI systems. These must address:

- **Model Integrity Testing:** Regular adversarial testing to identify weaknesses in AI models before deployment.
- **Dataset Security:** Protection of training data from poisoning and unauthorized manipulation.
- **Algorithm Protection:** Encryption of AI models and deployment in secure environments to prevent theft or tampering.

2. Introduce AI Risk Classification and Compliance Framework

Adopt a system similar to the EU AI Act where AI systems are classified as unacceptable, high, limited, or minimal risk. For high-risk systems such as those used in finance, healthcare, or national infrastructure implement mandatory risk assessments, continuous monitoring, and annual third-party audits.

3. Mandate Security-by-Design Principles

Require AI developers and vendors to integrate security measures from the design phase, rather than retrofitting them after deployment. This includes:

- Built-in defense against adversarial inputs.
- Secure update and patching mechanisms.
- Logging and traceability features to detect and investigate breaches quickly.

4. Strengthen Deepfake and AI-Fraud Countermeasures

Invest in AI-driven deepfake detection tools capable of identifying manipulated audio, video, and text in real time. Corporate networks should deploy these tools for executive communications, while social media platforms should make them mandatory for content verification.

5. Improve Incident Detection, Reporting, and Response

Develop AI-specific incident reporting protocols that require enterprises to report AI-related breaches to CERT-In within 24-48 hours. Establish a national AI threat intelligence sharing network to ensure faster cross-industry response and mitigation.

6. Enhance Workforce and Public Awareness

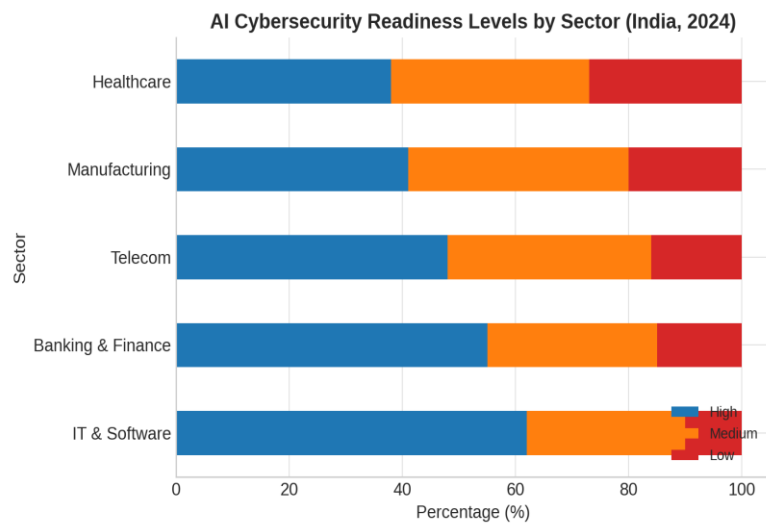
- **Enterprise Level:** Conduct AI-cybersecurity training for employees, especially in finance, IT, and leadership roles.
- **Public Level:** Launch government-led media literacy campaigns to educate citizens about AI-driven scams, deepfake threats, and safe verification practices.

7. Align with International Best Practices

Collaborate with global leaders in AI governance, adopting elements from:

- NIST AI Risk Management Framework (USA) for structured AI risk control.
- Singapore AI Governance Framework for transparency and accountability.
- OECD AI Principles for ethical and trustworthy AI deployment.

AI Cybersecurity Readiness by Sector (India, 2024)



Source: Based on Industry survey

Observation:

- IT & Software leads with 62% high readiness, reflecting better awareness and access to skilled cybersecurity professionals.
- Banking & Finance (55%) and Telecom (48%) show moderate readiness but face constant targeting from AI-enabled fraud.
- Manufacturing (41%) and Healthcare (38%) have the lowest high-readiness scores, relying heavily on outdated security measures.
- Low readiness levels are highest in healthcare (27%), posing risks for patient safety and data privacy.

Implication:

- AI cybersecurity maturity is uneven across sectors, leaving critical industries like healthcare and manufacturing highly vulnerable.
- Cross-sector knowledge sharing and government-supported readiness programs are essential to close these gaps.

CONCLUSION

The rapid integration of Artificial Intelligence into Indian enterprises is driving innovation, efficiency, and competitive advantage. However, it is also introducing a new generation of cybersecurity threats that are more complex, targeted, and costly than traditional IT risks. This research has shown that AI-specific cyber incidents in India have risen sharply in recent years, with threats such as deepfake fraud, data poisoning, and adversarial manipulation posing significant challenges to business continuity and trust.

While India has made progress in general cybersecurity regulation, the absence of AI-specific frameworks leaves enterprises vulnerable to evolving threats. The findings suggest an urgent need for proactive, AI-focused resilience strategies that combine technical safeguards, organizational readiness, and regulatory reform.

The proposed AI Cybersecurity Resilience Framework centered on prevention, detection, response, and recovery offers a practical approach for Indian enterprises to secure their AI systems.

Ultimately, safeguarding AI in India will require collaboration between policymakers, industry leaders, and technology vendors, as well as alignment with emerging global best practices. By taking a proactive approach today, Indian enterprises can ensure that AI remains a driver of growth rather than a source of systemic risk.

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UNACCOUNTED WEALTH AND ILLICIT TAX AVOIDANCE PRACTICES IN INDIA'S REAL ESTATE SECTOR: EVALUATING THE IMPACT OF GOVERNMENT CRACKDOWNS IN SECOND-TIER URBAN CENTERS

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ABSTRACT

India's real estate sector has been for a long time a point of focus for unaccounted wealth circulation and illicit tax avoidance practices, especially because of its high-value cash-based transactions. While reforms have received substantial attention in major metropolitan areas, second-tier urban centers remain relatively underexamined. This research hunts through various policy interventions like the 2016 currency invalidation move of 2016, the implementation of the Real Estate (Regulation and Development) Act (Real Estate Regulatory Authority (RERA)), amendments to the legislation against proxy property holdings, and the introduction of Goods and Services Tax (GST) to study their efficiency in curbing illicit financial activity in emerging urban markets. Relying entirely on pre-existing published data from government documents, media reports, real estate analytics, and academic papers, the paper explores the shifts in transaction trends, registration practices, and pricing corrections. While some progress is evident, systemic inefficiencies and enforcement challenges continue to obstruct complete transparency in Tier II regions. The study concludes by proposing robust digitization, localized Real Estate Regulatory Authority (RERA) empowerment, and awareness leads as next steps for sustained reform.

Keywords: *unaccounted wealth, illicit tax avoidance practices, second-tier urban centers, Real Estate Regulation (Real Estate Regulatory Authority (RERA)), Benami Transactions*

1. INTRODUCTION

Taxation forms the financial pillar of any functioning government, enabling the delivery of required infrastructure and public services. However, the widespread practice of illicit tax avoidance practices manifesting through hidden incomes, inflated expenses, or undocumented transactions undermines this crucial revenue stream. In India, the real estate sector has come to light as a noteworthy arena for such financial misconduct due to the prevalence of high-value dealings and the historic use of unaccounted cash in property exchanges.

According to projections by IBEF (2024), India's real estate industry is on course to reach a overall sector valuation of USD 1 trillion by 2030. Much of this growth is now being driven by second-tier urban centers such as Visakhapatnam, Pune, Indore, and Lucknow. These cities not only provide promising development opportunities, but also present distinctive regulatory vulnerabilities. Their semi-urban character, coupled with administrative limitations, makes them specifically doubtful to unaccounted wealth flows, informal ownership structures, and weak adherence to regulations practices.

Recognizing these difficulties, the Indian government has introduced multiple regulatory interventions over the past decade. Initiatives such as the 2016 currency invalidation move of 2016, the enforcement of Real Estate Regulatory Authority (RERA), amendments to the legislation against proxy property holdings, and the introduction of Goods and Services Tax (GST) were all aimed at enhancing transparency and reducing illicit financial activity within the real estate domain.

This paper undertakes an in-depth examination of these reforms, highlighting specifically on their implementation and results within Tier II markets. By relying entirely on pre-existing published data sources, the study aims to critically understand how efficient these steps have been in curbing illicit tax avoidance practices, identifying persisting loopholes, and suggesting pathways for more efficient regulatory enforcement moving forward.

2. LITERATURE REVIEW

Multiple academic and policy-oriented studies have investigated the crossing of unaccounted wealth circulation and real estate practices in India. Chattopadhyay (2018) highlighted that prior to the major regulatory changes in 2016, approximately 30–40% of real estate transactions in India were conducted through cash, facilitating fertile ground for unaccounted income circulation. This was largely backed by the informal dynamics between property developers and buyers, as noted by Aggarwal (2020), who emphasized how cash dealings had become normalized in many parts of the country.

Singh and Bandyopadhyay (2017) observed a temporary slump in transaction volumes and real estate prices in the aftermath of currency invalidation move of 2016, especially in cities with minimal regulatory oversight. Similarly, Joshi (2019) examined the implementation of Real Estate Regulatory Authority (RERA) and found it had led to a substantial increase in formal registrations and regulatory oversight, albeit predominantly in larger urban areas, with limited spillover into smaller cities.

Although these individual studies impart understanding into the effectiveness of singular reforms, there exists a gap in literature concerning the cumulative impact of numerous government interventions in Tier II real estate markets. This study aims to bridge that gap by employing a policy-impact framework that collectively evaluates the efficacy of key reforms in these emerging urban areas.

3. OBJECTIVES OF THE STUDY

To inspect the extent of unaccounted wealth circulation in the real estate markets of second-tier urban centers before the implementation of government interventions.

To evaluate the influence of key reforms namely currency invalidation move of 2016, Real Estate Regulatory Authority (RERA), the Benami Transactions Amendment Act, and GST on enhancing tax adherence to regulations and transparency in these regions.

To identify the remaining structural gaps and enforcement challenges that persist to allow unaccounted transactions and benami ownership in Tier II real estate markets.

4. METHODOLOGY

This study is based on a qualitative analysis of pre-existing published data, from a diverse range of trust-worthy sources. These include official publications from government agencies including the Ministry of Housing and Urban Affairs (MoHUA), the Central Board of Direct Taxes (CBDT), and the Ministry of Finance. Supplementary insights are gathered from industry-specific bodies such as the Confederation of Real Estate Developers' Associations of India (CREDAI), Knight Frank, and Anarock, in addition to parliamentary proceedings, academic journals, and leading media publications.

A descriptive-analytical framework supports the analysis, incorporating key indicators such as real estate price trends, stamp duty and property registration records, and income tax adherence to regulations metrics. Comparative snapshots from selected second-tier urban centers are also employed to contextualize patterns in enforcement and market behavior. A sophisticated understanding of reform effects across various urban ecosystems is made possible by this tiered approach.

5. ANALYSIS AND FINDINGS

5.1 Pre-2016 Scenario: Widespread Use of Cash

Before 2016, cities like Coimbatore, Bhopal, and Lucknow were majorly dependent on cash transactions mostly accounting for nearly half of the total property value. These informal deals encouraged benami holdings and price inflation, allowing illicit tax avoidance practices to flourish.

5.2 Impact of currency invalidation move of 2016

The withdrawal of ₹500 and ₹1,000 notes in late 2016 caused a sharp decline—between 30% and 40% in property sales, especially in secondary markets. currency invalidation move of 2016 also narrowed the gap between market prices and official circle rates, creating more price transparency.

5.3 Role of Real Estate Regulatory Authority (RERA)

The Real Estate (Regulation and Development) Act required developers to register projects, disclose ownership information, and resolve buyer complaints. Over 32,000 projects were registered by 2022, but only about a third were in Tier II or III cities. Strong enforcement in states like Gujarat and Maharashtra helped improve adherence to regulations, but digital and manpower limitations constrained reach in other regions.

5.4 Effect of the Benami Transactions Act

By 2023, authorities had attached benami properties worth over ₹18,000 crore—many located in second-tier urban centers. While this suppressed over benami ownership, loopholes still allowed layered ownership structures using extended family names or proxy entities.

5.5 Goods and Services Tax (GST) Implementation

The introduction of Goods and Services Tax (GST) helped formalize tax structures in under-construction properties. Developers were incentivized to keep formal records to claim input tax credits.

However, cash deals remain common in the sale of ready-to-move properties, which are exempt from Goods and Services Tax (GST).

6. CASE SNAPSHOT NAGPUR (MAHARASHTRA):

Following Real Estate Regulatory Authority (RERA)'s introduction, Nagpur experienced a 120% rise in project registrations between 2017 and 2022. Although currency invalidation move of 2016 temporarily deflated prices in the luxury housing segment by nearly 18%, the city's cash-based land deals—especially in plot transactions—remained active, revealing persistent informal channels.

Surat (Gujarat):

The diamond-fueled economy of Surat gradually moved toward formal payment systems post-currency invalidation move of 2016, with more buyers opting for cheque transactions. Yet, loopholes persisted in the form of land transfers involving shell companies, indicating that regulatory enforcement faced difficulty to contend with creative evasion.

Lucknow (Uttar Pradesh):

Enforcement of the Benami Transactions Act led to the attachment of assets worth ₹600 crore since 2020. Despite this, Real Estate Regulatory Authority (RERA)'s digital grievance redressal mechanism remained less efficient in Lucknow in comparison to larger cities, slowing the pace of consumer protection.

Visakhapatnam (Andhra Pradesh):

Real estate activity spiked around 2015–16 amid discussions of capital relocation, resulting in speculative land buying. Post-reforms, the city saw an 18% drop in land registrations but a 27% rise in transactions routed through formal banking channels. However, land encroachment and benami ownership in peri-urban tribal zones remain challenges.

Pune (Maharashtra):

Despite bordering Tier I status, Pune's suburban stretch behaves like a Tier II market. With over 3,000 project registrations under Real Estate Regulatory Authority (RERA) by 2023, regulatory adherence refined. Yet, survey data suggested that 41% of under-construction homebuyers were unaware of their Goods and Services Tax (GST) eligibility. In outlying areas like Wagholi and Hinjawadi, unrecorded cash dealings continue, exposing gaps in implementation.

7. CHALLENGES AND LOOPHOLES

Feeble Institutional Capacity: Several state Real Estate Regulatory Authority (RERA) authorities in second-tier urban centers are hampered by limited staff, outdated IT systems, and low public visibility.

Persistent Informal Brokerage: Unregistered middlemen still play a dominant part in property deals, facilitating undocumented cash components.

Benami Workarounds: Evasion tactics like property purchases in relatives' names or layering through cooperative societies persist to bypass enforcement.

Lack of Public Awareness: Often homebuyers remain unaware of the tax benefits of full disclosure and the legal coverage offered under Real Estate Regulatory Authority (RERA) and Goods and Services Tax (GST).

8. RECOMMENDATIONS

Strengthen State Real Estate Regulatory Authority (RERA) Capacity: Invest in human resources, training, and digital infrastructure at the state level to make sure regular enforcement across cities.

Implement Geo-Tagged Registries: Linking property records to spatial data can help avert fictitious ownership and layering of titles.

Encourage Transparent Transactions: Offer fiscal motives such as reduced stamp duties or registration fees for buyers using traceable payments.

Conduct Awareness Campaigns: Initiate public education initiatives highlighting on legal rights, fair practices, and tax advantages in real estate dealings.

Enhance Inter-Agency Coordination: Enable seamless data-sharing among income tax authorities, land registrars, and Real Estate Regulatory Authority (RERA) offices to recognise suspicious patterns.

9. CONCLUSION

The Indian real estate sector, while being a pillar of economic growth, has also served as a critical channel for unaccounted wealth and illicit tax avoidance practices. This dual nature has posed persistent challenges for regulators and policymakers, particularly in rapidly urbanizing second-tier urban centers.

Drawing exclusively on secondary sources, this study explored the collective result of landmark reforms currency invalidation move of 2016, Real Estate Regulatory Authority (RERA), the Benami Transactions Amendment Act, and Goods and Services Tax (GST) on these changing markets. The findings recommend that while transparency and documentation have improved in several regions, deep-rooted behavioral and structural issues continue to limit full reform implementation.

Currency invalidation move of 2016 created a temporary dent in cash transactions, but its long-term deterrence effect is mixed. Real Estate Regulatory Authority (RERA) has led to greater regulatory adherence to regulations and project accountability, yet its uneven rollout in second-tier urban centers hampers its reach. Similarly, although the Benami law has empowered enforcement agencies, ownership layering tactics remain a common evasion route. The Goods and Services Tax (GST) regime has introduced clarity in under-construction projects but left a loophole by exempting completed properties.

Case studies from cities like Nagpur, Surat, Lucknow, and Pune underscore that although upside has been made, real estate in second-tier urban centers continues to operate in a semi-formal grey zone. Challenges include under-resourced Real Estate Regulatory Authority (RERA) units, unregulated intermediaries, limited public understanding, and fragmented databases.

To truly align the real estate sector with India's vision of a transparent and inclusive economy, reforms must now go beyond central legislation. The focus must move to localized, state-driven implementation, reinforced by digital innovation, inter-agency collaboration, and behavioural change between buyers and developers. Only then can India meaningfully reduce unaccounted wealth and build a housing market rooted in fairness, legality, and accountability.

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2. Book review must contain the name of the author and the book reviewed, the place of publication and publisher, date of publication, number of pages and price.
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All references must be arranged first alphabetically and then it may be further sorted chronologically also.

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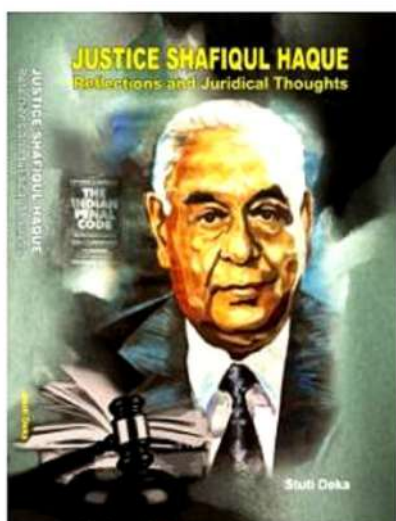


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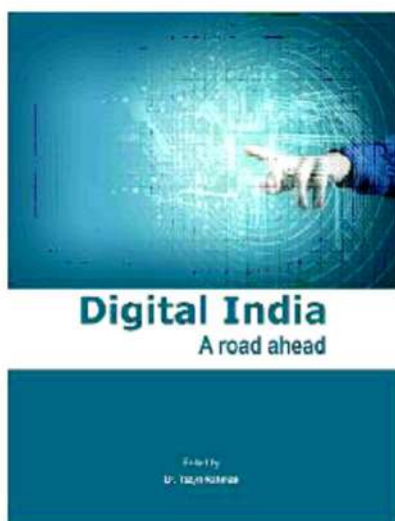
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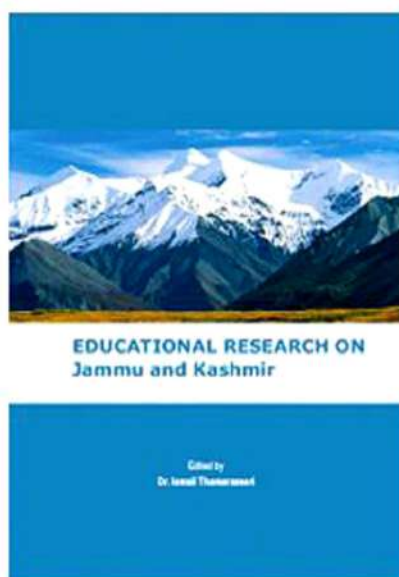
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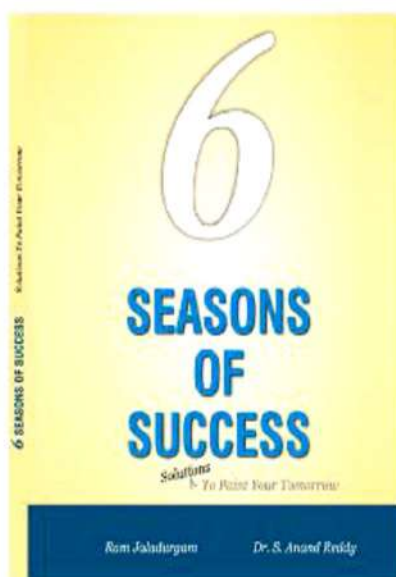
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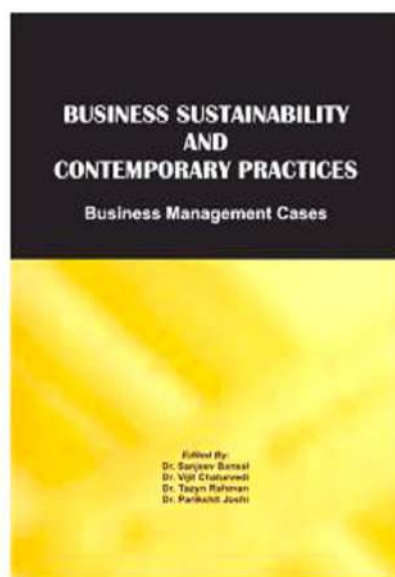
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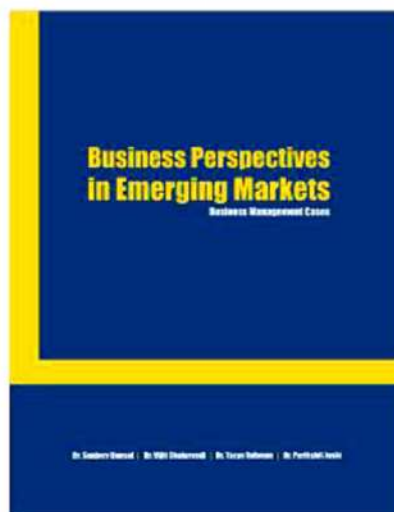
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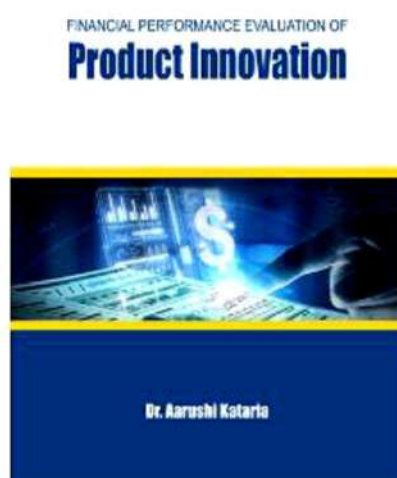
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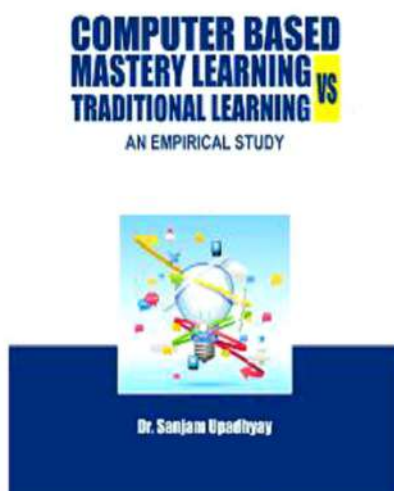
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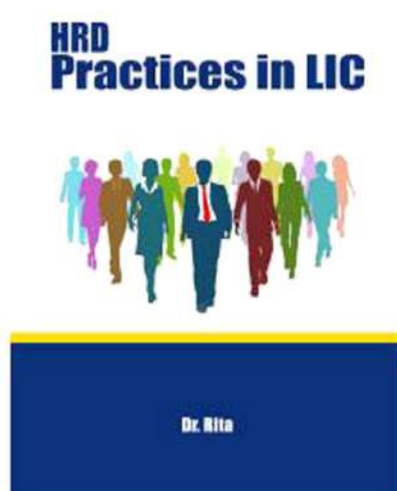
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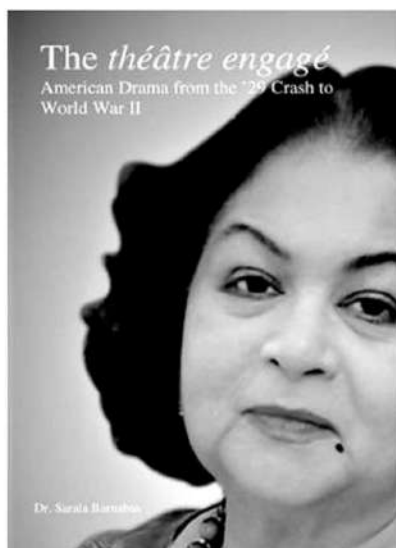
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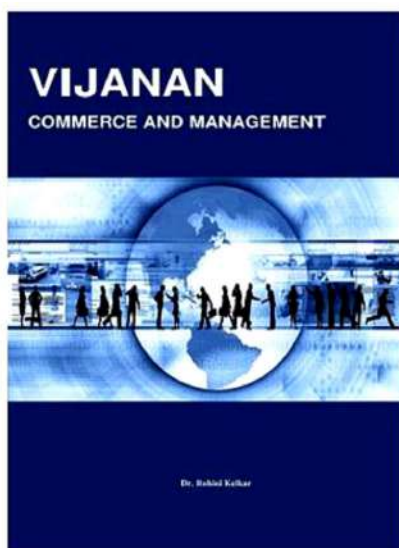


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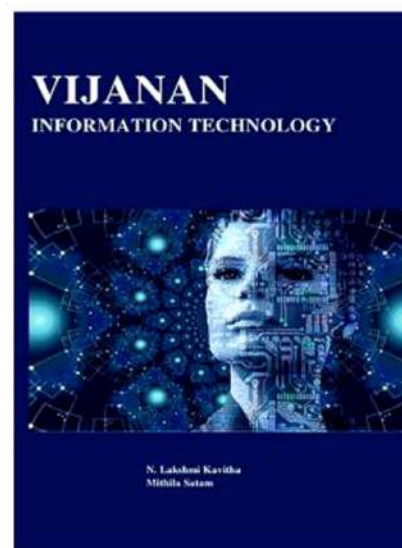
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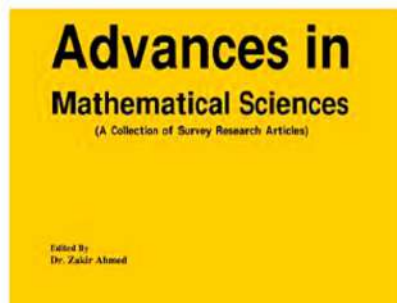
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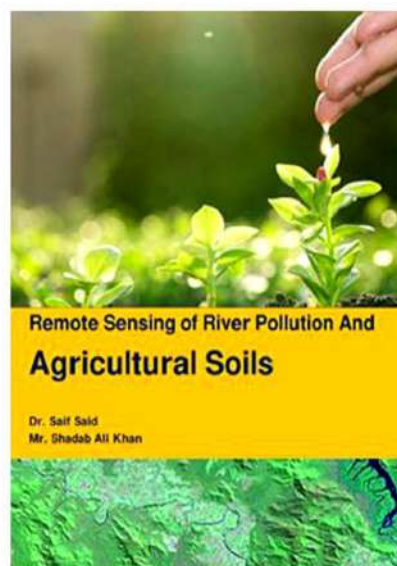
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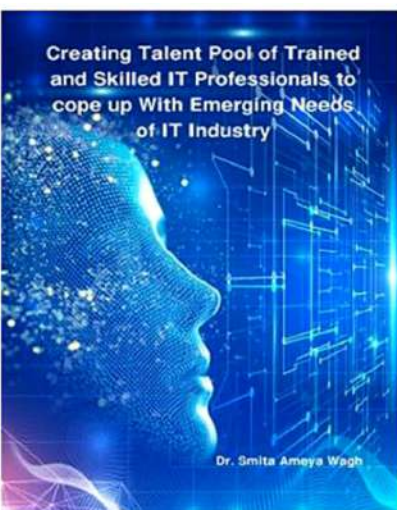
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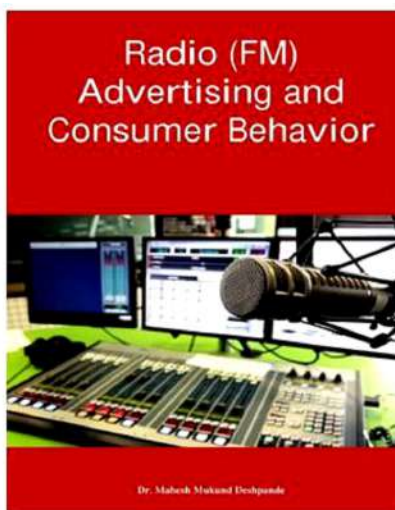
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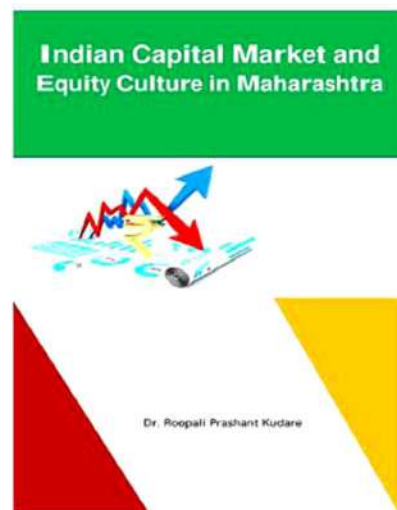
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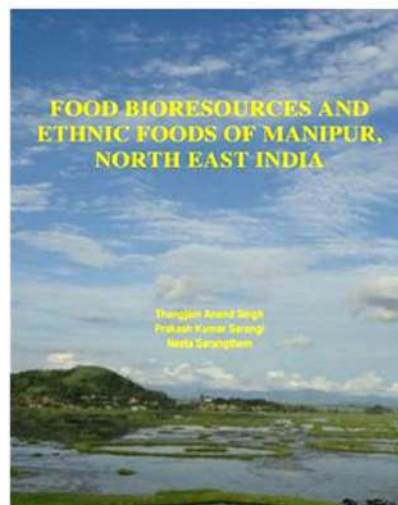
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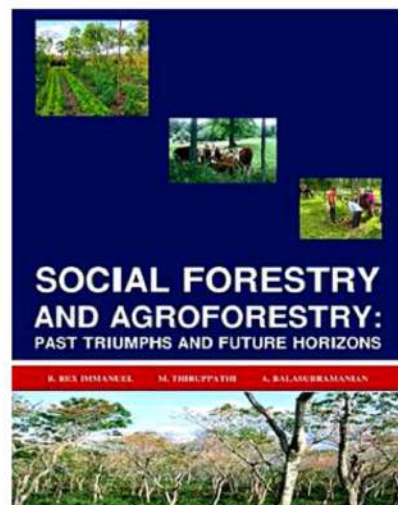
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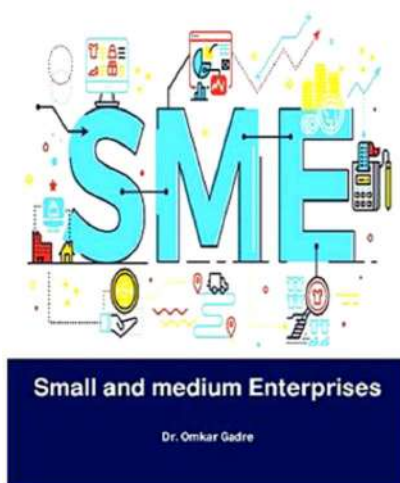
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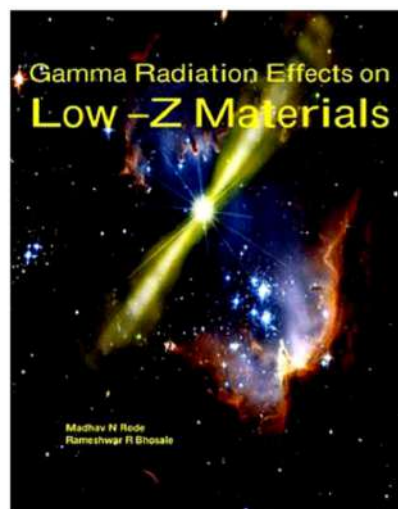
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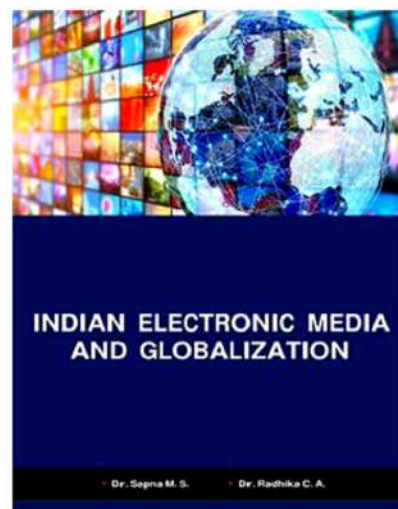
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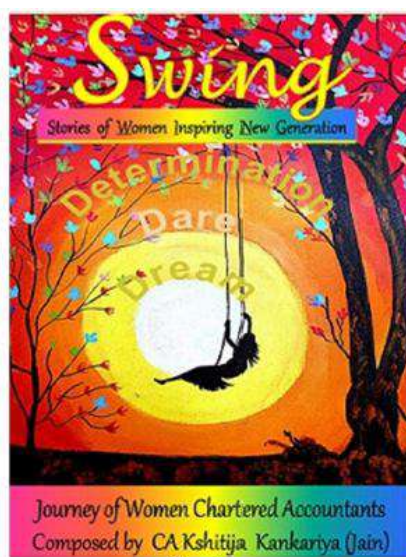
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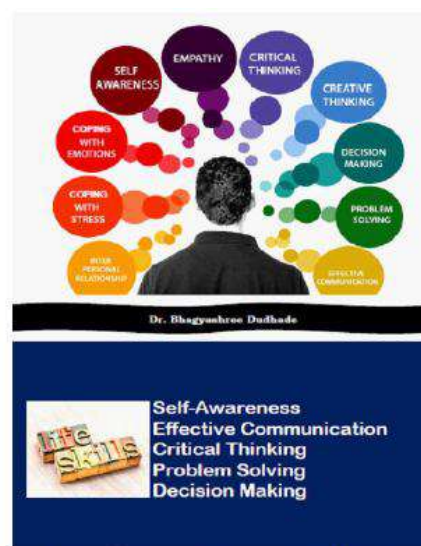
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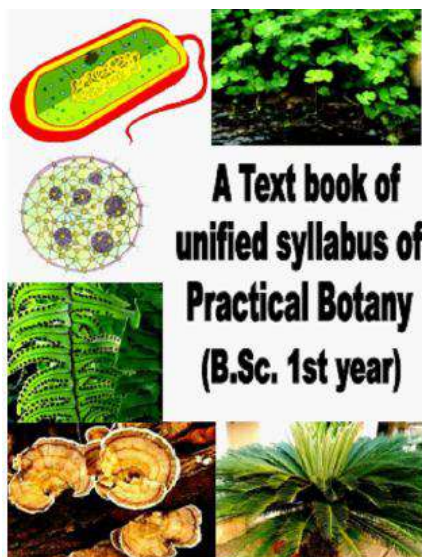
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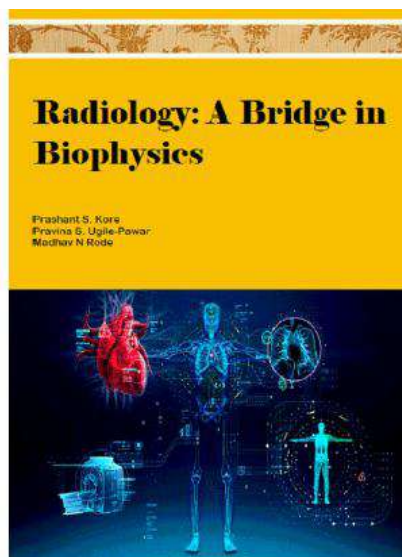
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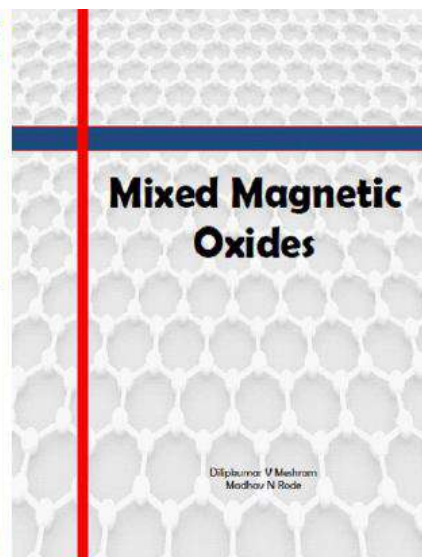
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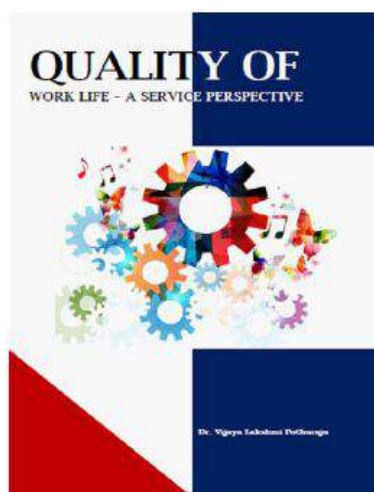


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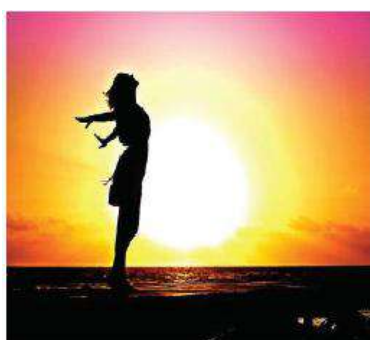
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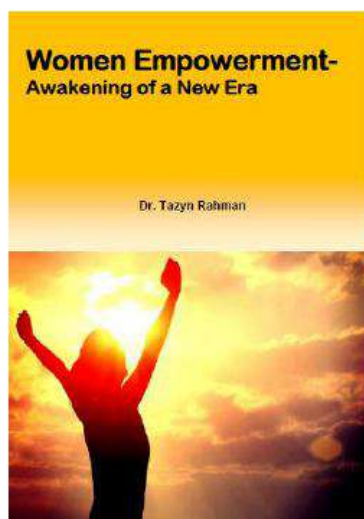


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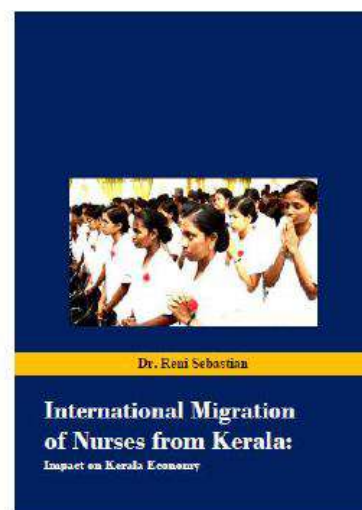


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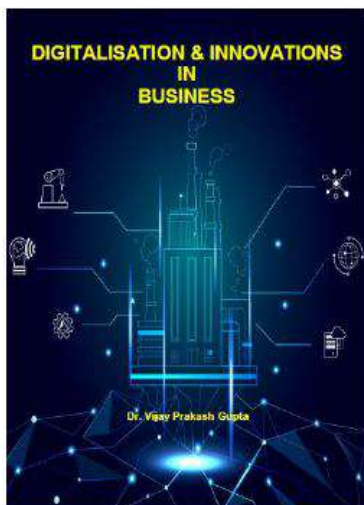


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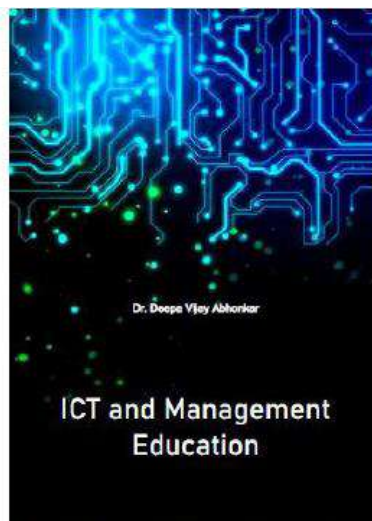
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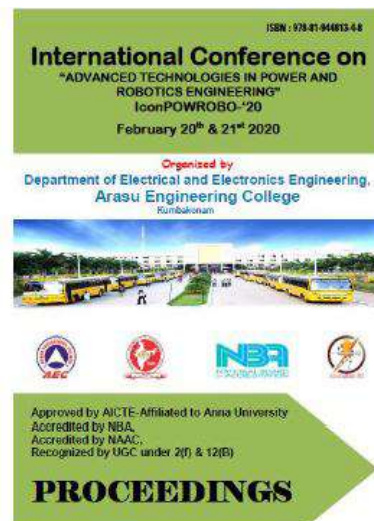
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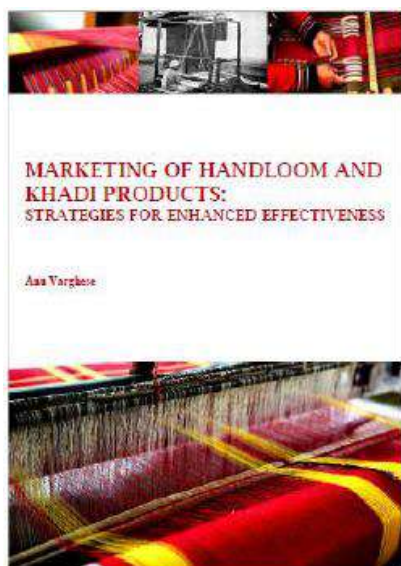
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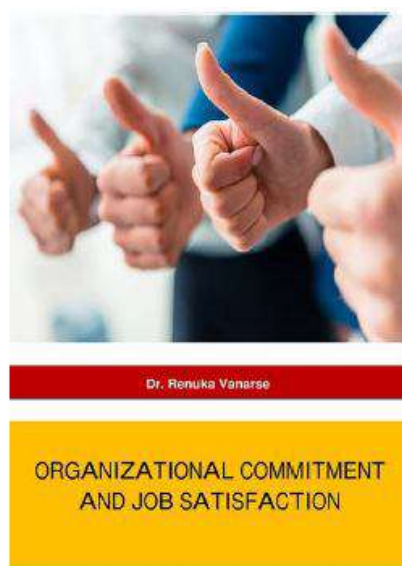
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